

# ABSTRACTS BOOK



# SELÇUK 9. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ



ISBN: 978-625-6830-67-7



*SELCUK 9TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES  
DECEMBER 15 - 17, 2023  
KONYA*

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*Issued: 28.12.2023*

*ISBN: 978-625-6830-67-7*

# ***CONFERENCE ID***

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**SELCUK 9TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES**

**DATE – PLACE**

**DECEMBER 15 - 17, 2023**

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**EVALUATION PROCESS**

**All applications have undergone a double-blind peer review process.**

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**PRESENTATION**

**Oral presentation**

**ASSOCIATION & ACADEMIC INCENTIVES :**

**99 Papers From Turkey And 160 Papers From Other Countries have been presented  
in the conference**

**Members of the organizing committees of the conference perform their duties with an  
"official assignment letter"**

**LANGUAGES**

**Turkish, English, Russian, Persian, Arabic**

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NEWART 2<sup>nd</sup> INTERNATIONAL GROUP EXHIBITION  
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Salon	Moderator		Bildiri No ve Başlığı / Paper ID and Title	Authors
SALON 1	Assist. Prof. Dr. İbrahim Halil GÜZEL	1	LİBERAL DÜNYA DÜZENİNDE BATILI GÜÇLERİN İNSAN HAKLARI KARNESİ: TEORİK BİR DEĞERLENDİRME	Doktor Öğretim Üyesi, Seda Gözde Tokatlı
		2	DETENTION OF THE MIGRANTS AND ROLES OF SOCIAL WORKERS IN DETENTION CENTERS	Dr, Ezgi ARSLAN ÖZDEMİR
		3	Monumental Tree Potential of Two Brother Plane Trees in Boğazköy (Karacabey, Bursa)	Ali İmamoğlu
		4	Land Use and Human Pressures in Kocaçay Basin Flooded Forests	Ali İmamoğlu
		5	TÜRKİYE'DE CİNSİYET FAKTÖRÜNÜN KADINLARIN YAŞAMLARI ÜZERİNE YANSIMALARI	Dr., Murat SARI
		6	MAPPING ACADEMIC RESEARCH ON WOMEN'S POVERTY: A BIBLIOMETRIC ANALYSIS USING VOSVIEWER	Doç.Dr., İsmail DÖNMEZ Öğr. Gör. Dr. Kenan ÖZMEN
		7	EVALUATION OF THE CHERRY HARVEST FESTIVAL IN GAZİANTEP IN THE CONTEXT OF RURAL DEVELOPMENT	Doktora Öğrencisi Feray TOPCU Doç. Dr. Nadire KARADEMİR
		8	ANALYSIS OF THE GOLDSMİTHRY SECTOR IN KAHRAMANMARAŞ ON THE AXIS OF SUSTAINABLE DEVELOPMENT	Doç. Dr. Nadire KARADEMİR Doktora Öğrencisi Feray TOPCU
		9	SOCIAL POLICIES IN HIGH-SCALE PLANS: SOCIAL POLICIES IN THE FIRST AND SECOND FIVE-YEAR DEVELOPMENT PLANS	Assist. Prof. Dr. İbrahim Halil GÜZEL
		10	HUMAN RIGHTS IN INTERNATIONAL REGULATIONS	Assist. Prof. Dr. İbrahim Halil GÜZEL

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Salon	Moderator		Bildiri No ve Başlığı / Paper ID and Title	Authors
SALON 2	Asst. Prof. Nurkan YILMAZ	1	Examination of Jumping Performances of Sedentary Boys Receiving Basketball Training	Asst. Prof. Nurkan YILMAZ
		2	Examining the Effect of Pre-Adolescent Training on Balance Skills	Asst. Prof. Nurkan YILMAZ
		3	Dopingle Mücadeleye Yönelik Eğitim Faaliyetlerinin İncelenmesi	Dr. Faik Orhun TAPŞIN Dr. Öğr. Üyesi Nur KOÇ DOĞAN
		4	COMPARISON OF SPORTS MANAGEMENT STRUCTURE: THE EXAMPLE OF TURKEY-AUSTRIA	Yunus İNAN Doç. Dr. Şakir TÜFEKÇİ Doç. Dr. Yalın AYGÜN
		5	COMPARISON OF SPORTS MANAGEMENT STRUCTURE: THE EXAMPLE OF TURKEY- SWEDEN	Yunus İNAN Doç. Dr. Şakir TÜFEKÇİ Doç. Dr. Yalın AYGÜN
		6	COMPARISON OF THE SPORTS MANAGEMENT STRUCTURE OF TURKEY AND THE SPORTS MANAGEMENT STRUCTURE OF THE PEOPLE'S REPUBLIC OF CHINA	Mehmet YAYLACI Doç. Dr. Şakir TÜFEKÇİ Doç. Dr. Yalın AYGÜN
		7	COMPARISON OF SPORTS MANAGEMENT STRUCTURE: THE EXAMPLE OF TURKEY- RUSSIA	Mehmet YAYLACI Doç. Dr. Şakir TÜFEKÇİ Doç. Dr. Yalın AYGÜN

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Salon	Moderator		Bildiri No ve Başlığı / Paper ID and Title	Authors
SALON 3	Doç. Dr. Cihan Kürkçü	1	A SCENARIO-BASED SOLUTION APPROACH FOR A STOCHASTIC CAPACITATED LOT SIZING PROBLEM WITH LIMITED INVENTORY	Asst. Prof. Duygu TAŞ KÜTEN
		2	MANN-KENDALL VE YENİLİKÇİ ŞEN TREND ANALİZİ İLE METEOROLOJİK KURAKLIK ANALİZİ	E. Dilek TAYLAN Taahsin BAYKAL Özlem TERZİ
		3	Yb-Bazlı Yarı Heusler Alaşımının Yapısal, Elektronik, Mekanik ve Fonon Spektrum Özelliklerinin Teorik Olarak İncelenmesi	Doç. Dr. Cihan Kürkçü Doç. Dr. Abdullah Candan
		4	TAM HEUSLER Li 2 MgSb BİLEŞİĞİNİN TEMEL FİZİKSEL ÖZELLİKLERİ ÜZERİNE İLK PRENSİPLER ÇALIŞMASI	Doç. Dr. Abdullah Candan Doç. Dr. Cihan Kürkçü
		5	MOBİLYA VE LEVHA İŞLETMELERİNİN ÜRETİM SÜRDÜRÜLEBİLİRLİĞİ PERFORMANSININ DEĞERLENDİRİLMESİNDE BİR YÖNTEM OLARAK SÜRDÜRÜLEBİLİR DEĞER AKIŞI HARİTALAMA (sür-DAH)	Dr. Öğr. Üyesi, Ahmet Bora KIRKLIKÇI
		6	A Novel Flexible Electrochemical Sensor for Escherichia Coli Pathogen Detection	M.Sc., Orkun ZIYLAN Dr., Mustafa ERKARTAL Prof. Dr., Unal SEN Assoc. Prof., Aytekin UZUNOĞLU

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SALON 4	Doç. Dr. Mehmet Nuri KARDAŞ	1		
		2	İLKÖĞRETİM MATEMATİK ÖĞRETMENİ ADAYLARININ SÖZEL PROBLEM ÇÖZÜM ÖĞRETİMİ İLE İLGİLİ YAKLAŞIMLARI	Kübra Pak VARLI Prof. Dr. Çiğdem KILIÇ
		3	İLKÖĞRETİM MATEMATİK ÖĞRETMEN ADAYLARININ SÖZEL PROBLEM ÖĞRETİM ZORLUĞU SEBEPLERİ İLE İLGİLİ GÖRÜŞLERİ	Kübra Pak VARLI Prof. Dr. Çiğdem KILIÇ
		4	ÖĞRETMEN ADAYLARININ ELEŞTİREL DÜŞÜNME TUTUMLARI VE MEDYA OKURYAZARLIK DÜZEYLERİNİN İNCELENMESİ	Prof. Dr. Sabri SİDEKLİ Arş. Gör. Dr. Sedat ALTINTAŞ
		5	SINIF ÖĞRETMENİ ADAYLARININ KİTAP OKUMA ALIŞKANLIĞINA YÖNELİK TUTUMLARININ İNCELENMESİ	Prof. Dr. Sabri SİDEKLİ Arş. Gör. Dr. Sedat ALTINTAŞ
		6	EXAMINING THE VIEWS OF ELL AND ELT PREP STUDENTS REGARDING HOW EXTRAMURAL ACTIVITIES AFFECT LANGUAGE AND SELF-REGULATION DEVELOPMENT	Yüksek Lisans Öğrencisi, Rahşan KARABULUT
		7	CHALLENGES AND BENEFITS OF THE FLIPPED LEARNING MODEL IN EFL: The Case of Turkish EFL Learners	Ayşenur YILDIRIM EROĞLU Sevim İNAL
		8	Exploring the Sense of Self-Efficacy of Turkish Pre-Service EFL Teachers	Emel Nur Er Sevim İnal
		9	A REVIEW ON THE COMPLIANCE OF ARTICLES PUBLISHED IN THE FIELD OF SPEAKING TRAINING WITH ACADEMIC TEXT WRITING PRINCIPLES	Ayşe KANAT Doç. Dr. Mehmet Nuri KARDAŞ
		10	A REVIEW ON TRENDS OF ARTICLES PUBLISHED IN THE FIELD OF SPEAKING TRAININ	Ayşe KANAT Doç. Dr. Mehmet Nuri KARDAŞ

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SALON 5	Prof. Dr. Mehmet Gökhan GENEL	1	MİLLİYETÇİLİK BAĞLAMINDA GÜZ SANCISI FİLMİNİN ANALİZİ	Öğretim Görevlisi Eylem Dana Usta
		2	CRAVING FOR ENJOYMENT: A CONCISE REVIEW OF SOCIAL MEDIA FOOD PHOTO SHARING BEHAVIOR AND A CONCEPTUAL MODEL	Assoc.Prof.Dr. Fatih ŞAHİN
		3	EDGE OF CUSTOMER EXPERIENCE: QUALITATIVE RESEARCH ON VIRGIN GALACTIC'S SPACE TOURISTS	Assoc.Prof.Dr. Fatih ŞAHİN
		4	A STUDY ON THE TYPES OF ACCOUNTS FOLLOWED BY SOCIAL MEDIA USERS	Dr. Öğr. Üyesi Feryat ALKAN
		5	CONFUSION OF THE CONCEPTS OF DATA, INFORMATION AND INFORMATION AND ITS REFLECTIONS IN NEW MEDIA	Prof. Dr. Mehmet Gökhan GENEL Alev Derya KARAKAYA
		6	RELIABILITY OF NEWS IN NEW MEDIA PLATFORMS	Prof. Dr. Mehmet Gökhan GENEL Alev Derya KARAKAYA
			KENT PARKLARININ LOKASYONU VE MEKAN KALİTESİ ARASINDAKİ İLİŞKİSİ: KIRŞEHİR TABİAT PARKI VE MASAL PARK ÖRNEKLERİ ÜZERİNDEN KARŞILAŞTIRMALI BİR İNCELEME	Arş. Gör., Albeniz Tuğçe EZME GÜRLEK Lisans Öğrencisi, Ayşe BİÇER
			IMPACTS OF THE COVID-19 PANDEMIC FOR URBAN WISHES IN SMALL ANATOLIAN CITIES: THE CASE OF KIRŞEHİR, TURKEY	Albeniz Tuğçe EZME GÜRLEK
		7	DOĞAL AFETE MARUZ KALAN BİREYLERİN YENİ İLETİŞİM MECRALARINI KULLANIMI VE AFET BİLGİSİ DÜZEYLERİ ÜZERİNE BİR İNCELEME	Süleyman ATEŞ Doç. Dr. Mustafa İNCE
8	KULLANICILARIN SOSYAL MEDYADA MOTİVASYON ARAYIŞLARI ÜZERİNE BİR ANALİZ	Doç. Dr. Mustafa İNCE		

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SALON 6	Prof. Dr. Umut KARABULUT	1	PERSONALITY TRAITS OF SULTAN ALP ARSLAN AS AN EXAMPLE OF A CHARISMATIC RULER	Assoc. Prof. Dr Mehmet Ali KAPAR
		2	KARAMAN AND KARAMANOĞULLARI ACCORDING TO ŞEHABEDDİN B. FAZLULLAH AL-ÖMERİ'S MASÂLIQ AL-EBSAR Fİ MEMÂLIQ AL-EMSÂR	Assoc. Prof. Dr Mehmet Ali KAPAR
		3	TARİHSEL SÜREÇTE TÜRK KÖY YAPILANMASI ve 442 SAYILI KÖY KANUNU	Kadir PETEK
		4	KADIN BAKIŞINDAN REJİM DEĞİŞİKLİĞİ: RESSAM NACİYE NEYYAL'İN HATIRALARINDA MEŞRUTİYETİN İLANI VE GÜNLÜK HAYATTA YANSIMALARI	Doç. Dr. Sezen Karabulut
		5	SENİHA SAMİ (Moralı) ve HATIRALARI	Doç. Dr. Sezen Karabulut
		6	MÜTTEFİKLERİN BOZULAN PLANLARI VE TÜRKİYE'DE YENİ DÜZEN, MUDANYA KONFERANSI GÜNLERİNDE AMERİKAN BASINI VE TÜRK-YUNAN MESELESİ	Prof. Dr. Umut KARABULUT

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SALON 7	Doç. Dr. Nurten KIMTER	1	ANALYSIS OF THE VALUES PSYCHOLOGY IN THE CONTEXT OF THE “ÖMÜR DEDİĞİN” PROGRAM	Büşra ARSLANBEY Doç. Dr. Nurten KIMTER
		2	SAĞLIK HİZMETLERİNDE MANEVİ DANIŞMANLIK VE REHBERLİK	Yüksek Lisans Öğrencisi, Abdüssamet CİNGÖZ
		3	KUR’AN’DA SABIR VE TEVEKKÜL	FATMA ÖZDİL
		4	A STUDY ON ETHICAL VALUES PROPENSITY AMONG UNIVERSITY STUDENTS	Serdar YILMAZ DOÇ. DR. Nurten KIMTER
		5	KUR’AN KURSU ÖĞRENCİLERİNİN KAYGI DÜZEYLERİ VE KİŞİLİK YAPILARI ARASINDAKİ İLİŞKİNİN İNCELENMESİ: İSTANBUL ÖRNEĞİ	Muhammed Celal ŞAHİN



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SALON 8	Doç. Dr. Yakup ASLAN	1	BİST SİGORTA ENDEKSİ İLE SİGORTA PRİMLERİ ARASINDAKİ NEDENSELLİK İLİŞKİSİ	Dr. Öğr. Üyesi, M. Hadin ÖNER
		2	ACCOUNTING OF BIOLOGICAL ASSETS WITHIN THE SCOPE OF THE STANDARD FOR AGRICULTURAL ACTIVITIES (TAS 41)	Doç. Dr., Servet SAY
		3	PROFESSIONAL SKEPTICISM IN ACCOUNTING AUDITING	Doç. Dr. Yakup ASLAN
		4	CARBON ACCOUNTING IN A SUSTAINABILITY PERSPECTIVE	Doç. Dr. Yakup ASLAN
		5	MERSİN İLİNDE ÇİFTÇİLERİN RİSK TOLERANSI VE FİNANSAL OKURYAZARLIK DÜZEYİ: BİR ALAN ARAŞTIRMASI	Ziraat Mühendisi, Şirin HAYRAN Prof. Dr. Şinasi AKDEMİR

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SALON 9	Assist. Prof. Dr. İCésar Garza	1	HARNESSING THE POWER OF HUMAN INGENUITY: EXPLORING THE NATURAL MOVEMENT OF THE MIND IN PROBLEM SOLVING	Raghavi Janaswamy, Saraswathi K. Vasudev
		2	STREAMLINING THE PRODUCTION OF SCREEN-RECORDED VIDEOS: IMPLEMENTING AN E-CONTENT PRODUCING ALGORITHM	Shahad Hederman Lucy Nagoor,
		3	HARNESSING THE POWER OF ONTOLOGIES FOR SMART LEARNING IN MUSIC EDUCATION: A ROBUST FRAMEWORK FOR KNOWLEDGE ORGANIZATION AND APPLICATION	Prof. Dr. Kevin Caputo Annalina Koidl,
		4	EMPOWERING AUTONOMOUS AGENTS WITH CONSTRUCTIVIST LEARNING: A BOTTOM-UP SEQUENTIAL LEARNING ALGORITHM AND TOOLKIT	Assist. Prof. Dr Na Xiao
		5	HARNESSING THE POWER OF DEEP LEARNING FOR AUTOMATED PRODUCT IDENTIFICATION ON ASSEMBLY LINES	Dr. Paulina Pietrzyk- Kowalec
		6	EMPOWERING INDUSTRY 4.0 WITH DEEP LEARNING: ENHANCING ASSEMBLY LINE EFFICIENCY THROUGH AI-POWERED PRODUCT IDENTIFICATION	Danielle Folajimi Yetunde Shackley,
		7	ANALYZING THE PRIVATE MONETARY RETURNS OF HUMANITIES AND EDUCATION DEGREES IN OSUN STATE, NIGERIA	Dr. Azizeh Chalak, Firouzeh Baktash
		8	UNVEILING THE IMPACT OF E-LEARNING TOOLS ON STUDENT LEARNING: AN EXPLORATORY STUDY OF DIVERSE TECHNOLOGICAL APPLICATIONS	Delgadillo Josiel Johnson Mutigwe
		9	DYSLEXIA AND ANXIETY: A QUANTITATIVE INVESTIGATION OF THEIR INTERPLAY IN THE HIGHER EDUCATION SETTING	Charles Kinyua,
		10	DEMISTIFYING THE ANXIETY EXPERIENCE OF DYSLEXIC COLLEGE STUDENTS: A QUANTITATIVE ANALYSIS	Yasmeen Allen Bassas, Sandra Riddell Kuebler,

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SALON 10	Dr. Taige Wang	1	CULTIVATING GRATITUDE FOR STRONGER RELATIONSHIPS: UNDERSTANDING THE ROLE OF PERCEIVED SUPERIORITY	Behzad Mohammadi Zirkuhi
		2	EMOTIONAL INTELLIGENCE: A CRITICAL COMPONENT FOR CIVIC ENGAGEMENT AND SCIENTIFIC DISCOVERY	Sara Moeini Avandi, Abbas Moradi Sam,
		3	UNDERSTANDING CHINESE CONSUMERS IN EUROPE: A CROSS-CULTURAL EXAMINATION OF DECISION-MAKING PROCESSES	Assoc. Prof. Dr. Ricardo Mestre
		4	NURTURING EFFECTIVE COMMUNICATION IN HEARING FAMILIES WITH DEAF CHILDREN: A COMPREHENSIVE GUIDE TO STRATEGIES AND RESOURCES	Shin'ichi Arakawa, Lecture. Dr. Tetsuya Takine, Dr. Masayuki Murata
		5	OVERCOMING CHALLENGES, UNLEASHING POTENTIAL: EMPOWERING CHILDREN WITH LEARNING DIFFICULTIE	I. Isenhardt Nariman O. Kandil, Ehab K. Abou-Elkheir,
		6	NAVIGATING THE DYNAMICS OF CONFORMITY IN HEALTHCARE: FOSTERING INDEPENDENT THINKING AND CRITICAL JUDGMENT	Prof. Dr. Hiroki Yoshikai,
		7	THE ROLE OF EYEWITNESS ACCOUNTS IN FIRE AND EXPLOSION INVESTIGATIONS: NAVIGATING THE CHALLENGES OF MEMORY AND PERCEPTION	D. Kreutzer, S. Müller-Abdelrazeq,
		8	HUMAN-AI COLLABORATION: EXPLORING THE FACTORS INFLUENCING EMPLOYEE DECISION-MAKING IN AN AI-DRIVEN ENVIRONMENT	Han-Mei Zhou, Rongxin Chen,
		9	THE EVOLVING LANDSCAPE OF WORK: HOW AI IS TRANSFORMING EMPLOYEE DECISION-MAKING AND THE NEED FOR ADAPTIVE SKILLS	Dr. Taige Wang
		10	INVISIBLE STRUGGLES: UNVEILING THE PSYCHOLOGICAL TOLL OF COVID-19 ON NON-HEALTHCARE MIGRANT WORKERS IN SAUDI ARABIA'S CONSTRUCTION INDUSTRY	Amr M. Kotb Aneta Oblouková, Eva Vitková

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SALON 11	Prof. Dr. Rishabh Garg	1	LEVERAGING ACCELERATION DATA FOR ACCURATE MOTION ESTIMATION IN VISUAL SLAM	Pauliasi Tony Fakahau Gert Van Schalkwyk,
		2	ENGAGING ONLINE ENGLISH WORD MEMORY: EXPLORING THE IMPACT OF A DIGITAL WORD WALL	Laura A. Jones Frederick Wedzerai Nyakudya
		3	UNVEILING GENDERED PERCEPTIONS: EXPLORING TIGER METAPHORS IN CHINESE CULTURE THROUGH A CORPUS-BASED APPROACH	Chris Cloete Tori R. Dodla,
		4	IMPROVING COVID-19 ICU PROGNOSIS: UTILIZING A FINETUNED LANGUAGE MODEL ON CLINICAL NOTES	Dr. Anwar Kashgari
		5	IMPROVING COVID-19 ICU PROGNOSIS: UTILIZING A FINETUNED LANGUAGE MODEL ON CLINICAL NOTES	Evisa Mitrou, Nicholas Tsitsianis, Supriya Zhang Lei Shinde,
		6	LEVERAGING NAIVE BAYES FOR SENTIMENT ANALYSIS: IDENTIFYING FAKE HEALTH NEWS	Assoc. Prod. Dr. Tingting Xu, Dr. Zhenyu Yan,
		7	BEYOND UNIFORM CONVERGENCE: EXPLORING LEARNABLE PROBLEMS WITH DIVERSE DISTRIBUTIONS	Jun Brooks Roger He,
		8	LEVERAGING BERT FOR SENTIMENT ANALYSIS IN FINANCIAL SOCIAL MEDIA	Dr. Andreas Ahrens, Ojaras Assis. Prof. Dr. Purvinis Jelena Zăšcerinska
		9	1SOCIAL MEDIA AS A MULTILINGUAL PLAYGROUND: CROSS-CORPUS NATIVE LANGUAGE IDENTIFICATION WITH 'REDDIT'	Prof. Dr. Rishabh Garg

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SALON 12	Dr. Daniella Kucsma	1	PUHR(I)PUHR: UNCOVERING THE MEANING OF 'SON'S SON' AT THE SHAHPUHR INSCRIPTION AT HAJI-ABAD	Helena Costa Oliveira, Carmem Oliveira,
		2	SONIC IMPRESSIONS: EXPLORING ART, PERCEPTION, AND COMPOSITION IN SOUNDSCAPES	Ienda Minguito, Jenith Banluta R. Berglund,
		3	BUILDING A THEORETICAL FOUNDATION FOR ASSESSING LANGUAGE LEARNING APPS	T. Backström, M. Bellgran Ayman El-Garem, Riham Adel
		4	MULTI-CHANNEL GRAPH CONVOLUTIONAL NETWORKS FOR ENHANCED ASPECT-LEVEL SENTIMENT ANALYSIS	Mohammed Sani Abdulai Micheli Anna Paola,
		5	ENHANCING SENTIMENT CLASSIFICATION OF ARABIC TWEETS WITH DIALECT-AWARE SUPPORT VECTOR MACHINES	Dr. Intranso Maria Assis. Prof. Dr. Calce Anna Carmelo,
		6	MOTIVATING THE JOURNEY: UNVEILING THE DRIVES AND CONTEXT OF LANGUAGE LEARNING	Dr. Rita Moutinho
		7	UNLOCKING THE SCIENCE OF IMPROVISATION: A DEEP DIVE INTO MANODHARMAM IN CARNATIC MUSIC	Dr. Daniella Kucsma
		8	CONTRASTING AFFRICATION: A COMPARATIVE ANALYSIS OF INITIAL CONSONANTS IN CHINESE AND SLOVAK	Arkaprabha Bhattacharyya, Makarand Hastak

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SALON 13	Assist. Prof. Dr. Timothy Graziano,	1	IMAGE RANKING FOR EFFICIENT OBJECT LABELING IN DETECTION MODEL TRAINING	Khashayar Jafari Kaliji
		2	DELVING INTO THE DIGITAL MIND: DECIPHERING POLITICAL PSYCHOLOGY THROUGH MICROBLOGS	Tarek Abdel Azim Ahmed,
		3	A SURREALIST LANDSCAPE: DECONSTRUCTING NEOLIBERALISM THROUGH CRITICAL PEDAGOGY AND SURREALISM IN SECONDARY ENGLISH LANGUAGE ARTS	Assist. Prof. Dr Timothy Graziano, Jay Fisher
		4	HARNESSING MACHINE LEARNING FOR AUTOMATED ARABIC SYNTAX CORRECTION: INTRODUCING TIBYAN	Haruka Yamashita Mary Jane B. Suarez Ethan Shafer,
		5	VISUAL PROGRAMMING TO CODE: DEEP LEARNING FOR PROGRAM SYNTHESIS FROM FLOWCHART IMAGES	Prof. Dr. Talat Sharafat Rehmani, Phd. Safia Mirza Dr. Hironori Karachi,
		6	DEEP LEARNING FOR MALAY SPEECH RECOGNITION: A NEURAL NETWORK APPROACH	Assis. Prof. Dr. Asif Mansoor,
		7	EXPLORING THE CHALLENGES FACED BY IRAQI EFL UNDERGRADUATES IN FORMING ENGLISH NUMBER WORDS: A DESCRIPTIVE STUDY	Dr: Eman Sarhan Shaker Dr. Elda Maria Ali Shah,
		8	EXPLORING THE PRODUCTION OF GRAMMATICAL COLLOCATIONS BY IRAQI EFL UNIVERSITY STUDENTS	PHD. Hironori Karachi,

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SALON 14	Assoc. Prof. Dr. Mariann Veresne Somosi,	1	SHAPING THE FUTURE OF HEALTHCARE: FOSTERING A NEW GENERATION OF BILINGUAL PHYSICIANS	Assoc. Prof. Dr. Mariann Veresne Somosi,
		2	COMPUTATIONAL LINGUISTICS IN DETECTING DECEPTION: ANALYZING DECEPTIVE AND TRUTHFUL SPEECH	David W. Farler, Perry Haan
		3	ASSESSING TEXTUAL SEMANTIC SIMILARITY THROUGH WORDNET	Krisztina Varga
		4	QUANTIFYING GROUP EMOTIONAL INTELLIGENCE: A WEIGHTED APPROACH INTEGRATING ROLE INFORMATION	Dr. Zoltan Nagy, PHD: Candidate Edlira Donefski,
		5	EXPLORING UVULAR VARIATION IN HASAWI ARABIC: A HARMONIC SERIALISM ANALYSIS	Tina Donefski Wan-I Lee, Nelio Mendoza Figueredo
		6	STRATEGIC ANALYSIS FOR SOLAR ENERGY IN EGYPT BY 2035 USING DYNAMIC BAYESIAN NETWORK	Sabina Akter, Dr. Osiris Valdez Banda, Dr. Pentti Kujala, Jani Romanoff
		7	UNVEILING ARCHITECTURAL TYPOLOGIES THROUGH THE LENS OF AFFORDANCE	Dr. Pentti Kujala, Jani Romanoff
		8	END-TO-END LEARNING FOR PROGRAM GENERATION: A GRAPH RECOGNITION-BASED APPROACH FOR FLOWCHARTS	Anod H. Alhazmi, Hanaa A. Yamani

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SALON 15	Assist. Prof. Dr. D. Kubiliute	1	ANGIOGRAPHIC EVALUATION OF ETT (TREADMILL) POSITIVE PATIENTS IN A TERTIARY CARE HOSPITAL OF BANGLADESH	Syed Dawood Md. Taimur, Saidur Rahman Khan, Farzana Islam
		2	PROTECTIVE EFFECT OF SAPONIN EXTRACT FROM THE ROOT OF GARCINIA KOLA (BITTER KOLA) AGAINST PARACETAMOL- INDUCED HEPATOTOXICITY IN ALBINO RATS	Yemisi Rufina Alli Smith, Isaac Gbadura Adanlwo
		3	EVALUATION OF SALIVARY NICKEL LEVEL DURING ORTHODONTIC TREATMENT	Mudafara S. Bengleil, Juma M. Orfi, Iman Abdelgader
		4	A STUDY OF CARDIO PULMONARY CHANGES DURING UPPER GASTROINTESTINAL ENDOSCOPY	Sharan Badiger, Prema T. Akkasaligar, P. Amith Kumar
		5	THE ROLE OF IDENTIFICATIONS IN WOMEN PSYCHOPATHOLOGY	Mary Gouva, Elena Dragioti, Evangelia Kotrsotsiou
		6	A REVIEW OF PHARMACOLOGICAL PREVENTION OF PERI- AND POST-PROCEDURAL MYOCARDIAL INJURY AFTER PERCUTANEOUS CORONARY INTERVENTION	Assis. Prof. Dr. Syed Dawood Md. Taimur, Md. Prof. Dr. Hasanur Rahman, Syeda Fahmida Afrin, Farzana Islam
		7	AN EMPIRICAL MODE DECOMPOSITION BASED METHOD FOR ACTION POTENTIAL DETECTION IN NEURAL RAW DATA	Sajjad Farashi, Assoc. Prof. Dr. Mohammadjavad Abolhassani, Mostafa Taghavi Kani
		8	THE ORIGIN, DIFFUSION AND A COMPARISON OF ORDINARY DIFFERENTIAL EQUATIONS NUMERICAL SOLUTIONS USED BY SIR MODEL IN ORDER TO PREDICT SARS-COV-2 IN NORDIC COUNTRIES	Assis. Prof. Dr. Gleda Kutrolli, Assis. Prof. Dr. Maksi Kutrolli, Etjon Meco
		9	TUBERCULOSIS MODELLING USING BIO-PEPA APPROACH	Dalila Hamami, Baghdad Atmani
		10	POSSIBLE ROLE OF POLYAMINE ON TUMOR SPREAD AFTER SURGICAL TRAUMA	prof. Dr. Kuniyasu Soda



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SALON 16	Prof. Dr. Yaritza Sugunathevan	1	NAVIGATING THE LABYRINTH: CHALLENGES AND OBSTACLES IN TRANSFERRING LOW-COST HOUSING IN SOUTH AFRICA	Christiana Gauci-Sciberras Ashwag O. Maghraby, Nida N. Khan,
		2	UNLEASHING THE POWER OF INFORMATION: STRATEGIES FOR OPTIMIZING KNOWLEDGE MANAGEMENT SYSTEMS	Jawaher S. Melibari Lin Cheng, Zijiang Yang
		3	BRIDGING THE GAP: GENDER, RESOURCES, AND ENTREPRENEURIAL SUCCESS	Hosnia N. Brohi, Ghufran A. Ahmed, Hind F. Assouli,
		4	UNVEILING THE ROI OF BIG DATA: A COMPARATIVE ANALYSIS OF FINANCIAL PERFORMANCE FOR USERS AND PROVIDERS	Meaghan Bowman
		5	TAILORED FOR ENGAGEMENT: OPTIMIZING EMAIL MARKETING WITH REINFORCEMENT LEARNING	Dr. Adnan Z. Mkhelif
		6	UNPACKING THE CUSTOMER-SERVER DANCE: A BREAKDOWN OF GROCERY SHOP INTERACTIONS	Ms. Student Siyu Ward PHD. IevtureAnthony Wang,
		7	UNPACKING THE CUSTOMER-SERVER DANCE: A BREAKDOWN OF GROCERY SHOP INTERACTIONS	Ahmed Al Taisan Huda
		8	UNLEASHING THE POWER OF TRADE FINANCE: EXPLORING ETHEREUM-BASED SMART CONTRACT SOLUTIONS	Edith M. Matos, Ángel Esparza-Young,
		9	OPTIMIZING RELIEF OPERATIONS: LOCATION SELECTION AND RESOURCE ESTIMATION FOR RELIEF GOODS ASSEMBLY	Prof. Dr. Yaritza Sugunathevan Kirthana Gonzalez,

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SALON 17	Assis. Prof. Dr. Denis Putman	1	MITIGATING PSYCHOSOCIAL RISKS FOR ENGINEERS AND TECHNICIANS: EFFECTIVE STRATEGIES FOR A HEALTHY WORKPLACE	Mathew Mitchell, Matthew Wakefield,
		2	PRODUCT INVOLVEMENT'S INFLUENCE ON CONSUMER ONLINE REVIEW USAGE: A COMPREHENSIVE ANALYSIS	Lisa McCarthy Christopher Wise,
		3	UNVEILING DIGITAL TRANSFORMATION KEY SUCCESS FACTORS: A SYSTEMATIC LITERATURE REVIEW AND DELPHI APPROACH	Raghavi K. Vasudev
		4	UNDERSTANDING THE GHANAIAN BUDGET: FUNCTIONS, SCOPE, CATEGORIZATION, AND ALIGNMENT WITH THE CHART OF ACCOUNTS	Assis. Prof. Saraswathi Janaswamy,
		5	CROSS-NATIONAL ANALYSIS: HEALTH TOURISM'S INFLUENCE ON CORPORATE PERFORMANCE	Dr. Maria Istvanova
		6	LEVERAGING THE BALANCED SCORECARD FOR EFFECTIVE ACUTE PAIN MANAGEMENT	Falntina Abu Obeid Natheer Ahmad Alata,
		7	GAUGING KNOWLEDGE ASSETS: A REVIEW OF INTELLECTUAL CAPITAL MEASUREMENT IN THE PROPERTY DEVELOPMENT AND INVESTMENT SECTOR	Tonislav Ivanov, Oleksii Nedashkivskiy,
		8	THE BEDROCK OF PUBLIC SERVICE PERFORMANCE: MASTERING THE FUNDAMENTALS OF PERFORMANCE MANAGEMENT	Assis. Prof. Dr. Denis Putman Lecture Vadim Pinskiy, Matthew Babeshko,
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SALON 1	Selim Taşkaya	1	ÇİMENTOLU HARÇLARDA OLİVİN ATIĞI KULLANILMASININ FİZİKSEL VE MEKANİK ÖZELLİKLER ÜZERİNE ETKİLERİ	İnşaat Mühendisi, Elif ZENGİN Prof. Dr.Serkan SUBAŞI Doç. Dr. Ahmet DEMİR
		2	DISTRIBUTION HIERARCHY OF LEGAL PERSON AND REAL PERSON PLOTS AT THE PARCELATION PHASE	Selim Taşkaya
		3	GÖZENEKLİ YAPILARDA DOLGU MALZEMESİ KULLANIMININ MEKANİK ÖZELLİKLERE ETKİSİNİN İNCELENMESİ	Doç.Dr., Erkan BAHÇE Gözde ERENER Dr. Öğr. Üyesi, Ender EMİR Öğr.Gör.Dr., Burak ÖZDEMİR
		4	ADAPTIVE REUSE AND CULTURAL LANDSCAPE IN THE CASE OF SEDDÜLBAHİR CASTLE OPEN AIR MUSEUM	Res. Assist. Dr. Necla Ece ÖNCÜL Res. Assist. Tuğçenur METİN PARLAK
		5	EFFECT OF CALCINED BORON WASTE ADMIXTURE ON HIGH TEMPERATURE PERFORMANCE OF CONCRETE	Research Assistant Emrah TURAN Assoc. Prof. Dr. Meral OLTULU
		6	HAM VERMİKÜLİT İKAMELİ ÇİMENTO HARCININ YÜKSEK SICAKLIK PERFORMANSININ İNCELENMESİ	Dr. Öğr. Üyesi Zinnur ÇELİK Arş. Gör. Emrah TURAN Doç. Dr. Meral OLTULU
		7	KIRSAL YERLEŞMELERDE MİMARİ BOYUTUN İRDELENMESİ: ELEVİT-TROVİT YAYLALARI	Dr.Öğr.Üyesi, Birgül ÇAKIROĞLU Doç.Dr.Reyhan AKAT Dr. İsmail Raci BAYER

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SALON 2	Prof. Dr. Hatun Özlem GÜNEY	1	A NEW SUBCLASS OF BI-UNIVALENT FUNCTIONS CONNECTED WITH THE MILLER-ROSS-TYPE POISSON DISTRIBUTION RELATED TO GREGORY COEFFICIENTS	Prof. Dr. Hatun Özlem GÜNEY
		2	FEKETE-SZEGŐ PROBLEM FOR A SUBCLASS OF ANALYTIC FUNCTIONS ASSOCIATED WITH VAN DER POL NUMBERS	Prof. Dr. Hatun Özlem GÜNEY
		3	BARROW HOLOGRAPHIC DARK ENERGY MODEL FOR FLAT FRW UNIVERSE	Dr., Arzu AKTAŞ Doç. Dr., Sezgin AYGÜN
		4	INVESTIGATION OF THE BARROW HOLOGRAPHIC DARK ENERGY MODEL IN LYRA THEORY	Dr., Arzu AKTAŞ Doç. Dr., Sezgin AYGÜN
		5	APPROXIMATION BY A SEQUENCE OF OPERATORS DEFINED IN A MOBILE SQUARE DOMAIN	PhD student, Gürel BOZMA Assoc. Prof. Dr., Nazmiye GÖNÜL BİLGİN

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SALON 3	Prof. Dr. Fatma KALPAKLI	1	AHMET HAMDİ TANPINAR'IN HUZUR ROMANINDA (ULUSAL) KİMLİK	Prof. Dr. Fatma KALPAKLI
		2	PEYAMİ SAFA'NIN YALNIZIZ ROMANINDA KADIN İMGELERİ	Prof. Dr. Fatma KALPAKLI
		3	ROMANTIC MOVEMENT IN SAMİPAŞAZADE SEZAI'S NOVEL CALLED SERGÜZEŞT	Doç. Dr., Ali ALGÜL
		4	Babanzâde Ahmed Naim's Translation from Arabic Literature titled "From Ibn-i Fârız" Evaluation and Translation	Prof. Dr. Mustafa İsmail Dönmez
		5	ON THE ELEMENTS OF MEVLEVISHIP IN THE DİVAN OF NİGARİ	Doç.Dr., Bilge KARGA GÖLLÜ
		6	The Relationship between Intellectual and Moral Education in al-Ghazali's Philosophy of Education	Dr. Fatih Öztürk
		7	The Relationship between Cultural Diversity and Universal Ethical Values in Citizenship Education	Dr. Fatih Öztürk
		8	METAFİZİK VE HAYVANLARIN HAREKETLERİ ÜZERİNE KAPSAMINDA ARİSTO'NUN EYLEM KURAMI	Doç.Dr.Mehmet Akif DUMAN
		9	ARİSTOTELES'İN DİL FELSEFESİNDE POETİKADAN RETORİĞE GEÇİŞ	Doç.Dr.Mehmet Akif DUMAN

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SALON 4	Doç. Dr. Funda ÇOBAN	1	KARAHANLILAR DÖNEMİ EĞİTİM ÖĞRETİM FAALİYETLERİ	Doç. Dr. Mehmet ŞİMŞİR Saime BAYDUR
		2	ABBASİLER DÖNEMİ BEYTÜ'L-HİKME KURUMU VE BİLİM DÜNYASINA KATKILARI	Doç. Dr. Mehmet ŞİMŞİR Saime BAYDUR
		3	1. DÜNYA SAVAŞI ARİFESİNDE TÜRK BASININDA MUHACİR VE MÜLTECİLERİN DURUMUNA YÖNELİK BİR İÇERİK ANALİZİ	Dr. Öğr. Üyesi, Ali ÇAKIR
		4	BÜTÜNSELLİKLERE KARŞI FRAGMANLAR: POLİTİK İZDÜŞÜMLERİYLE BİR TARİH OKUMASI	Doç. Dr. Funda ÇOBAN
		5	Sözlü Tarih Uygulamalarının Teoride ve Pratikte Farklılığının Saha Deneyimlerinden Notlarla Aktarımı	Yüksek Lisans Öğrencisi, Senanur YARIŞ

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SALON 5	Doç. Dr., Zeynep Y. AVCI	1	WHAT DO GENRATIVE ARTIFICIAL INTELLIGENCE APPLICATIONS PROMISE IN EDUCATION: PERCEPTIONS OF PRE-SERVICE TEACHERS	Doç. Dr., Zeynep Y. AVCI
		2	ÖZEL EĞİTİM KURUMLARINDA OKUL SONRASI FAALİYETLERDEKİ HİZMET KALİTESİ VE MÜŞTERİ MEMNUNİYETİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ	Oğuzhan KÖSELER Doç. Dr. Emin Ahmet KAPLAN
		3	SOSYAL MEDYA BAĞIMLILIĞI İLE KİŞİLİK ÜZERİNE BİR ARAŞTIRMA	Yüksek Lisans Öğrencisi, Raghad Kamal Ibrahim Al-Azzawı Dr. Öğr. Üyesi, Ömer Faruk ACAR 7Si iki sunumunu da yapacak.
		4	TURKISH VALIDATION OF THE HEDONIC AND EUDAIMONIC MOTIVES FOR ACTIVITIES-REVISED SCALE	Mustafa Subasi
		5	TURKISH VALIDATION OF THE MULTIDIMENSIONAL PSYCHOLOGICAL FLEXIBILITY INVENTORY-24	Mustafa Subasi
		6	LİSE ÖĞRENCİLERİNİN NOMOFOBİ DÜZEYLERİ İLE BİLİŞSEL ÇARPITMA DÜZEYLERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ	Uzman Psikolojik Danışman Büşra ÇAKIR Doç. Dr. Yaşar BARUT

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SALON 6	Dr. Maia Seturi	1	STAGNANT GDP PREDICTION: A BINARY CHOICE MODEL FOR 40 GLOBAL ECONOMIES	Dr. Laila Yasir Al-Harthy Ali H. Al-Badi
		2	ENSURING SOLID STATE DRIVE RELIABILITY: FROM PREDICTION TO CONTROL	Nazira B. Boldurukova
		3	BUILDING THE FUTURE: STRATEGIC INFRASTRUCTURE INVESTMENT FOR A THRIVING U.S. ECONOMY	Narong Kulnides
		4	LEADING THE CHARGE: EFFECTIVE LEADERSHIP STRATEGIES FOR THE ENGINEERING, TECHNOLOGY, AND CONSTRUCTION INDUSTRY	Dr. Chalernpol Tapsai
		5	UNPACKING THE TOOLBOX: A SYSTEMATIC EXAMINATION OF METHODS FOR FOSTERING SOCIAL INNOVATION	Prof. Dr. Saowapa Phaitayawat
		6	INVESTIGATING THE PROFITABILITY OF COSMETICS PRODUCTS: A BOOTSTRAP EDGEWORTH APPROXIMATION APPROACH	Aber Salem Aboalgasm, Rupert Ward
		7	UNVEILING THE IMPACT OF COVID-19 ON USER PERCEPTIONS OF MHEALTH SERVICE QUALITY	Marut Pichetvit
		8	NAVIGATING THE JOURNEY: EXPLORING CRUISE PASSENGERS' ON-BOARD EXPERIENCES	Dr. Assis . Prof. Tereza Dolečková
		9	UNLOCKING JOB GROWTH THROUGH CIRCULAR STRATEGIES: A CASE STUDY OF BRAZIL'S RECYCLING POTENTIAL	Dr. Maia Seturi



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SALON 7	Dr. Elham Zamiri	1	EXPLORING EMOTIONAL RESPONSES ELICITED BY IMAGES IN CHILDREN'S LITERATURE	Arafa A. Alholaisi, Jamal H. Madani, M. A. Alvi
		2	ANALYZING ONLINE SPEECH ANXIETY AND EVALUATION DISPARITIES AMONG STUDENTS	Assis. Prof. Dr. Takeshi Mano
		3	EXAMINING THE INFLUENCE OF INTRODUCTORY TECHNOLOGY COURSES ON STEM PATHWAY CHOICES	Tadashi Watanabe, Jinya Katsuyama, Akihiro Takeda
		4	EXPLORING THE MINDS OF ETHAN SHAFER, TIMOTHY GRAZIANO, AND JAY FISHER	Dr. Elham Zamiri
		5	EXPLORING GENDER-BASED JAPANESE LANGUAGE LEARNING STRATEGIES AMONG LEARNERS IN NORTH SULAWESI, INDONESIA	Djemai Bara Mahboub,, Mohamed Fauzi
		6	EXPLORING THE INFLUENCE OF AUGMENTED AND VIRTUAL REALITY ON EDUCATIONAL OUTCOMES IN A MULTIVARIABLE CALCULUS SETTING"	Djamila Bennaceur-Doumaz
		7	ENHANCING COMPETENCIES: THE DYNAMIC LEARNING APPROACH AT A LEADING FRENCH COMPUTER SCIENCE INSTITUTE	Kazunori Nomura, Hiromichi Nakahar Masami Ogi
		8	EXPLORING KNOWLEDGE ACQUISITION IN CLIENT ORGANIZATIONS: A CASE STUDY OF STUDENT ENGAGEMENT AS PRODUCERS"	Sou Shibata Atsuhiko Watanabe,

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SALON 8	Prof. Dr. Phusit Hashim	1	FOSTERING COLLABORATIVE CONVERSATIONS IN ONLINE LEARNING: ESTABLISHING AND NURTURING COMMUNITIES OF PRACTICE	lectureNatalia Polkanova, Dr. Sergey Kazakov
		2	BUILDING EDUCATIONAL FOUNDATIONS: CONSTRUCTING INFORMATION IN HIGHER EDUCATION TEACHING	Dr. Nada Armstrong
		3	REVOLUTIONIZING LEARNING OUTCOMES: ADVANCED MODELING TECHNIQUES FOR EMPOWERING STUDENTS IN EDUCATION	Phd. Karen Azhar
		4	NAVIGATING THE ACADEMIC LANDSCAPE: BALANCING 'THE CAN DO' AND 'THE HAVE TO DO' IN BATNA UNIVERSITY, ALGERIA	Sheng-Min Na Cheng
		5	INCORPORATING COOPERATIVE EDUCATION: A STRATEGIC FRAMEWORK FOR ENGINEERING CURRICULUM ENHANCEMENT	Sivamurugan Pandian
		6	ENHANCING FINANCIAL LITERACY AMONG YOUNG WOMEN: INSIGHTS FROM A CASE STUDY IN AUSTRALIAN SCHOOLS	Premvadee Nakornpanom
		7	EXPLORING E-CONTENT PRODUCTION ALGORITHMS FOR SCREEN-CAPTURED VIDEOS: AN INTRODUCTORY GUIDE	Prof. Dr. Phusit Hashim
		8	UNVEILING PROBLEM-SOLVING PROWESS: THE INNATE FLOW OF THE MIND IN CREATIVE SOLUTIONS	Sarideh Alizadeh Mohd Nasir

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SALON 9	As Prof. Levan Alonso López	1	EXPLORING THE EDUCATIONAL AND SEMIOTIC POTENTIAL OF GEOGEBRA IN FOSTERING MATHEMATICAL DIALOGUE	Lovorka Galetic, Zeljko Ruiz,
		2	AN INTEGRATED 1088 ENSEMBLE METHODOLOGY FOR ANTICIPATING STUDENTS' ACADEMIC ACHIEVEMENT	Sofia Aboulaich Rachid Ellaia, Rajae Ayouché
		3	ENGAGEMENT OF STUDENTS IN GOVERNANCE WITHIN MAINLAND CHINA'S HIGHER EDUCATION SYSTEM	Osamah A. Alsayegh
		4	ENHANCING CYBERSECURITY AWARENESS WITHIN THE APPLIED SCIENCES STUDENT COMMUNITY	Erika Vukelic Nestor Ortiz
		5	ENHANCING LANGUAGE LEARNING THROUGH A COLLABORATIVE 3D MULTI-USER VIRTUAL ENVIRONMENT	Dr. Bhim Sabauri
		6	PERSISTENT INEQUALITY: EXAMINING GENDER DISCRIMINATION IN CROATIAN EDUCATION	Assis. Prof. Dr. Wardoyo Humairoh,
		7	HARNESSING DATA FOR SUCCESS: PREDICTING STUDENT PERFORMANCE IN EDUCATION	Prof. Levan Alonso López
		8	SCRUM IN THE SMART CLASSROOM: A CASE STUDY FOR ENHANCED ONLINE LEARNING AND ENGAGEMENT	Mikel Singh
		9	Revolutionizing Chemistry Teaching: The Impact of Online Tests	Lovorka Galetic, Zeljko Vukelic

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SALON 10	Wanda Luen-	1	BOOSTING CHEMISTRY EDUCATION: ONLINE TESTING AS A POWERFUL TOOL	Mandakini Thakur, Sheena Pall
		2	REVOLUTIONIZING HIGHER EDUCATION: AI'S TRANSFORMATION OF LEARNING IN THE 21ST CENTURY	Wanda Luen-Wun Siu, Xiaowen Zhang
		3	FOSTERING ACTIVE ENGAGEMENT: ENHANCING EXPERIENTIAL LEARNING IN A SMART FLIPPED CLASSROOM - A CASE STUDY	Wun Siu, Xiaowen Zhang
		4	UNLOCKING MATHEMATICAL MINDS: STRATEGIES FOR TEACHING PRESCHOOLERS WITH AUTISM	Wanda Luen-
		5	NAVIGATING UNCERTAINTY: EXPERIENCES OF FOREIGN STUDENTS IN HUNGARY DURING THE COVID-19 PANDEMIC	Bitra Mashayekhi, Zeynab Lotfi Aghel
		6	REVOLUTIONIZING HIGHER EDUCATION IN SAUDI ARABIA: A COMPREHENSIVE E-COACHING APPROACH	Dr. Haya Y Alobaid
		7	A FRAMEWORK FOR INTELLIGENT LEARNING ENVIRONMENTS IN MUSIC EDUCATION: AN ONTOLOGICAL APPROACH	Ghanima Al-Sharrah, Haitham M. Lababidi, Yusuf I. Ali
		8	BUILDING DEEP UNDERSTANDING: INTEGRATING EXPERIENTIAL LEARNING INTO A SMART FLIPPED CLASSROOM MODEL - A CASE STUDY	Assis. Prof. Venugopal Kummamuru

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SALON 11	Assoc. Prof . Dr. Ian Mills,	1	THE IMPACT OF TRANSLATION ON ARABIC AND ISLAMIC CIVILIZATION: A CATALYST FOR THE GOLDEN AGE (661-1258)	Konstantinos Sofianos, Michail Stefanidakis Ye Wei,
		2	ECHOES OF ANCESTRAL FLAME: TRACING THE INDO-EUROPEAN, OLD IRANIAN, AND LUR FIRE TRADITIONS	Smail Hadj Mahammed
		3	AUGMENTING THE PAST: AN AR-POWERED VIRTUAL HERITAGE APPLICATION DESIGN	Alex Bell Prof. Sitalakshmi Venkatraman,
		4	DECIPHERING GRANDE KABYLIA: A DESCRIPTIVE ANALYSIS OF LIBYAN STELES IN ALGERIA	Ye Wei, Fiona Wahr
		5	COLONIAL PUNJAB TRANSFORMED: A LOOK AT THE IMPACT OF TRANSPORTATION AND COMMUNICATION TECHNOLOGIES	Fahri Benli, Fiona Wahr Anita Kéri Josefina Bengoechea,
		6	CHINA'S HEALTH SILK ROAD: NAVIGATING SOUTHEAST ASIA AND EUROPE THROUGH COVID-19	Dr. Sitalakshmi Venkatraman,
		7	THE POWER OF INDIGENOUS PEOPLE IN MINING PROJECT DECISIONS: A PILBARA CASE STUDY	Behzad Moeini Sam, Dr. Sara Mohammadi Avandi,
		8	LEVERAGING TWITTER FOR SOCIAL CHANGE: FOOD BANKS IN SAUDI ARABIA COMBAT FOOD WASTE THROUGH STRATEGIC COMMUNICATION	Afroz Kianpor Stephen Barnes Samia Ait Ali Yahia
		9	EXAMINING FOREIGN INFLUENCES IN USUL FIQH METHODOLOGIES: A CRITICAL ANALYSIS OF ORIENTALIST SCHOLARSHIP	Assoc. Prof . Dr. Ian Mills, Dr. Frances Cleary
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SALON 12	Assoc. Prof. Alisha Fisher	1	OPTIMIZING INFLUENCE IN EVOLVING SOCIAL NETWORKS: A DYNAMIC PERSPECTIVE	Dr. Gkolfo I. Smani, Dr. Vasileios Megalooikonou
		2	NAVIGATING DISSOCIATION DURING MASTURBATION: MINDFULNESS STRATEGIES FOR HEALING AND RECONNECTION AFTER SEXUAL TRAUMA	Assoc. Prof. Alisha Fisher
		3	LOST IN THE SHUFFLING PLAY: ABSURDITY, IDENTITY, AND THE TRAGICOMIC LANDSCAPE OF STOPPARD'S ROSENCRANTZ AND GULDENSTERN ARE DEAD	Dr. Azza Taha Zaki
		4	HOME AND IDENTITY: THE DWELLING AS A SHAPER OF CONTEMPORARY DONG WOMEN'S SELFHOOD	Sze Wai Veera Fung, Peter W. Ferretto
		5	UNVEILING THE SYMBOLISM: FEMALE CIRCUMCISION AND SOLOMON'S TEMPLE IN ISLAMIC HADITHS	B. O. Diyaolu
		6	EXPLORING THE NEXUS BETWEEN ONLINE SPORTS EVENTS AND BETTING BEHAVIOR AMONG NIGERIAN YOUTH	K. N. Penna, E. J. Hoffman, T. R. Carter
		7	SILENCED NARRATIVES: SECOND CLASS CITIZEN AND THE STRUGGLE FOR BLACK WOMEN'S AUTHORSHIP	Sherly Ferro Lensun Barry Ardley, Abi Hunt,
		8	SEX TRAFFICKING REPORTING IN ONTARIO VS. NOVA SCOTIA: A CANADIAN ONLINE NEWS ANALYSIS	Lecture Nick Taylor Dr. Yang Meng,
		9	EMPOWERING INDIGENOUS COMMUNITIES: CULTURALLY-DRIVEN SOLUTIONS FOR SHARED ECONOMIC PROSPERITY	James L. Patnao Essam Almuhsin, Ben Soh, Alice Li, Azmat Ullah

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SALON 13	Prof. DR. Haotian Wu	1	DECODING THE LANGUAGE OF FAITH: SYMBOLISM IN MODERN UKRAINIAN MONUMENTAL CHURCH PAINTING	Khlystun Yuliia Igorivna
		2	UNDERSTANDING THE ROOTS OF FAITH: EXPLORING WHOOEAIMS, THE INDIGENOUS RELIGION OF THE JARAWA PEOPLE IN THE ANDAMANS	Prof. DR. Haotian Wu
		3	COMBATING TWO MAJOR THREATS IN KOSOVO: DOMESTIC VIOLENCE AGAINST CHILDREN AND HUMAN TRAFFICKING	Dr. Guelfo Carbone
		4	HEIDEGGER'S EARLY HERMENEUTICAL PHENOMENOLOGY AND THE WORLD-EVENT	Areti Tziboula, Anna-Maria Rentzeperi-Tsonou
		5	THEMATIC ANALYSIS OF LIBRETTI IN ROSSINI'S OPERAS AND THEIR INFLUENCE ON THE COMPOSER'S WORK	Ashwaq Alsulami, Jianhua Shao
		6	THE LASTING IMPACT: CHINESE ADULTS REFLECT ON SIBLING LOSS AND COPING STRATEGIES IN CHILDHOOD, WITH IMPLICATIONS FOR THERAPEUTIC INTERVENTIONS.	Hanaa Bajilan
		7	BEYOND SILENCE: EXPLORING THE INNER WORLDS AND PROTEST OF INDIAN WOMEN IN THE THOUSAND FACES OF NIGHT	Rony Reátegui, Cesar Chácará,
		8	DIGITAL PRESERVATION OF CUSCO'S VIRGIN OF LORETO CHAPEL: A 3D MODELING SHOWCASE	Benjamin Castañeda, Rafael Aguilar
		9	BRIDGING COMMUNITIES WITH NATIONAL PRIDE: THE PETRONAS MURAL PROJECT.	M. Suhaimi Tohid, M. Fazli Othman, M. Rizal Salleh
		10	BEYOND BINARY: A MULTI-METHOD EXPLORATION OF TRANS INCLUSION AND ITS IMPACT ON ORGANIZATIONAL STRUCTURES AND POLICIES IN THE FUTURE OF WORK	W. Samiati Andriana

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SALON 14	Assoc. Prof. Dr. Kazunori Nomura	1	EXTERNAL DEBT AND FISCAL POLICY: TWIN DRIVERS OF ECONOMIC GROWTH IN DEVELOPING COUNTRIES	Zohreh Bang Tavakoli, Shuktika Chatterjee
		2	REINVENTING TRADITION: HOW "GUOCHAO" IS SHAPING CHINESE FASHION THROUGH ANGEL CHEN'S DESIGNS	Dr. Zhe Ginnie Wang
		3	EMPOWERING STUDENTS WITH DISABILITIES IN INDIA: THE CRUCIAL ROLE OF SEX EDUCATION	Dr. Sona Lorencova
		4	PARENTAL PERCEPTIONS OF COMPULSORY PRE-SCHOOL EDUCATION IN THE CZECH REPUBLIC	Prof. Beata Hornickova,
		5	SUBSTANCE USE AND ADDICTION AMONG YOUNG IMMIGRANTS IN CANADA	Masaumi Watanabe, Sou Nakahara,
		6	EDUCATION AND INCOME AS MEDIATORS: HOW POLITICAL IDEOLOGY SHAPES ATTITUDES TOWARDS IMMIGRATION	Zohreh Bang Tavakoli, Shuktika Chatterjee
		7	BEYOND UTILITY: HOW CHATBOTS SHAPE USER EXPERIENCE AND BRAND IMAGE	Hiromichi Ogi, Atsuhiko Shibata, Kazunori Nomura
		8	LEADING TEAMS TO TRIUMPH: INSPIRING STRATEGIES FOR OVERCOMING PROJECT OBSTACLES AND ACHIEVING GOALS	Sou Nakahara, Atsuhiko Shibata,
		9	EXAMINING SOCIAL INFLUENCES ON AMERICAN MASK-WEARING DURING THE PANDEMIC	Hiromichi Ogi
		10	SHELTER DATA : A CASE STUDY OF HOMELESSNESS AND ENTRY IN NEW YORK CITY	Assoc. Prof. Dr. Kazunori Nomura



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SALON 1	Doç.Dr. Aysel GÜVEN	1	HEALTH EVALUATION AND ANTIOXIDATIVE EFFECTS OF PROBIOTICS	Doç.Dr. Aysel GÜVEN
		2	THE IMPORTANCE OF KEFIR IN THE GASTROINTESTINAL SYSTEM	Doç.Dr. Aysel GÜVEN
		3	NATURAL PRODUCTS AND ACTIVITY RELATIONSHIP – GYPSOGENIN FROM GYPSOPHILA ARROSTII ROOTS	Assoc. Prof. Dr. Safiye EMİRDAĞ
		4	INVESTIGATION OF THE DISTRIBUTION OF MICROORGANISMS CAUSING URINARY TRACT INFECTIONS	Graduate Student Alaa JAWDAT NASIH NASIH Asst. Prof. Dr. Özgür ÇELEBİ Prof. Dr. Mesut TAŞKIN
		5	CAN PROPOLIS BE AN ALTERNATIVE TO ANTIBIOTICS?	Graduate Student Ruba JEBRİL Prof. Dr. Ahmet ADIGÜZEL
		6	MICROBIAL DEGRADATION of TRICLOCARBAN BY Penicillium sp. strain ZA10	Ziya ALJOUJA Hakan ÖZKAN
		7	TRANSITION TO SUSTAINABLE SYSTEMS IN URBAN WATER MANAGEMENT AND WATER SENSITIVE CITY	Hatice AKSOY Doç. Dr. Gül ŞİMŞEK
		8	DETERMINATION OF LACTOCOCCUS FORMOSENSIS PREDICTED VIRULENCE FACTORS	Salih KUMRU

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SALON 2	Prof. Dr. Süleyman Doğan	1	ÇEVRE BİLİNCİ KAPSAMINDA SÜRDÜRÜLEBİLİR KALKINMA HEDEFLERİNİ ETKİLEYEN FAKTÖRLERİN DÜZEYLERİNİN BELİRLENMESİNE YÖNELİK BİR ARAŞTIRMA	Dr. Öğr. Üyesi Ahmet Esad YURTSEVER
		2	HAVAYOLU FİRMALARININ DEĞERLENDİRMESİNDE HİZMET KALİTESİNİ ETKİLEYEN FAKTÖRLERİN ROLÜ	Dr. Öğretim Üyesi Onur TÜRKER
		3	CONVEYANCE EVIDENCES OF INTERCESSION ACCORDING TO MÂTURİDİ AND ZEMAHŞER	Yüksek Lisans Öğrencisi, Emine ÖZÇAKAL
		4	THE INFLUENCE OF EMOTIONAL INTELLIGENCE ON STUDENTS AS A MECHANISM OF METARESOURCE	Kurmanova Anar Ibragimovna Gelişli Yücel Baizhumanova Bibianar Shaimerdenovna
		5	PEDAGOGICAL PREVENTION OF SOCIAL OSTRACISM IN STUDENTS	Saikhymuratova I.B. Assylbekova M. Kurmanova A.I.
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SALON 1	Prof. Dr. Ramazan ARMAĞAN	1	PROTECTION AGAINST DISCRIMINATION IN LABOUR RELATIONS IN BULGARIA – DEDICATED TO 20 TH ANNIVERSARY OF THE BULGARIAN PROTECTION AGAINST DISCRIMINATION ACT	Assoc. prof. D.Sc. Ivaylo STAYKOV
		2	MECELLE'DE TAHKİM	Av.Dr.M.Lamih ÇELİK
		3	İSVİÇRE VE ALMAN HUKUKUYLA KARŞILAŞTIRMALI OLARAK TÜRK HUKUKUNDA ORTAK VASİYETNAME	Dr. Öğr. Üyesi Hüseyin TOKAT
		4	ARABULUCULUK-TAHKİM (MED-ARB): TARAFSIZ ÜÇÜNCÜ KİŞİNİN ŞAPKA DEĞİŞTİRMESİ	Elif KARAMAN
		5	DETECTION OF MATERIAL FACTS IN TAX EVASION TRIALS WITHIN THE FRAMEWORK OF THE SUPREME COURT DECISIONS	Res. Asst. Alper TAŞAR Res. Asst. Didem Hande KILIÇ
		6	BANKA TEMİNAT MEKTUPLARININ HUKUKİ NİTELİĞİ ve ÇEŞİTLERİ	Dr. Öğretim Üyesi Fatma HIZIR ASRAV
		7	GARANTİ MARAKALARINDAN DOĞAN SORUMLULUĞUN HUKUKİ DAYANAĞI	Dr. Öğretim Üyesi Fatma HIZIR ASRAV
		8	TÜRK VERGİ YARGISI ANLAYIŞINDA DEĞİŞİM-DÖNÜŞÜM: 1980 SONRASI DÖNEM GELİŞMELER	Prof. Dr. Ramazan ARMAĞAN Dr. Öğretim Üyesi Ayşe ARMAĞAN
		9	CUMHURİYET ÖNCESİ VE SONRASI TÜRK VERGİ YARGISI ANLAYIŞINDA DEĞİŞİM- DÖNÜŞÜM: 1980 ÖNCESİ DÖNEM	Prof. Dr. Ramazan ARMAĞAN Dr. Öğretim Üyesi Ayşe ARMAĞAN
		10	TÜRKİYE'DE HAKİMLER VE SAVCILAR KURULU'NUN GELİŞİMİ	Sevinç OCAKTÜRK

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SALON 2	Prof. Dr. Elmas ERDOĞAN	1	USE OF MEDICINAL AND AROMATIC PLANTS IN HEALTH TOURISM	Dr. Öğr. Üyesi, Seher GÜLENC
		2	SAĞLIK TURİZMİ DESTİNASYON TERCİHİNİ ETKİLEYEN FAKTÖRLER, SAĞLIK SEYAHATİNİN ALGILANAN DEĞERİ, DESTİNASYON İMAJI VE TEKRAR ZİYARET NİYETİ İLİŞKİSİ	Dr. Öğr. Üyesi FUAT YALMAN Prof. Dr., Yalçın KARAGÖZ
		3	SAĞLIK HİZMET KALİTESİNİN HASTALARIN DAVRANIŞSAL NİYETLERİ ÜZERİNDEKİ ETKİSİ: HASTA MEMNUNİYETİ VE HASTA GÜVENİNİN ARACI ROLÜ	Prof. Dr., Yalçın KARAGÖZ Dr. Öğr. Üyesi FUAT YALMAN
		4	TURİZM ve MÜZE TEMALI ÇALIŞMALARIN GÖRSEL HARİTALAMA TEKNİĞİ İLE ANALİZİ	Dr. Öğr. Üyesi, Mahmut BALTACI Öğr. Gör. Dr. Sercan BENLİ
		5	TURİZM SEKTÖRÜNDE ÇALIŞAN KADINLARIN YAŞAM TATMİNİ ALGILARININ İNCELENMESİ	Muharrem AKSU Serpil KOCAMAN
		6	MÜZECİLİK VE MÜZELERDE EĞİTİM İŞLEVİ	Yüksek Lisans Öğrencisi, Sercan GÜN
		7	THEMATIC DESIGN AND ADVENTURE PARKS	Öğr. Gör. Dr. Evren TANDOĞAN Prof. Dr. Elmas ERDOĞAN
		8	ANTHROPOCENTRIC DESIGN AND ENVIRONMENTAL ETHICS	Prof. Dr. Elmas ERDOĞAN Öğr. Gör. Dr. Evren TANDOĞAN

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SALON 3	Dr. Öğr. Üyesi İbrahim YIKILMAZ	1	A METAPHORICAL RESEARCH ON THE CAREER EXPECTATIONS OF AFYONKOCATEPE UNIVERSITY CINEMA AND TELEVISION STUDENTS	Res. Asst. Tolga GÜROCAK, Ph.D. Graduate Student, Eda Demet GÜROCAK
		2	EFFECTS OF UNIONS ON WOMEN EMPLOYEES IN WORK LIFE BALANCE	Yüksek Lisans Öğrencisi, Zeliha Aleyna ASLANTEKİN Doçent Doktor, Mehtap DEMİR
		3	ENDÜSTRİ 4.0 TEKNOLOJİ BİLEŞENLERİNİN İŞLETMELERİN İNOVASYON PERFORMANSI ÜZERİNDEKİ ETKİSİ	Dr. Öğrencisi, Sacit ACAR
		4	AKADEMİSYENLERİN ÖRGÜTSEL BAĞLILIK DÜZEYLERİNİN MESLEKİ BAĞLILIKLARINA ETKİSİ	Meral MUHACİR Doç.Dr.Murşit IŞIK
		5	THE EFFECT OF ORGANIZATIONAL JUSTICE PERCEPTIONS OF HEALTHCARE PROFESSIONALS ON ORGANIZATIONAL COMMITMENT	Hayrünisa ÇELEBİ Prof.Dr. Aykut BEDÜK
		6	THE ROLE AND IMPORTANCE OF PLANNED CHANGE IN ORGANIZATIONAL DEVELOPMENT	Prof. Dr. Abdullah KARAMAN Arş. Gör. Leyla ERAT OCAK
		7	MANAGEMENT INFORMATION SYSTEM AND INFORMATION SHARING	Prof. Dr. Ali ERBAŞI Arş. Gör. Leyla ERAT OCAK
		8	DIGITAL ENTREPRENEURSHIP IN THE AGE OF DIGITALIZATION	Dr. Öğr. Üyesi, Safa ACAR
		9	POWER POISONING IN LEADERSHIP: HUBRIS SYNDROME	Dr. Öğr. Üyesi, Safa ACAR
		10	QUIET AMBITION: A CONCEPTUAL INVESTIGATION	Dr. Öğr. Üyesi İbrahim YIKILMAZ

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SALON 4	Dr. Öğr. Üyesi, Zehra ERTUĞRUL YAŞAR	1	OKUL ÖNCESİ ÇOCUKLARDA ZİHİNSEL KELİME KULLANIMININ İNCELENMESİ	Dr. Öğr. Üyesi, Zehra ERTUĞRUL YAŞAR
		2	TOPLUMDAKİ ARKEOLOJİ ALGISININ DEĞİŞTİRİLMESİ ÜZERİNE 7-11 YAŞ ARALIĞINDAKİ ÇOCUKLARA ARKEOLOJİ EĞİTİMİ ÖNERİSİ	Yüksek Lisans Öğrencisi, Dilan KAYA
		3	OKUL DIŞI ÖĞRENME ORTAMLARINDA FEN ÖĞRETİMİNİN 5. SINIF ÖĞRENCİLERİNİN ÇEVRE FARKINDALIKLARI VE ÇEVREYE YÖNELİK TUTUMLARINA ETKİSİ	Öğretmen, Özlem DÜNDAR Prof.Dr., Şafak ULUÇINAR SAĞIR
		4	ÇOCUKLARIN BİLİŞSEL GELİŞİMİNE YÖNELİK ÇEŞİTLİ KAVRAMLARIN İNCELENMESİ	Dr. Öğretim Üyesi, Adem ARSLAN
		5	HAYAT BİLGİSİ DERSİ ÖĞRETİM PROGRAMINDA EVİMİZDE HAYAT ÜNİTESİNİN İNCELENMESİ	Dr. Öğretim Üyesi, Adem ARSLAN
		6	İLKOKUL 4. SINIF DİN KÜLTÜRÜ VE AHLAK BİLGİSİ DERS KİTAPINDA YER ALAN GÜZEL AHLAK ÜNİTESİNİN DEĞERLER AÇISINDAN İNCELENMESİ	Yüksek Lisans Öğrencisi, Seyyare KARADAĞ
		7	ÖĞRENCİLERİN PISA TÜRÜNDEKİ PROBLEMLERİ ÇÖZME SÜRECİNDE MATEMATİK OKURYAZARLIĞI BECERİLERİNİ UYGULAMADA KARŞILAŞTIKLARI ZORLUKLAR	Edanur Günaydın Doç. Dr. Menekşe Seden Tapan Broutin Prof. Dr. Dilek Sezgin Memnun
		8	OKULLARDA PSİKOSOSYAL HİZMETLERDE YENİ BİR BOYUT: OKUL SOSYAL HİZMETİ	Dr. ZÜLAL ŞAHİN Prof. Dr. KAMİL ALPTEKİN

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SALON 5	Doktora Öğrencisi. Mustafa CEMİLOĞLU	1	İSLAM HUKUNDA SÜKÛTÜN RIZAYA DELALETİ (ÖZET)	Yüksek Lisans Öğrencisi, Recep OTKAN
		2	İSLAM HUKUKUNDA HÂKİMLİK MESLEK ETİĞİ VE POZİTİF TÜRK HUKUKUYLA MUKAYESESİ	Yüksek Lisans Öğrencisi, Fatma PALANCI
		3	SAMİ DİLLERİNDEKİ ORTAK KELİMELER İBRANİCE ve ARAPÇA ÖRNEĞİ	Doktora Öğrencisi. Mustafa CEMİLOĞLU
		4	AI-KHALİL İBN AHMAD AL-FARÂHİDÎ'NİN ARAPÇA GRAMER TERMİNOLOJİSİNDEKİ ÖNCÜLÜĞÜ	Doktora Öğrencisi. Mustafa CEMİLOĞLU
		5	MUHAMMED B. AHMED EL-KURTUBÎ'NİN EL-CÂMÎ'Lİ- AHKÂMÎ'İ- KUR'ÂN ADLI TEFSİRİNDE TİCARET AHLAKI	Muhammed Sertaç AKKAYA
		6	MUSÂ (A.S.) VE SABİR	Kübra AKBAŞ
		7	“İLAHİ KELAMIN MÜSTESNA GRAMERİ” ADLI ESERE YÖNELİK BİR İNCELEME	Beyza Hilal ÖZTÜRK
		8	ÂLEM'E FELSEFİ BİR BAKIŞ	Nur Aybala ÖZ

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SALON 6	Prof. Dr. Ebru BARDAŞ ÖZKAN	1	DEPREM STRESİYLE BAŞETME STRATEJİLERİ İLE ANKSİYETE, STRES VE DEPRESYON İLİŞKİSİ: PSİKOLOJİK SAĞLAMLIĞIN ARACI ROLÜ	Dr. Öğr. Üyesi, Abdulkadir İNAK Dr. Öğr. Üyesi, Yahya AKTU
		2	MAWLANA'S METAPHOR OF THE 'DONKEY STUCK IN THE MUD' IN THE JOURNEY OF OVERCOMING WORLDLY DIFFICULTIES AND ENLIGHTENMENT OF THE SOUL	Prof. Dr. Ebru BARDAŞ ÖZKAN
		3	TRACKING THE DEPTHS OF HUMAN CHARACTER AND MORAL VALUES IN MASNAVI: THE ROLES OF THE LION, FOX, AND DONKEY METAPHORS	Prof. Dr. Ebru BARDAŞ ÖZKAN
		4	"BENİ ÇOK SEV" FİLMİNİN HALEY'İN STRATEJİK AİLE TERAPİSİ KURAMINA GÖRE ANALİZİ	Murat ORHAN Doç .Dr. Handan GÜLER Mustafa EROL Ömer AKKALAYCI
		5	A SYSTEMATIC REVIEW STUDY ON PSYCHOLOGICAL DISORDERS IN CHILDREN EXPOSED TO DOMESTIC VIOLENCE	Seda KAYA
		6	BOŞANMA OLGUSU VE BOŞANMANIN ÇOCUĞA ETKİLERİ	Öğr. Gör. Metin KADİM
		7	ÖLÜM OLGUSU VE EBEVEYN ÖLÜMÜNÜN ÇOCUĞA ETKİLERİ	Öğr. Gör. Metin KADİM
		8	İFADE ÖZGÜRLÜĞÜ ÇERÇEVESİNDE NEFRET SÖYLEMİ	Dr. Arş. Gör., Funda Kaya Bozok



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SALON 7	Prof. Dr. HÜLYA ÇİÇEK	1	DOES RAMADAN FASTING HELPS IN CANCER THERAPY: AN UPDATE	Assist. Prof. K.R.Padma Reader K.R.Don
		2	Palyatif Bakımın Odak Noktası: Semptomların Belirlenmesi	DR.Lütfiye Nur UZUN DR. Hümevra HANÇER TOK
		3	Voice Disorders Seen in Neuropsychiatric Diseases: A Summary Review	Assistant Prof. Dr. Tuğba KAYA
		4	PHARMACOLOGICAL METHODS FOR THE INDUCTION OF LABOR	Dr. Arş. Gör. Tuba Enise BENLİ Dr. Öğr. Üyesi Zeynep BAL
		5	NONPHARMACOLOGICAL METHODS FOR THE INDUCTION OF LABOR	Dr. Arş. Gör. Tuba Enise BENLİ Dr. Öğr. Üyesi Zeynep BAL
		6	THERAPEUTIC STRATEGIES FOR GLIOBLASTOMA	Yüksek Lisans Öğrencisi, Şeymanur SANCAKTUTAN Doç. Dr. Yağmur ÜNVER
		7	GENETICALLY ENGINEERED PHOTSENSITIZERS FOR PHOTODYNAMIC THERAPY	Yüksek Lisans Öğrencisi, Bahtinur İSPAHI Doç. Dr. Yağmur ÜNVER
			BİLGİSAYAR DESTEKLİ İLAÇ TASARIMI YÖNTEMLERİ	Arş. Gör. Dr. Şeyma YAŞAR Arş. Gör. Fatma Hilal YAĞIN
			Metabolomikte Biyobelirteç Keşfi: Hastalıkların Erken Tanısında Yeni Yaklaşımlar	Arş. Gör. Fatma Hilal YAĞIN Arş. Gör. Dr. Şeyma YAŞAR
	8	ALLİSİN: TIBBİ VE BİYOKİMYASAL ÖZELLİKLERİ	Prof. Dr. HÜLYA ÇİÇEK Hanım Seval KAYA	

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SALON 8	Prof. Dr. Nail Altunay	1	CONTROL OF PHYSICAL PROPERTIES OF ZNO FILMS BY VARYING THE CONCENTRATION OF TRISODIUM CITRATE.	Assoc. Prof. Dr. RAŞİT AYDIN Prof. Dr. BÜNYAMİN ŞAHİN
		2	DISPERSIVE LIQUID PHASE EXTRACTION METHOD FOR THE DETERMINATION OF HISTAMINE FROM PROCESSED MEAT PRODUCTS	Prof. Dr. Nail Altunay Prof. Dr. Adil Elik
		3	INVESTIGATION OF DEEP EUTECTIC SOLVENTS FOR THE DETERMINATION OF SULFADIAZINE RESIDUES IN HONEY SAMPLES	Master, Hatice Taşpınar Prof. Dr. Nail Altunay Prof. Dr. Adil Elik
		4	SYNTHESIS OF CARBAZOL SUBSTITUTED PYRIMIDINYL CARBAMOYL BENZOIC ACID DERİVATİVES	Fatih KIRBAYIR Özcan GÜLEÇ Prof. Dr. Mustafa ARSLAN
		5	İÇME KULLANMA SUYU ÖRNEKLEME	Dr. Öğr. Üyesi, Melek GÖKMEN KARAKAYA
		6	DİSİYANODİBENZO[F,H]KİNOKSALİN TABANLI BİLEŞİKLERİN TADF ÖZELLİKLERİNİN TEORİK OLARAK İNCELENMESİ	Doç.Dr. Zeynep Şilan TURHAN Öğr. Gör. Dr. Erhan ÖZTÜRK Dr. Öğr. Üyesi, Aybek YİĞİT Dr. Öğr. Üyesi, Necdet KARAKOYUN
		7	INVESTIGATION OF THE TOTAL PHENOLIC SUBSTANCE AND ANTIOXIDANT CAPACITY IN FIRETHORN (PYRACANTHA COCCINEA) FRUIT GROWN IN AKHİSAR REGION	Asst. Prof. Dr. Fadim YEMİŞ Arzu İkra GÖK Ayşe Nur ÇIRAK

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SALON 9	Mella Ismelina Farma Rahayu	1	PROMOTING GENDER EQUALITY WITHIN ISLAMIC TRADITION VIA CONTEXTUALIST APPROACH	Ali Akbar
		2	BA'ALBAKĪ'S INFLUENCE ON 1950S AND 1960S LEBANESE WOMEN WRITERS	Khaled Igbaria
		3	THE INTERACTION BETWEEN HUMAN AND ENVIRONMENT ON THE PERSPECTIVE OF ENVIRONMENTAL ETHICS	Mella Ismelina Farma Rahayu
		4	PROTECTION OF HUMAN RIGHTS IN EUROPE: THE PARLIAMENTARY DIMENSION	Aleksandra Chiniaeva
		5	EISENHOWER'S FAREWELL SPEECH: INITIAL AND CONTINUING COMMUNICATION EFFECTS	B. Kuiper
		6	HUMAN SECURITY PROVIDERS IN FRAGILE STATE UNDER ASYMMETRIC WAR CONDITIONS	Assis. Prof. Dr. Luna Shamieh
		7	DEVELOPING NEW MEDIA CREDIBILITY SCALE: A MULTIDIMENSIONAL PERSPECTIVE	Dr. Hanaa Farouk Saleh

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SALON 10	Dr. Najwa Alsayed Omar	1	DISABILITY DIVERSITY MANAGEMENT: A CASE STUDY OF THE BANKING SECTOR IN THE KSA	Dr. Nada Azhar
		2	CURSIVE HANDWRITING IN AN INTERNET AGE	Phd Student Karen Armstrong
		3	THE IMPACT OF PARENT INVOLVEMENT IN PRESCHOOL DISABLED CHILDREN	Assis. Prof. Sheng-Min Cheng
		4	THE IMPORTANCE OF ISSUES FOR THE YOUTH IN VOTER DECISION MAKING: A CASE STUDY AMONG UNIVERSITY STUDENTS IN MALAYSIA	Dr. Sivamurugan Pandian
		5	JAPANESE ENGLISH IN TRAVEL BROCHURES	Premvadee Na Nakompanom
		6	WAYS OF LIFE OF UNDERGRADUATE STUDENTS BASED ON SUFFICIENCY ECONOMY PHILOSOPHY IN SUAN SUNANDHA RAJABHAT UNIVERSITY	Phukamchanoad
		7	RESEARCH ANALYSIS IN ECLECTIC THEORY (KABOUDAN AND SFANDIAR)	Anrideh Alizadeh Mohd Nasir Hashim
			ONLINE METACOGNITIVE READING STRATEGIES USE BY POSTGRADUATE LIBYAN EFL STUDENTS	Dr. Najwa Alsayed Omar
			AUSPICIOUS MEANING FOR COMMUNITY SOUVENIR PRODUCTS	Somsakul Jerasilp, Jong Boonpracha

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SALON 11	Prof. Dr. Mikel Alonso López	1	INFLUENCE OF A COMPANY'S DYNAMIC CAPABILITIES ON ITS INNOVATION CAPABILITIES	Lovorka Galetic, Zeljko Vukelic
		2	A HYBRID PARTICLE SWARM OPTIMIZATION-NELDER-MEAD ALGORITHM (PSO-NM) FOR NELSON-SIEGEL-SVENSSON CALIBRATION	Sofia Ayouché Rachid Ellaia, Rajae Aboulaich
		3	RAMIFICATION OF OIL PRICES ON RENEWABLE ENERGY DEPLOYMENT	Osamah A. Alsayegh
		4	LEAN HEALTHCARE: BARRIERS AND ENABLERS IN THE COLOMBIAN CONTEXT	Erika Ruiz, Nestor Ortiz
		5	IDENTIFICATION OF LEAN IMPLEMENTATION HURDLES IN INDIAN INDUSTRIES	Bhim Singh
		6	PROMOTING LOCAL PRODUCTS THROUGH ONE VILLAGE ONE PRODUCT AND CUSTOMER SATISFACTION	Wardoyo, Humairoh
		7	ANALYSIS OF THE REASONS BEHIND THE DETERIORATED STANDING OF ENGINEERING COMPANIES DURING THE FINANCIAL CRISIS	Levan Sabauri
		8	REVIEW OF MODELS OF CONSUMER BEHAVIOUR AND INFLUENCE OF EMOTIONS IN THE DECISION MAKING	Mikel Alonso López

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SALON 12	Prof. Dr. Venugopal Kummamuru	1	EDUCATION OF PURCHASING PROFESSIONALS IN AUSTRIA: COMPETENCE BASED VIEW	Volker Koch
		2	DEVELOPING AN AUDIT QUALITY MODEL FOR AN EMERGING MARKE	Bitra Mashayekhi, Azadeh Maddahi, Arash Tahriiri
		3	DETERMINANTS OF PROFITABILITY IN INDIAN PHARMACEUTICAL FIRMS IN THE NEW INTELLECTUAL PROPERTY RIGHTS REGIME	Shilpi Tyagi, D. K. Nauriyal
		4	THE IMPACT OF MOTIVATION, TRUST, AND NATIONAL CULTURAL DIFFERENCES ON KNOWLEDGE SHARING WITHIN THE CONTEXT OF ELECTRONIC MAIL	Said Abdullah Al Saifi
		5	A STUDY ON THE DETERMINANTS OF EARNINGS RESPONSE COEFFICIENT IN AN EMERGING MARKET	Bitra Mashayekhi, Zeynab Lotfi Aghel
		6	ACCOUNTING INFORMATION SYSTEMS OF KUWAITI COMPANIES: OBSTACLES AND BARRIERS	Haya Y Alobaid
		7	PLANNING A SUPPLY CHAIN WITH RISK AND ENVIRONMENTAL OBJECTIVES	Ghanima Al-Sharrah, Haitham M. Lababidi, Yusuf I. Ali
		8	CORPORATE GOVERNANCE IN NETWORK MARKETING ORGANIZATIONS: THE ROLE OF ETHICS AND CSR	Prof. Dr. Venugopal Kummamuru
		9	RELATIONSHIP BETWEEN FINANCIAL REPORTING TRANSPARENCY AND INVESTMENT EFFICIENCY: EVIDENCE FROM IRAN	Bitra Mashayekhi, Hamid Kalthornia

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SALON 13	Assoc. Prof. Dr. Ngono Mindzeng Terencia	1	COGNITIVE BEHAVIOUR THERAPY TO TREAT SOCIAL ANXIETY DISORDER: A PSYCHOLOGY CASE	Dr. Yasmin Binti Othman Mydin Assis. Prof. Mohd. Fadzillah Abdul Razak
		2	SERIOUS GAME FOR AUTISM CHILDREN: REVIEW OF LITERATURE	Helmi Adly Mohd Noor Faaizah Shahbodin Naim Che Pee
		3	IMPACT OF PERSONALITY AND LONELINESS ON LIFE: ROLE OF ONLINE FLOW EXPERIENCES	Asmita Shukla Soma Parija
		4	DYNAMIC OF AGGRESSIVE BEHAVIOR AT THE CONTEXT OF REFLECTIVE PROCESS	Prof. Dr. Elena Chernyshkova
		5	HOW DOES PSYCHOANALYSIS HELP IN RECONSTRUCTING POLITICAL THOUGHT? AN EXERCISE OF INTERPRETATION	Lecture Subramaniam Chandran
		6	ALIGNING IS DEVELOPMENT WITH USERS- WORK HABITS	Abbas Moshref Razavi Rodina Ahmad
		7	COMMUNITY BASED TOURISM AND DEVELOPMENT IN THIRD WORLD COUNTRIES: THE CASE OF THE BAMILEKE REGION OF CAMEROON	Assoc. Prof. Dr. Ngono Mindzeng Terencia

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SALON 14	Prof. Dr. Tan Soon Chin	1	TOM STOPPARD: THE AMORALITY OF THE ARTIST	Majeed Mohammed Midhin Clare Finburgh
		2	ASSESSMENT ON COMMUNICATION STUDENTS' INTERNSHIP PERFORMANCES FROM THE EMPLOYERS' PERSPECTIVE	Yesuselvi Manickam Prof. Dr. Tan Soon Chin
		3	ANALYSIS OF POVERTY REDUCTION STRATEGIES AS MECHANISM FOR DEVELOPMENT IN NIGERIA FROM 1999-2019	Assis. Prof. Ahmed Usman Egeye Assoc. Prof. Dr. Hamza Muhammad
		4	ANALYSIS OF STELES WITH LIBYAN INSCRIPTIONS OF GRANDE KABYLIA, ALGERIA	Samia Ait Ali Yahia
		5	SOCIAL WORK PRACTICE TO LABOUR WELFARE: A PROPOSED MODEL OF FIELD WORK PRACTICUM AND ROLE OF SOCIAL WORKER IN INDIA	Prof. Dr. Naeem Ahmed
		6	ADOPTION AND DIFFUSION OF E-GOVERNMENT SERVICES IN INDIA: THE IMPACT OF USER DEMOGRAPHICS AND SERVICE QUALITY	Sayantan Khanra Rojers P. Joseph
		7	FROM VICTIM TO ETHICAL AGENT: OSCAR WILDE'S THE BALLAD OF READING GAOL AS POST-TRAUMATIC WRITING	Mona Salah El-Din Hassanein
		8	TOM STOPPARD: THE AMORALITY OF THE ARTIST	Majeed Mohammed Midhin Clare Finburgh



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SALON 15	Assoc. Prof. Shaira Ismail	1	WEST AFRICAN ISLAMIC CIVILIZATION: SOKOTO CALIPHATE AND SCIENCE EDUCATION	Dr. Hassan Attahiru Gwandu
		2	TEACHERS' PERCEPTIONS OF THE NEGATIVE IMPACT OF TOBEPHOBIA ON THEIR EMOTIONS AND JOB SATISFACTION	Phd. Prakash Singh
		3	KNOWLEDGE MANAGEMENT AS TOOL FOR ENVIRONMENTAL MANAGEMENT SYSTEM IMPLEMENTATION IN HIGHER EDUCATION INSTITUTIONS	Natalia Marulanda Grisales
		4	UNDERGRADUATES LEARNING PREFERENCES: A COMPARISON OF SCIENCE, TECHNOLOGY AND SOCIAL SCIENCE ACADEMIC DISCIPLINES IN RELATIONS TO TEACHING DESIGNS AND STRATEGIES	Salina Budin Assoc. Prof. Shaira Ismail
		5	INQUIRY ON THE IMPROVEMENT TEACHING QUALITY IN THE CLASSROOM WITH META-TEACHING SKILLS	Shahlan Surat Saemah Rahman Saadiyah Kummin
		6	THE NEW EDUCATORS: THE REASONS FOR SAUDI ARABIA TO INVEST MORE IN STUDENT COUNSELING PROGRAMS	TURKI Affralotaibi
		7	THE IMPACT OF DRAMA EDUCATION ON CREATIVITY DEVELOPMENT AT PRESCHOOL CHILDREN	Prof. Dr. Vladimíra Homáčková
		8	IDEAL SCHOOL OF THE FUTURE FROM THE PARENTS' VIEW: QUANTITATIVE RESEARCH OF FACULTY OF EDUCATION OF THE UNIVERSITY OF HRADEC KRÁLOVÉ	Yveta Pohnětalová

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SALON 16	Prof. Jiří Barta	1	EVALUATION OF CORROSION BY IMPEDANCE SPECTROSCOPY OF EMBEDDED STEEL IN AN ALTERNATIVE CONCRETE EXPOSED TO THE CHLORIDE ION	Assis. Prof. Dr. Erika J. Ruíz Assis. Prof. Dr. Jairo R. Cortes William A. Aperador
		2	EFFECT OF T6 AND RE-AGING HEAT TREATMENT ON MECHANICAL PROPERTIES OF 7055 ALUMINUM ALLOY	M. Esmailian M. Shakouri A. Mottahedi S. G. Shabestari
		3	DETERMINATION OF MATERIAL PROPERTIES FOR BIODEGRADABLE POLYLACTIC ACID PLASTIC USED IN 3D PRINTERS	Assis. Prof. Dr. Juraj Beniak Assoc. Prof. Lubomír Šooš Dr. Peter Križan Miloš Matuš
		4	RESEARCH OF CONCENTRATIBILITY OF LOW QUALITY BAUXITE RAW MATERIALS	Nadezhda Nikolaeva, Tatyana Alexandrova, Alexandr Alexandrov
		5	THE EFFECT OF MOLYBDATE ON CORROSION BEHAVIOUR OF AISI 316Ti STAINLESS STEEL IN CHLORIDE ENVIRONMENT	Dr. Viera Zatkáliková Dr. Lenka Markovičová, Aneta Tor-Swiatek
		6	EFFECT OF UV RADIATION TO CHANGE THE PROPERTIES OF THE COMPOSITE PA+GF	Lenka Markovičová Viera Zatkálikov Tomasz Garbacz
		7	SURFACE ACTIVATION OF CARBON NANOTUBES GENERATING A CHEMICAL INTERACTION IN EPOXY NANOCOMPOSITE	Mohamed Eldessouk Ebraheem Shady Yasser Gowayed
		8	AGING EFFECT ON MECHANICAL BEHAVIOR OF DUPLEX SATINLESS STEEL	Jungho Moon Tae Kwon Ha
		9	PRECIOUS AND RARE METALS IN OVERBURDEN CARBONACEOUS ROCKS: METHODS OF EXTRACTION	Tatyana Alexandrova, Alexandr Alexandrov, Nadezhda Nikolaeva
		10	DRY RELAXATION SHRINKAGE PREDICTION OF BORDEAUX FIBER USING A FEED FORWARD NEURAL	Assoc. Prof. Dr. Baeza S. Roberto

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SALON 17	Assoc.Prof. Dr. Shorena Tsiklauri	1	CURBING ABUSES OF LEGAL POWER IN THE SOCIETY	Tajudeen Ojo Ibraheem
		2	SOCIAL STRUCTURE, INVOLUNTARY RELATIONS, AND URBAN POVERTY	Mahmood Niroobakhsh
		3	KNOWLEDGE TRANSFER AND THE TRANSLATION OF TECHNICAL TEXTS	Dr. Ahmed Alaoui
		4	THE INFLUENCE OF ISLAMIC ARTS ON OMANI WEAVING MOTIFS	Zahra Ahmed Al-Zadjali
		5	HANDLING COMPLEXITY OF A COMPLEX SYSTEM DESIGN: PARADIGM, FORMALISM AND TRANSFORMATIONS	Hycham Aboutaleb Bruno Monsuez
		6	UNDERSTANDING EUROPE'S ROLE IN THE AREA OF LIBERTY, SECURITY AND JUSTICE AS AN INTERNATIONAL ACTOR	Sarah Barrere
		7	THE METHODOLOGY OF OUT-MIGRATION IN GEORGIA	Assoc.Prof. Dr. Shorena Tsiklauri
		8	AN IN-DEPTH ANALYSIS OF OPEN DATA PORTALS AS AN EMERGING PUBLIC E-SERVICE	Dr. Martin Lnenicka
		9	THE NATURE OF ORIGIN OF NEW CRIMINAL OCCURRENCES IN GJAKOVA REGION: CULTURAL AND CRIMINOLOGICAL "INTERSECTION" IN 1999-2009	Bekim Avdiaj

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SALON 1	Doç. Dr. Gülen ÖZYAZICI	1	Evaluation of Hybrid Rice Program In San Miguel, Bulacan: Microlevel Evidences	Scho C. Fillarca
		2	HASANKEYF İNCİRİNİN GÜNEŞ BACASI SERA ALANINDA KURUTULMASININ DENEYSEL OLARAK ARAŞTIRILMASI	Doç. Dr. Hakan Karakaya Fikret Kızar
		3	THE IMPACT OF CLIMATE CHANGE ON ECOLOGICAL LIFE CYCLE IN SUDAN	Lecturer Wadah ELSHEIKH Assoc. Prof. Dr. İlknur UCAK Assoc. Prof. Dr. M. Cüneyt BAĞDATLI
		4	AGRICULTURAL PRODUCTION ASSESSMENT OF THE WORLD DURING COVID-19 PERIOD	Researcher, Maliha AFREEN Assoc. Prof. Dr. İlknur UCAK Assoc. Prof. Dr. M. Cüneyt BAĞDATLI
		5	MEDICINAL AND AROMATIC PLANTS USED IN THE COSMETICS INDUSTRY	Doç. Dr. Gülen ÖZYAZICI
		6	EFFECT OF FOLIAR ZINC APPLICATIONS ON SOME AGRONOMIC CHARACTERISTICS OF CORIANDER (Coriandrum sativum L.)	Doç. Dr. Gülen ÖZYAZICI
		7	BİTKİ PATOJENİ FUNGUSLAR İLE MÜCADELEDE CRISPR TEKNOLOJİSİ	Dr. Öğr. Üyesi, Ahmet ÇAT
		8	FİTOPATOJEN FUNGUSLARIN KONTROLÜNDE NANOPARTİKÜLLERİN KULLANIMI	Dr. Öğr. Üyesi, Ahmet ÇAT

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SALON 2	Doç. Dr. Mehmet KAPLAN	1	TARIMSAL SAVAŞIMDA KULLANILAN PESTİSİTLERİN YOL AÇTIĞI ÇEVRE SORUNLARI	Doç. Dr. Mehmet KAPLAN
		2	THE EFFECT OF GLOBAL CLIMATE CHANGES ON INSECT LIFE	Doç. Dr. Mehmet KAPLAN
		3	YENİLENEBİLİR ENERJİ KAYNAKLARININ HAYVANCILIKTA ÖNEMİ	Ziraat Yüksek Mühendis Muhittin ÜNAL Prof.Dr.Dilek BOSTAN BUDAK
		4	HAYVANCILIK İŞLETME ATIKLARININ ÇEVREYE ETKİLERİ VE EKONOMİYE KAZANDIRILMASI	Ata Mustafa KARA Prof.Dr.Dilek BOSTAN BUDAK
		5	MACAR FİĞİ (Vicia pannonica Crantz.) VE ARPA (Hordeum vulgare L.) KARIŞIM ORANLARININ BAZI SİLAJ ÖZELLİKLERİNE ETKİSİ	Doç. Dr. Mehmet Arif ÖZYAZICI Dr. Öğr. Üyesi Semih AÇIKBAŞ
		6	KÜKÜRT DOZLARINA BAĞLI OLARAK KOCA FİĞ (Vicia narbonensis L.) BİTKİSİNDE BAZI TARIMSAL KARAKTERLERİN DEĞİŞİMİ	Doç. Dr. Mehmet Arif ÖZYAZICI Dr. Öğr. Üyesi Semih AÇIKBAŞ
		7	Effects of Some Tablet Detergents on Germination and Root Length of Pisum sativum L. Seeds	Dilek Sezer Prof. Dr. Özlem Aksoy
		8	Arbusküler Mikorizal Fungus (AMF) Sporu ve MAP Gübre Uygulamasının Bazı Mısır Çeşitleri İle Toprak Özellikleri Arasındaki İlişkiler Üzerine Etkisi	Emel ATMACA Marfaa Hasan Mahmood MAHMOOD
		9	NARİNGENİN'İN ANTİDİYABETİK OLDUĞU İDDİALARI YANLIŞ OLABİLİR	Doç. Dr. KASIM TAKIM
		10	ERKEN HASATIN SOĞUK SIKIM ZEYTİNYAĞINDA TOPLAM FENOLİK VE TOPLAM FLOVANOİD MİKTARI ÜZERİNE ETKİSİ	Doç. Dr. KASIM TAKIM

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SALON 3	Prof. Dr. Esin BASIM	1	EVALUATION OF THE KNOWLEDGE STATUS OF CULTIVATED MUSHROOM PRODUCERS IN KORKUTELİ DISTRICT OF ANTALYA PROVINCE ABOUT ORGANIC AGRICULTURE	Prof. Dr. Esin BASIM Prof. Dr. Hüseyin BASIM
		2	Plant Protection Problems and Solution Suggestions of Söğüt District Plateau Greenhouse Producers	Prof. Dr. Esin BASIM
		3	TÜRKİYE BALIKÇILIĞI VE SORUNLARI	Doç.Dr.Veysel PARLAK
		4	İKLİM DEĞİŞİKLİĞİ VE SU ÜRÜNLERİ	Doç.Dr.Veysel PARLAK
		5	GÜMÜŞİ HAVUZ BALIĞININ (Carassius gibelio) LAGENAR VE UTRİKULAR OTOLİT ÖLÇÜMLERİ İLE BALIK BOYU ARASINDAKİ İLİŞKİLER	Dr. Semra SAYGIN Doç. Dr. Melek ÖZPİÇAK Prof. Dr. Savaş YILMAZ
		6	EVALUATION OF BEE POLLEN FOR FOOD SAFETY HAZARDS	Dr. Öğr. Üyesi Mehmet Emin AYDEMİR Araş. Gör. Enes SEZER
		7	DOLGULU GEVREK REÇETE VE PROSES GELİŞTİRMESİ	Arge Uzman Yardımcısı, Hasret Beyza Pınar HOCAZADE
		8	BETALAIN PİGMENTİ VE BİSKÜVİDE KULLANIMI	ANI KUŞCU MERVE KAHRAMAN
		9	EFFECTS OF SHORT OR LONG-TERM PROGESTERONE-CONTAINING SPONGE TREATMENTS ON MALONDIALDEHYDE AND GLUTATHIONE IN TUJ EWES	Assoc. Prof. Mushap KURU Assoc. Prof. Mustafa MAKAV
		10	THE EFFECT OF OVARIECTOMY ON TOTAL CHOLESTEROL, HIGH-DENSITY LIPOPROTEIN, AND LOW-DENSITY LIPOPROTEIN IN RATS	Assoc. Prof. Mustafa MAKAV Assoc. Prof. Mushap KURU

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SALON 4	Doç. Dr. Abdullah Candan	1	Faz İzoleli Hava Aralıklı Yüksek Gerilim Busbar Çözümü	Dursun ERİŞ Vedat VOŞKI Hıdır GÖĞÜLTER Ahmet Can YALÇIN Mehmet Can BÜYÜKDÖĞEROĞLU Doç. Dr., Ahmet FEYZİOĞLU
		2	SÜREKLİ MIKNATISLI TÜBÜLER DC LİNEER MOTOR PARAMETLERİNİN BELİRLENMESİ	Öğr. Gör. Dr. Ziya DEMİRKOL Doç. Dr. Uğur HASIRCI
		3	YÜKSEK BASINÇLI DÖKÜM YÖNTEMİ İLE ÜRETİLEN PARÇALARIN ÇAPAK ALMA PROSESLERİNİN ENDÜSTRİYEL ROBOTLAR KULLANILARAK İYİLEŞTİRİLMESİNİN GERÇEKLEŞTİRİLMESİ	Robot ve Otomasyon Mühendisi, Umut COŞGUN Doç. Dr., Ahmet FEYZİOĞLU
		4	PARK BAHÇE ve SOKAK AYDINLATMASI VE FARKLI UYGULAMALAR İÇİN KOLAY ÇOKLANABİLİR YAPIDA, TOZ TUTMAYAN ARMATÜR TASARIMI GELİŞTİRİLMESİ	Ömer İŞBİLİR Murat KOCAOĞLU Doç. Dr., Ahmet FEYZİOĞLU
		5	NANOPARTİKÜL TAKVİYESİNİN TEK BİNDİRMELİ BAĞLANTILARDA ÇENTİKLİ KOMPOZİT MALZEMELERİN ÇEKME DAVRANIŞLARINA ETKİSİ	Dr. Öğr. Üyesi, Mehmet Emin DEMİR Arş. Gör. Dr., Raşit Koray ERGÜN
		6	LİTYUM BAZLI Li <sub>2</sub> MgSn HEUSLER ALAŞIMININ YAPISAL, ELEKTRONİK VE ELASTİK ÖZELLİKLERİ	Doç. Dr. Abdullah Candan Doç. Dr. Aytaç Erkişi
		7	GGA VE GGA + mBJ FONKSİYONELİ İLE YARI HEUSLER LiAgTe BİLEŞİMİNİN YAPISAL VE ELEKTRONİK ÖZELLİKLERİNE İLİŞKİN İLK PRENSİPLER ÇALIŞMASI	Doç. Dr. Abdullah Candan Doç. Dr. Aytaç Erkişi
		8	ACTUATOR TECHNOLOGIES USED IN EXOSKELETONS	Arş.Gör.Dr. Melih CANLIDİNÇ Dr.Öğr.Üyesi, Mustafa GÜLEŞEN

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SALON 5	Dr.Öğr.Üyesi Nilay ÇAKICI	1	HEMŞİRELİK ÖĞRENCİLERİNDE KLİNİK KARAR VERME BECERİSİ İLE DUYGUSAL ZEKA ARASINDAKİ İLİŞKİNİN BELİRLENMESİ	Dr. Öğr. Üyesi Kezban KORAŞ SÖZEN
		2	HEMŞİRELİK SON SINIF ÖĞRENCİLERİNİN HEMŞİRELİK MESLEĞİNİ ALGILAMA DURUMLARI VE KARİYER GELECEKLERİNE YÖNELİK TUTUMLARI ARASINDAKİ İLİŞKİNİN BELİRLENMESİ	Dr. Öğr. Üyesi Kezban KORAŞ SÖZEN Öğr. Gör. Tuğba AYDEMİR
		3	UNİVERSİTY STUDENTS' VIEWS AND METAPHORICAL PERCEPTIONS ON EYE HEALTH AND OPTOMETRY	Şevval BARUT
		4	KOLALI İÇECEKLERİN KÖK-UR NEMATODLARI (Nematoda: Meloidogyne spp.) VE BİTKİDE NEMATODTAN KAYNAKLANAN ZARAR ÜZERİNE ETKİLERİ	Ziraat Yük. Müh. Şevval BARUT Prof. Dr. Sevilhan Mennan
		5	SAĞLIK BİLİMLERİ FAKÜLTESİ ÖĞRENCİLERİNİN YAPAY ZEKA KAYGISI	Dr.Öğr.Üyesi Nilay ÇAKICI
		6	ERİŞKİN YOĞUNBAKIMDA HEMŞİRELERİN HASTALARLA ETKİLEŞİMİ	Dr.Öğr.Üyesi Nilay ÇAKICI
			EXAMINATION OF HEALTHY LIFESTYLE BEHAVIORS OF UNIVERSITY STUDENTS STAYING IN DORMITORIES AFFILIATED WITH THE CREDIT AND DORMITORIES INSTITUTION	Dr. Öğr. Üyesi Hüseyin ÇAPUK
			VOLEYBOLCULARA UYGULANAN PROPRİOSEPTİF NÖROMÜSKÜLER FASİLİTASYON GERME EGZERSİZLERİNİN ANAEROBİK GÜÇ ESNEKLİK VE MOTORİK ADAPTASYONLAR ÜZERİNE RANDOMİZE KONTROLLÜ ÇALIŞMA	Yüksek Lisans Öğrencisi Recep YAYLA Doç. Dr. Zariife PANCAR Doktora Öğrencisi Muhammet Kaan DARENDELİ
	7	HEMŞİRELİK VE İNOVASYON	Öğr. Gör. İlknur PALAZ Öğr. Gör. Dr. Ahmet TAŞ	
	8	HEMŞİRELİK ALANINDA BİLİŞİM UYGULAMALARI	Öğr. Gör. Dr. Ahmet TAŞ Öğr. Gör. İlknur PALAZ	



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SALON 6	Associate Professor, Seher ARSLANKAYA	1	S700 ÇELİĞİNİN VE HARDOX 450 ÇELİKLERİNİN, ROBOTİK KAYNAK TEKNOLOJİSİYLE, ER 110S-G TEL İLE BİRLEŞTİRİLMESİ VE KAYNAK KABİLİYETLERİNİN İNCELENMESİ	Volkan DEMİREL Evren KOCAOĞLU Doç. Dr. Volkan KIRMACI
		2	PRICE ESTIMATION PROGRAM FOR SECOND-HAND VEHICLES WITH MACHINE LEARNING	Associate Professor, Seher ARSLANKAYA
		3	PERFORMANCE RANKING OF SALES AND MARKETING EXPERTS IN A COMPANY USING DATA ENVELOPMENT ANALYSIS	Associate Professor, Seher ARSLANKAYA
		4	AYAKKABI MALZEMELERİNİN AYAK SAĞLIĞI ÜZERİNDEKİ ETKİLERİ	Dr.Öğr.Üyesi Hatice ER Doç.Dr.Nuray O. IŞIK EMEKSİZ Öğr.Gör. Ertan EROL
		5	DERİ KONFEKSİYON SEKTÖRÜNDE SÜRDÜRÜLEBİLİRLİK VE GERİ DÖNÜŞÜM OLANAKLARI	Doç. Dr. Nuray O. IŞIK EMEKSİZ Dr. Öğr. Üyesi Hatice ER Öğr. Gör. Ertan EROL

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SALON 7	Dr. Öğr. ÜYESİ Abdullah SEVİN	1	RPA AND AI: CHALLENGES AND OPPORTUNITIES	Zeynep ÖRPEK Büşra TURAL Samet ÖZMEN
		2	INCREASED EFFICIENCY WITH ROBOTIC PROCESS AUTOMATION AND TRANSFORMATION OF ROBOTIC PROCESS AUTOMATION PROCESSES WITH ARTIFICIAL INTELLIGENCE: EXAMPLE OF VAKIF PARTICIPATION BANK	İlknur COŞKUNER Kazım Tamer KARAGÖZ Fatih KAZOVA
		3	USING METAHEURISTIC METHODS AND COMPARISON OF ALGORITHMS IN REAL-WORLD PROBLEMS	Oğuzhan DİLBER Dr. Öğr. Üyesi Serhat KILIÇARSLAN Doç. Dr. Abdullah ELEN
		4	SOLVING REAL-WORLD PROBLEMS WITH METAHEURISTIC METHODS AND PERFORMANCE COMPARISON OF ALGORITHMS IN THE LITERATURE	Samet PANDA Dr. Öğr. Üyesi Serhat KILIÇARSLAN Doç. Dr. Abdullah ELEN
		5	DESIGNING LATTICE-STRUCTURED EXPERIMENTAL SPECIMENS VIA AUTOMATED PARAMETER ITERATIONS USING NTOPCL AND PYTHON PROGRAMMING LANGUAGE	Research Assistant, Ahmet DAYANÇ
		6	A COMPREHENSIVE COMPARISON OF NETWORK SIMULATION TOOLS	Sümeyye TEMİZEL Şeyma Nur GEZMİŞ Dr. Öğr. ÜYESİ Abdullah SEVİN
		7	COMPARISON OF DISCRETE EVENT SIMULATION APPROACHES	Dr. Öğr. ÜYESİ Abdullah SEVİN Süleyman ÖNDER

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SALON 8	Doç. Dr., Safiye SARI	1	BREAKING WHEEL IN BYZANTINE AND ITS TRACES IN BYZANTINE PAINTING	Dr. Öğr. Üyesi, A. Nazlı SOYKAN
		2	18. VE 19. YÜZYIL GİYİM BİÇİMSELLİĞİNDE REDİNGOT	Doç. Dr., Safiye SARI
		3	GELENEKSEL İSKİLİP EVLERİNDE YAPIM TEKNİĞİ VE MALZEME KULLANIMI	Dr. Doğan KOŞAN
		4	TROİA I-V. TABAKA ÇANAK ÇÖMLEKLERİ ÜZERİNDE YER ALAN İNSAN YÜZÜ TASVİRLERİ	Yük. Lis. Öğr., ECEM ÇAĞLAYAN
		5	PYOTR ILYICH TCHAIKOVSKY PERCUSSION INSTRUMENTS PARTS IN THE "1812 OVERTURE" ANALYSIS IN TERMS OF PERFORMANCE TECHNIQUES	Yüksek Lisans Öğrencisi, Sinan ANGIŞHAN Doçent, Bahadır ÇOKAMAY
		6	BIBLIOMETRIC ANALYSIS OF GRADUATE THESIS IN TROMBONE	Yüksek Lisans Öğrencisi, Serdar ER Doçent, Bahadır ÇOKAMAY
		7	TÜRKİYEDE GRAFİK TASARIMININ SÜRDÜREBİLİR ÇEVREYE OLAN KATKILARI	Yüksek Lisans Öğrencisi, Yılmaz SERT
		8	HERBAL DECORATION CLOTHES FROM THE 20TH CENTURY FOUND IN KONYA	Araştırma Görevlisi Dr. ŞERİFE DOĞAN
		9	NEEDLE LACES FOUND IN KONYA HOUSES	Araştırma Görevlisi Dr. ŞERİFE DOĞAN
		10	RESİM SANATINDA SUFİLERİN İMGESEL TEMSİLİ, CEMAL TOLLU'NUN SEMA TÖRENİ TABLOSU	Arş. Gör. Dr, Mert Yavaşca

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SALON 9	Swapnil Rajan Kashikar	1	BANANA PEEL-BASED ECO-SORPTION: A NOVEL AND SUSTAINABLE TECHNIQUE FOR MANGANESE ION REMEDIATION	Seham Ghalwash, Ayman Ismail
		2	EXPLORING THE ANTIMICROBIAL POTENTIAL OF EUCALYPTUS CAMENDULENSIS ESSENTIAL OIL: A MULTIFACETED APPROACH TO TARGETING BACTERIA AND FUNGI	Yizhen Zhao, Adam S. Z. Belloum,
		3	ENABLING PRECISION SQUARE WATERMELON SHAPING: UNVEILING THE DESIGN AND DEVELOPMENT OF A MECHANICAL FORCE GAUGE	Gonc,alo Maia da Costa, Zhiming Zhao
		4	HARNESSING THE BIOTECHNOLOGICAL POTENTIAL OF ENDOPHYTIC FUNGI FROM HIBISCUS LEAVES: ISOLATION AND IDENTIFICATION OF FIBRINOLYTIC PROTEASES	Yanting Nawata Kazumitsu Cao,
		5	EXPLORING THE BIOACTIVE COMPOUNDS IN NIGELLA SATIVA WITH CYTOTOXIC ACTIVITY: A SULFORHODAMINE-B ASSAY-GUIDED FRACTIONATION STUDY	Swapnil Rajan Kashikar Ajay Vasantao Jadhav,
		6	INVESTIGATING THE EFFECTS OF AMINOPOLYETHER ON 18F-FDG PROPERTIES AND ITS IMPLICATIONS FOR PET IMAGING APPLICATIONS	Edward Pol
		7	UNVEILING THE POTENTIAL OF AMINO ACID-BASED MICELLES IN DRUG DELIVERY: SYNTHESIS, CHARACTERIZATION, AND APPLICATIONS	Nafe Moradkhani, Frederick Benaben, Benoit Montreuil,
		8	INVESTIGATING THE BARRIERS TO TREATMENT COMPLETION AND THEIR ASSOCIATION WITH HEALTH-RELATED QUALITY OF LIFE AMONG TUBERCULOSIS PATIENTS IN YEMEN	Dr. Ali Vatankhah Barenji, Dima Nazzal
		9	DEVELOPING INTERVENTIONS TO IMPROVE HEALTH-RELATED QUALITY OF LIFE FOR LOST TO FOLLOW-UP TUBERCULOSIS PATIENTS IN YEMEN: A NEEDS ASSESSMENT	Swapnil Rajan Jadhav, Ajay Vasantao Kashikar
		10	TACKLING ANTIBIOTIC OVERUSE IN IRAQI ACUTE CARE: A MULTIFACETED APPROACH TO OPTIMIZING PRESCRIBING PRACTICES AND COMBATING ANTIMICROBIAL RESISTANCE	Dr. Raja Kannusamy

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SALON 10	Assoc. Prof. Dr. Diana Gil Herrera	1	STUDYİNG THE INTERCALATION OF LOW DENSITY POLYETHYLENE/CLAY NANOCOMPOSİTES AFTER DIFFERENT UV EXPOSURES	Assis. Prof. Dr. Samir Al-Zobaidi
		2	EFFECT OF SEWİNG SPEED ON THE PHYSİCAL PROPERTİES OF FİREFİGHTER SEWİNG THREADS	Adnan Mazar Engin Akcagun Antonin Havelka Funda Buyuk Mazari, Pavel Kejzlar
		3	THE EXPERİMENTAL AND NUMERİCAL ANALYSİS OF TRİP STEEL WİRE DRAWİNG PROCESSES DRAWN WİTH DIFFERENT PARTİAL REDUCTIONS	Lecture Sylwia Wiewiorowska, Assis. Prof. Dr. Zbigniew Muskalski
		4	PREDİCTION OF SOLİDİFİCATION BEHAVİOR OF AL ALLOY İN A CUBE MOLD CAVİTY	N. P. Yadav Assoc. Prof. Deepti Verma
		5	İNFLUENCE OF HİGH TEMPERATURE AND HUMİDİTY ON POLYMER COMPOSİTES USED İN RELİNİNG OF SEWAGE	Parastou Kharazmi Folke Björk
		6	ANTİCORROŚİVE POLYURETHANE CLEAR COAT WİTH SELF-CLEANİNG CHARACTER	Prof. Nihit Madireddi P. A. Mahanwar
		7	EFFECTS OF COUPLİNG AGENT ON THE PROPERTİES OF DURİAN SKİN FİBRE FİLLED POLYPROPYLENE COMPOSİTE	Hazleen Anuar Nur Aimi Mohd Nasir Yousuf El-Shekeil
		8	RESPONSE SURFACE METHODOLOGY FOR OPTİMUM HARDNESS OF TİN ON STEEL SUBSTRATE	R. Joseph Raviselvan K. Ramanathan P. Perumal M. R. Thansekhar
		9	THE EFFECTS AND İNTERACTİONS OF SYNTHESİS PARAMETERS ON PROPERTİES OF MG SUBSTİTUTED HYDROXYAPATİTE	S. Sharma U. Batra S. Kapoor, A. Dua
		10	Experimental Investigation on Mechanical Properties of Rice Husk Filled Jute Reinforced Composites	Priyankar Pratim Deka, Sutanu Samanta

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SALON 11	Assis. Prof. Dr. Yusrinda Asha	1	SATELLITE RAINFALL PREDICTION TECHNIQUES - A STATE OF THE ART REVIEW	S. Sarumathi N. Shanthy S. Vidhya
		2	MATERIAL PARAMETER IDENTIFICATION OF MODIFIED ABDELKARIM-OHNO MODEL	Pedro F. Albuquerque Assis. Prof. Dr. Pedro V. Gamboa Assoc. Prof. Miguel A. Silvestre
		3	“FRICTION SURFACES” OF AIRPORT EMERGENCY PLAN	Dr. Jakub Kraus, Vladimír Plos, Peter Vittek
		4	PARAMETRIC INVESTIGATION OF AIRCRAFT DOOR’S EMERGENCY POWER ASSIST SYSTEM (EPAS)	Dr. Marshal D. Kafle Jun H. Kim Hyun W. Been Kyoung M. Min Sung H. Kim
		5	ACOUSTIC BEHAVIOR OF POLYMER FOAM COMPOSITE OF SHOREA LEPROSULA AFTER UV-IRRADIATION EXPOSURE	Anika Zafiah M. Rus S. Shafizah
		6	MODELING AND SIMULATION OF AXIAL FAN USING CFD	Assis. Prof. Dr. Hemant Kumawat
		7	A MODIFIED DECOUPLED SEMI-ANALYTICAL APPROACH BASED ON SBFEM FOR SOLVING 2D ELASTODYNAMIC PROBLEMS	M. Fakharian M. I. Khodakarami
		8	NUMERICAL INVESTIGATION OF NANOFLUID BASED THERMOSYPHON SYSTEM	Kiran Kumar K Ramesh Babu Bejjam Atul Najan
		9	PREDICTION OF SCOUR PROFILE CAUSED BY SUBMERGED THREE-DIMENSIONAL WALL JETS	Abdullah Al Faruque Ram Balachandar
		10	NUMERICAL INVESTIGATION OF THE EFFECT OF NUMBER OF WAVES ON HEAT TRANSFER IN A WAVY WALL ENCLOSURE	Assis. Prof. Dr. Ali Reza Tahavvor Assis. Prof. Dr. Saeed Hosseini Dr. Afshin Karimzadeh Fard

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SALON 12	Simon B. N. Thompson	1	CORRELATIONAL ANALYSIS BETWEEN BRAIN DOMINANCES AND MULTIPLE INTELLIGENCES	Lakshmi Dhandabani, Rajeev Sukumaran
		2	AWARENESS OF STUDENTS AND TEACHERS TOWARDS AIDS AND AIDS EDUCATION	Assis. Prof. Dr. Anjan Saikia
		3	APPLICATION OF SINGLE SUBJECT EXPERIMENTAL DESIGNS IN ADAPTED PHYSICAL ACTIVITY RESEARCH: A DESCRIPTIVE ANALYSIS	Jiabei Zhang Ying Qi
		4	THE CLASSIFICATION PERFORMANCE IN PARAMETRIC AND NONPARAMETRIC DISCRIMINANT ANALYSIS FOR A CLASS- UNBALANCED DATA OF DIABETES RISK GROUPS	Dr. Lily Ingsrisawang Assis. Prof. Dr. Tasanee Nacharoen
		5	VALIDATION OF AN ACUITY MEASUREMENT TOOL FOR MATERNITY SERVICES	Cherryl Lowe
		6	A COMPREHENSIVE METHOD OF FAULT DETECTION AND ISOLATION BASED ON TESTABILITY MODELING DATA	Junyou Shi Weiwei Cui
			YAWNING AND CORTISOL AS A POTENTIAL BIOMARKER FOR EARLY DETECTION OF MULTIPLE SCLEROSIS	Simon B. N. Thompson
			AN APPLICATION OF SELF-HEALTH RISK ASSESSMENT AMONG POPULATIONS LIVING IN THE VICINITY OF A FIBER-CEMENT ROOFING FACTORY	Assis. Prof. Dr. Phayong Thepaksorn
			PREDICTORS OF NON-ALCOHOLIC FATTY LIVER DISEASE IN EGYPTIAN OBESE ADOLESCENTS	Moushira Zaki Wafaa Ezzat Yasser Elhosary, Omnia Saleh
		7	ANGIOGRAPHIC EVALUATION OF ETT (TREADMILL) POSITIVE PATIENTS IN A TERTIARY CARE HOSPITAL OF BANGLADESH	Syed Dawood Md. Taimur, Saidur Rahman Khan, Farzana Islam

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SALON 13	Prof. Dr. Fadia Sultany	1	DIFFERENTIAL SENSITIVITY OF NITROGEN-FIXING, FILAMENTOUS CYANOBACTERIAL SPECIES TO AN ORGANOCHLORINE INSECTICIDE - 6, 7, 8, 9, 10, 10-HEXACHLORO-1, 5, 5A, 6, 9, 9A-HEXAHYDRO-6, 9-METHANO-2, 4, 3-BENZODIOXATHIOPINE-3-OXIDE	Nirmal J.I. Kumar, Dr. Anubhuti A. Bora, Assis. Prof. Dr. Manmeet K. Amb
		2	AN EVALUATION OF PESTICIDE STRESS INDUCED PROTEINS IN THREE CYANOBACTERIAL SPECIES- ANABAENA FERTILISSIMA, AULOSIRA FERTILISSIMA AND WESTIELLOPSIS PROLIFICA USING SDS-PAGE	Nirmal Kumar, Rita N. Kumar, Anubhuti Bora, Manmeet Kaur Amb
		3	COMPUTATIONAL IDENTIFICATION OF MICRORNAs AND THEIR TARGETS IN TWO SPECIES OF EVERGREEN SPRUCE TREE (PICEA)	Assis. Prof. Dr. Muhammad Y.K. Barozai, Ifthikhar A. Baloch, M. Din
		4	A NEW APPROACH IN PROTEIN FOLDING STUDIES REVEALED THE POTENTIAL SITE FOR NUCLEATION CENTER	Nurul Bahiyah Ahmad Khairudin, Habibah A Wahab
		5	DETECTION OF OXIDATIVE STRESS INDUCED BY MOBILE PHONE RADIATION IN TISSUES OF MICE USING 8-OXO-7, 8-DIHYDRO-2'-DEOXYGUANOSINE AS A BIOMARKER	Phd. Can Ahmad M. Khalil, Dr. Ahmad M. Alshamali, Marwan H. Gagaa
		6	MICROBIAL OIL PRODUCTION BY ISOLATED OLEAGINOUS YEAST TORULASPORA GLOBOSA YU5/2	Rita Kumar, Alka Sharma, Purnima Dhall, Niha M. Kulshreshtha, Anil Kumar
		7	HIGH-INTENSITY NANOSECOND PULSED ELECTRIC FIELD EFFECTS ON EARLY PHYSIOLOGICAL DEVELOPMENT IN ARABIDOPSIS THALIANA	Assis. Prof. Dr. Wisuwat Songnuan, Dr. Phumin Kirawanich
		10	MICRO-AEROBIC, ANAEROBIC AND TWO-STAGE CONDITION FOR ETHANOL PRODUCTION BY ENTEROBACTER AEROGENES FROM BIODIESEL-DERIVED CRUDE GLYCEROL	Kanokrat Saisaard, Irimi Angelidaki, Poonsuk Prasertsan
			CHARACTERIZATION OF THE O.UL-MS952 INTRON:A POTENTIAL MOLECULAR MARKER TO DISTINGUISH BETWEEN OPHIOSTOMA ULMI AND OPHIOSTOMA NOVO-ULMI SUBSP. AMERICANA	Mohamed Hafez, Georg Hausner



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SALON 14	Assis. Prof. Dr. S. Asadzadeh Vostakolaei	1	SEX DIFFERENCES IN THYROID GLAND STRUCTURE OF RABBITS	Parchami A., Fatahian Dehkordi RF.
		2	EVALUATION OF PROTEIN DIGESTIBILITY IN CANOLA MEALS BETWEEN CAECECTOMISED AND INTACT ADULT COCKERELS	Ali Nouri Emamzadeh, Akbar Yaghobfar
		3	EFFECT OF L-ARGININE ON NEUROMUSCULAR TRANSMISSION OF THE CHICK BIVENTER CERVICIS MUSCLE	Assis. Prof. Dr. S. Asadzadeh Vostakolaei
		4	THE RELATIONSHIP BETWEEN SHEEP MANAGEMENT AND LAMB MORTALITY	Assis. Prof. Dr. T. M. Mousa-Balabel
		5	EFFECT OF STOCKING DENSITY ON MONOSEX NILE TILAPIA GROWTH DURING POND CULTURE IN INDIA	Suman B. Chakraborty, Samir Banerjee
		6	PRAGATI NODE POPULARITY (PNP) APPROACH TO IDENTIFY CONGESTION HOT SPOTS IN MPLS	E. Ramaraj, A. Padmapriya
		7	IMPROVEMENT OF SEMEN QUALITY IN HOLSTEIN BULLS DURING HEAT STRESS BY SUPPLEMENTING OMEGA-3 FATTY ACIDS	Hamid. Gholami, Mohammad. Chamani, Armin. Towhidi, Mohammad. H. Fazeli
		8	THE RELATIONSHIP BETWEEN EXCRETA VISCOSITY AND TMEN IN SBM	Assis. Prof. Ali Nouri Emamzadeh
		9	ANTICOAGULATORY ROLE OF AN ERGOT MESYLATE: HYDERGINE	Fareeha A., Irfan Z Qureshi
		10	THE EFFECT OF SELECTIVE CYCLOOXYGENASE (COX) INHIBITORS ON JAPANESE MEDAKA (ORYZIAS LATIPES) REPRODUCTION PARAMETERS	Dr. Agata Kowalska, Radosław K. Kowalski, Assis. Prof. Dr. Zdzisław Zakeś

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SALON 15	Manal E. Fareed	1	PERCEPTIONS OF HEALTH STATUS AND LIFESTYLE HEALTH BEHAVIORS OF POOR PEOPLE IN MAURITIUS	Smita S. D. Goorah, Melisha Panchoo
		2	SPREADING DYNAMICS OF A VIRAL INFECTION IN A COMPLEX NETWORK	Assis. Prof. Dr. Khemanand Moheeput, Smita S. D. Goorah, Satish K. Ramchurn
		3	CHASE TRAINER EXERCISE PROGRAM IN ATHLETE WITH UNILATERAL PATELLOFEMORAL PAIN SYNDROME (PFPS)	Asha Hasnimy Mohd Hashim, Lee Ai Choo
		4	ANALYSIS OF METALLOTHIONEIN GENE MT1A (RS11076161) AND MT2A (RS10636) POLYMORPHISMS AS A MOLECULAR MARKER IN TYPE 2 DIABETES MELLITUS AMONG MALAY POPULATION	Assis. Prof. Dr. Norsakinah Mohammad Osman, Ali Etemad, Assoc. Prof. Dr. Patimah Ismail
		5	EFFECT OF ON-DEMAND CUEING ON FREEZING OF GAIT IN PARKINSON'S PATIENTS	Prof. Dr. Rosemarie Velik
		6	EFFECT OF COLD, WARM OR CONTRAST THERAPY ON CONTROLLING KNEE OSTEOARTHRITIS ASSOCIATED PROBLEMS	Amal E. Shehata, Manal E. Fareed
		7	CHEMOTHERAPY SAFETY PROTOCOL FOR ONCOLOGY NURSES: IT'S EFFECT ON THEIR PROTECTIVE MEASURES PRACTICES	Magda M. Mohsen, Manal E. Fareed
		8	FITTER - A FRAMEWORK FOR INTEGRATING ACTIVITY TRACKING TECHNOLOGIES INTO ELECTRIC RECREATION FOR CHILDREN AND ADOLESCENTS	R. Altamimi, G. Skinner, K. Nesbitt
		9	CONSUMPTION PATTERN AND DIETARY PRACTICES OF PREGNANT WOMEN IN ODEDA LOCAL GOVERNMENT AREA OF OGUN STATE	Dr. Ademuyiwa, Assis. Prof. Dr. M. O., Sanni, S. A.
		10	BIOMECHANICS ANALYSIS WHEN DELIVERING BABY	Kristyanto B.

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SALON 16	Dr. Sherzod Messikh	1	MAXIMUM POWER POINT TRACKING BASED ON ESTIMATED POWER FOR PV ENERGY CONVERSION SYSTEM	Assis. Prof. Dr. Zainab Almukhtar, Dr. Adel Merabet
		2	EFFECT OF COLLECTOR ASPECT RATIO ON THE THERMAL PERFORMANCE OF WAVY FINNED ABSORBER SOLAR AIR HEATER	Abhishek Priyam, Prabha Chand
		3	SIMILITUDE FOR THERMAL SCALE-UP OF A MULTIPHASE THERMOLYSIS REACTOR IN THE CU-CL CYCLE OF A HYDROGEN PRODUCTION	Assis. Prof. Dr. Mohammed W. Abdulrahman
		4	ENHANCEMENT OF THERMAL PERFORMANCE OF LATENT HEAT SOLAR STORAGE SYSTEM	Rishindra M. Sarviya, Ashish Agrawal
		5	A ZVT-ZCT-PWM DC-DC BOOST CONVERTER WITH DIRECT POWER TRANSFER	Naim Suleyman Ting, Yakup Sahin, Ismail Aksoy
		6	INTELLIGENT MAXIMUM POWER POINT TRACKING USING FUZZY LOGIC FOR SOLAR PHOTOVOLTAIC SYSTEMS UNDER NON-UNIFORM IRRADIATION CONDITIONS	Assis. Prof. Dr. P. Selvam, Ress. Assis S. Senthil Kumar
		7	AN IMPROVED CUCKOO SEARCH ALGORITHM FOR VOLTAGE STABILITY ENHANCEMENT IN POWER TRANSMISSION NETWORKS	Reza Sirjani, Nobosse Tafem Bolan
		8	TECHNICAL ANALYSIS OF COMBINED SOLAR WATER HEATING SYSTEMS FOR COLD CLIMATE REGIONS	Hossein Lotfizadeh, André McDonald, Amit Kumar
		9	AN EXPERIMENTAL STUDY ON EVACUATED TUBE SOLAR COLLECTOR FOR STEAM GENERATION IN INDIA	Assis. Prof. Dr. Avadhesh Yadav, Anunaya Saraswat
		10	COUPLING HEAT AND MASS TRANSFER FOR HYDROGEN-ASSISTED SELF-IGNITION BEHAVIORS OF PROPANE-AIR MIXTURES IN CATALYTIC MICRO-CHANNELS	Junjie Chen, Deguang Xu

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SALON 17	Assoc. Prof. Dr. Michael S. Quiming,	1	REAL-TIME RECOGNITION OF DYNAMIC HAND POSTURES ON A NEUROMORPHIC SYSTEM	Qian Liu, Steve Furber
		2	OPTIMAL PLANNING OF DISPATCHABLE DISTRIBUTED GENERATORS FOR POWER LOSS REDUCTION IN UNBALANCED DISTRIBUTION NETWORKS	Mahmoud M. Othman, Y. G. Hegazy, A. Y. Abdelaziz
		3	OPTIMAL ECONOMIC LOAD DISPATCH USING GENETIC ALGORITHMS	Assis. Prof. Dr. Vijay Kumar, Assis. Prof. Dr. Jagdev Singh, Dr. Yaduvir Singh, Sanjay Sood
		4	EMPIRICAL MODE DECOMPOSITION BASED MULTISCALE ANALYSIS OF PHYSIOLOGICAL SIGNAL	Young-Seok Choi
		5	EXPERIMENTAL IMPLEMENTATION OF MODEL PREDICTIVE CONTROL FOR PERMANENT MAGNET SYNCHRONOUS MOTOR	Assis. Prof. Dr. Abdelsalam A. Ahmed
		6	ANALYSIS OF DIRECT CURRENT MOTOR IN LABVIEW	E. Ramprasath, P. Manojkumar, P. Veena
		7	IMPROVEMENT OF VOLTAGE PROFILE OF GRID INTEGRATED WIND DISTRIBUTED GENERATION BY SVC	Fariba Shavakhi Zavareh, Hadi Fotoohabadi, Reza Sedaghati
		8	A SIMPLE ADAPTIVE ATOMIC DECOMPOSITION VOICE ACTIVITY DETECTOR IMPLEMENTED BY MATCHING PURSUIT	Thomas Bryan, Veton Kepuska, Ivica Kostanic

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SALON 1	Assoc. Prof. Özge ALTINTAŞ	1	EĞİTİM KURUMLARINDA KADIN YÖNETİCİLERİN KARŞILAŞTIĞI SORUNLAR VE ÇÖZÜM YOLLARI	Prof. Dr., Adem BAYAR Yüksek Lisans Öğrencisi, Gülçimen ÇALIŞKAN
		2	REHBER ÖĞRETMEN/PSİKOLOJİK DANIŞMANLARA GÖRE İSTENMEYEN SORUN DAVRANIŞLARIN NEDENLERİ VE ÇÖZÜM YOLLARI	Prof. Dr., Adem BAYAR Yüksek Lisans Öğrencisi, Gülçimen ÇALIŞKAN
		3	ORTAOKUL ÇOCUKLARININ PSİKOLOJİK İYİ OLUŞLARININ ÇEŞİTLİ DEĞİŞKENLER AÇISINDAN İNCELENMESİ	Doç. Dr. Özlem GÖZÜN KAHRAMAN Uzm. Çocuk Gelişimci Ayşe KORKUT
		4	ORTAOKUL ÇOCUKLARININ MİZAH DUYGUSUNUN ÇEŞİTLİ DEĞİŞKENLER AÇISINDAN İNCELENMESİ	Doç. Dr. Özlem GÖZÜN KAHRAMAN Uzm. Çocuk Gelişimci Ayşe KORKUT
		5	FROM THE PERSPECTIVE OF HIGH SCHOOL STUDENTS “MY DREAM UNIVERSITY”	Prof. Dr. Ömay ÇOKLUK BÖKEOĞLU Assoc. Prof. Özge ALTINTAŞ Assoc. Prof. H. Deniz GÜLLEROĞLU
		6	EVALUATION OF A COMMON EXAMINATION APPLICATION CONSISTING OF OPEN-ENDED QUESTIONS BASED ON THE PERSPECTIVES OF HIGH SCHOOL STUDENTS	Assoc. Prof. Özge ALTINTAŞ Prof. Dr. Ömay ÇOKLUK BÖKEOĞLU Assoc. Prof. H. Deniz GÜLLEROĞLU
		7	FACTORS CONTRIBUTE TO MOTIVATION IN FOREIGN LANGUAGE LEARNING	Assist. Prof. Dr. Hülya KÜÇÜKOĞLU
		8	SIGNIFICANCE OF LEARNING STRATEGIES IN LANGUAGE CLASSROOMS	Assist. Prof. Dr. Hülya KÜÇÜKOĞLU

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SALON 2	Doç.Dr., Mehmet Akif ŞEN	1	Bartın'da Yetişen Doğal Bitkilerin Kentin Mutfak Kültüründeki Yeri ve Önemi	Yüksek Lisans Öğrencisi, Ayşenur SEYİS
		2	TECHNOLOGICAL TRANSFORMATION IN THE FOOD AND BEVERAGE SECTOR: GASTRONOMY 4.0 ERA	Yüksek Lisans (Tezli) Öğrencisi, CİHAN DOĞAN
		3	EXAMINATION OF THE STUDIES ON THE VEGAN FOOD	Sema Nur ERİK Doç. Dr. Hatice PEKMEZ
		4	GASTRONOMİDE SÜPER GIDA OLARAK MİKRO FİLİZLER ÜZERİNE BİR DERLEME ÇALIŞMASI	Dilan İLHAN
		5	TURKISH VEGAN AND VEGETARIAN CUISINE	Sena KAPAKLI Hatice PEKMEZ
		6	A PHENOMIC RESEARCH ON THE PLACE OF PASTRY FOODS IN YALVAC GASTRONOMY TOURISM, BAKERIES PRODUCING DOUGHLESS	Dr. Öğretim Üyesi Gürkan KALKAN Araştırmacı Alime ATEŞ
		7	EVALUATION OF THE GEOGRAPHICAL INDICATION STATUS OF TRABZON'S TRADITIONAL TASTE BLACK CABBAGE SOUP	Doç.Dr., Mehmet Akif ŞEN

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SALON 3	İsmet Safa KAPLAN	1	PARTICIPATION DIFFICULTIES OF HIGH SCHOOL STUDENTS IN RECREATIONAL ACTIVITIES IN MUT DISTRICT OF MERSİN PROVINCE	Ayşe ASLAN Dr. Öğr. Üyesi Faruk GÜVEN
		2	THE EFFECTS OF ZUMBA AND PİLATES AS SPORTİVE RECREATION ACTIVITIES ON LIFE SATİSFACİON AND HAPPİNESS	Elif HALLİ Dr. Öğr. Üyesi Faruk GÜVEN
		3	Kredi ve Yurtlar Kurumundaki Kadın Öğrencilerin Spor Etkinliklerine Yönelimlerinin İncelenmesi	Sibel DOĞUÇ Doç. Dr. Oğuzhan ALTUNGÜL
		4	EXAMİNİNG THE STRUCTURE OF SPORTS FEDERATIONS İN TURKEY	Elanur AYAZ Doç. Dr. Şakir TÜFEKÇİ Doç. Dr. Yalın AYGÜN
		5	COMPARISON OF TURKİYE - USA - ENGLAND SPORTS MANAGEMENT STRUCTURES	Muhammed ÇERKES Şakir TÜFEKÇİ Yalın AYGÜN Tekra gönderecek
		6	ANALYSIS OF FREESTYLE SWIMMING PERFORMANCES IN THE OLYMPIC GAMES BY YEARS	İsmet Safa KAPLAN Doç. Dr. Mehmet İMAMOĞLU
		7	BIBLIOMETRIC ANALYSIS OF GRADUATE THESES RELATED TO SWIMMING AND RESPIRATION	İsmet Safa KAPLAN Doç. Dr. Mehmet İMAMOĞLU

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SALON 4	Öğr. Gör., Ayça MEZDE	1	ÇOCUK TÜKETİCİLERİN MİKRO ŞÖHRETLERE VE MARKALARA YÖNELİK TUTUMLARI: YOUTUBE ÇOCUK KANALLARI ÜZERİNE BİR İNCELEME	Elif Akkul Güven Prof. Dr. Ceyda Deneçli Arıbakan
		2	MARKA ARKETİPLERİ BAĞLAMINDA TÜRKİYE'DEKİ SANAL MARKET UYGULAMALARININ REKLAM FİMLERİNİN ÇÖZÜMLEMELERİ ÜZERİNE BİR ÇALIŞMA	Özlem Beykoz Assist. Prof. Dr. Üyesi Sezgi Turfanda
		3	UNLU MAMULLER VE PASTACILIK SEKTÖRÜNDE, İŞGÖRENLERİN İŞYERİ/İŞLETME DEĞİŞTİRME SIKLIĞI VE ÇALIŞANLARI BUNA İTEN NEDENLER: İZMİR ÖRNEĞİ	Osman OLĞAÇ Prof. Dr. Melike SAKİN YILMAZER
		4	HAVACILIK BÖLÜMÜ ÖĞRENCİLERİNİN HAVAYOLU TERCİHLERİNİ ETKİLEYEN FAKTÖRLERİN BELİRLENMESİ: KONYA İLİ KARŞILAŞTIRMALI ÖRNEĞİ	Öğr. Gör., Ayça MEZDE
		5	E-TİCARET SEKTÖRÜNDE LOJİSTİĞİN ÖNEMİ	Yüksek Lisans Öğrencisi, Mohanad A. Alhamid A. Alhussein Albojafar Dr. Öğr. Üyesi, Ömer Faruk ACAR
		6	TÜRK KOOPERATİFÇİLİĞİNDE İŞLETMECİLİK SORUNU VE ÇIKMAZI	Doç.Dr. Ertuğrul GÜREŞÇİ Dr.Öğr.Üyesi. Fatih ÇELİK
		7	A STUDY ON THE AWARENESS OF MANAGERS IN THE LOGISTICS SECTOR ABOUT THE EUROPEAN GREEN DEAL	Reşat Murat CİHAN Prof. Dr. Erkan ÖZDEMİR
		8	A RESEARCH ON DIGITAL MARKETING PRACTICES IN THE PHARMACEUTICAL INDUSTRY	Alparslan ZAMAN Prof. Dr. Erkan ÖZDEMİR



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SALON 5	Prof. Dr. Hasan Hüseyin Akkaş	1	KARABAĞ AZERBAJCANDIR	Fahmı BABAYEV
		2	Yabancı Askerî Eğitiminin Stratejik Boyutu: Amerika Birleşik Devletleri Örneği	Doktora Öğrencisi, Selçuk Cantürk
		3	AN EVALUATION OF THE INSTITUTIONAL STRUCTURES OF POLITICAL PARTIES FOR THEIR FINANCIAL AUDITS	Assoc. Prof. Dr. Fatih GÜLER
		4	LATEST DEVELOPMENTS REGARDING FINANCIAL AUDIT OF POLITICAL PARTIES IN GREECE	Assoc. Prof. Dr. Fatih GÜLER
		5	METaverse AS A NEW SPACE OF COMMUNICATION IN DIPLOMACY	Doç. Dr. Yiğit Anıl GÜZELİPEK
		6	THE ROLE AND IMPACT OF SOFT POWER ELEMENTS IN THE FORMATION OF SOUTH KOREA'S INTERNATIONAL IMAGE: K-DRAMA, K-POP AND K-FOOD	Yüksek Lisans Öğrencisi, Atife Özge ÖZTÜRK
		7	İNSAN HAKLARININ HALİ PÜR MELALİ	Prof. Dr. Hasan Hüseyin Akkaş

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SALON 6	Doç. Dr. Uğur Korkut PATA	1	2000 DÖNEMİ SONRASI EKONOMİK KRİZLERİN İŞÇİ SENDİKALARINA YANSIMALARI: İSTATİSTİKLER ÜZERİNE BİR ARAŞTIRMA	Yüksek Lisans Öğrencisi, Ceyda ORAS Doçent Doktor, Mehtap DEMİR
		2	ANALYZING THE STATIONARITY OF FISHING LOAD CAPACITY FACTOR: A CASE OF MINT COUNTRIES	Doç. Dr. Uğur Korkut PATA
		3	ARE ENVIRONMENTAL TECHNOLOGIES EFFECTIVE IN REDUCING CARBON EMISSIONS IN TÜRKİYE?	Doç. Dr. Uğur Korkut PATA
		4	ÜNİVERSİTE MEZUNLARININ NİTELİĞE BAĞLI YETERSİZ İSTİHDAMI: İŞGÜCÜ ARZ CEPHESİNDEN BİR ALAN ARAŞTIRMASI	Dr. Neslihan KILINÇ İrem Nur KARAÖZKÖK
		5	ASSESSING THE IMPACT OF GOVERNMENT CONSUMPTION EXPENDITURE ON PER CAPITA INCOME: AN ARDL APPROACH TO BURUNDI'S ECONOMY	Özgür Özaydın Can Apaydın
		6	GOVERNMENT EXPENDITURE and EMPLOYMENT DYNAMICS IN FRANCE: AN ARDL BOUNDS TESTING APPROACH	Özgür Özaydın Can Apaydın
		7	EVALUATION OF ECONOMIC FREEDOM LEVEL OF SOUTH AMERICA COUNTRIES IN TERMS OF ECONOMIC REGULATION INDICATORS BY CV AND CRADIS METHODS	Dr. Öğr. Üyesi Serdar YARLIKAŞ
		8	THE INNOVATION PERFORMANCE MEASUREMENT OF SOUTH AMERICA COUNTRIES: A CV-BASED CRADIS APPROACH	Dr. Öğr. Üyesi Serdar YARLIKAŞ

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SALON 7	Prof. Dr. Mikail BATU	1	TÜRK MEDYASINDA YER ALAN CİNAYET HABERLERİNİN AKTARIM YÖNTEMLERİNE DAİR BİR ELEŞTİRİ	Yüksek Lisans Öğrencisi Hazal YÜRÜKLÜ
		2	AK PARTİ SİYASAL REKLAMLARI RAPORU: 2023 CUMHURBAŞKANI SEÇİMLERİ ÖRNEĞİ	Doktora Öğrencisi, Hamide SARITAŞ
		3	INFLUENCERLARIN METAVERSE DENEYİMLERİNİ KEŞFETMEK: YOUTUBE ÖRNEĞİ	Dr, Hüseyin YAŞA Prof.Dr., Mikail BATU
		4	COVID-19 PANDEMİSİ SÜRECİNDE KURUMSAL ALGI OLUŞTURMAK	Selçuk SAĞLAM Prof. Dr. Mikail BATU
		5	KAĞIT KAPLANLAR: SLACKTIVİSİM AKIMININ INFLUENCER ÜZERİNDEN OKUNMASI	Dr. Öğr. Üyesi, Fikriye ÇELİK Doç. Dr., ÖMER AYDINLIOĞLU
		7	TÜRK DİZİLERİNDE TEMSİL PROBLEMİ.	Prof. Dr.Süleyman Doğan Rabia Çelik Doç. Dr. Reşit Çelik Prof. Dr. Mevlüde Canlıca
		8	EVALUATION OF BIBLIOMETRIC FEATURES OF INTERNATIONAL ARTICLES RELATED TO MARKETING EDUCATION	Dr. Öğr. Üyesi, Aysel KURNAZ

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SALON 8	Öğr. Gör. Dr. Emrah YILDIZ	1	EXAMINATION OF POSTGRADUATE THESES ON COST ANALYSIS IN THE HEALTH SECTOR IN TURKEY: A SYSTEMATIC REVIEW	Doktora Öğrencisi, Hicran YILDIZ Doktora Öğrencisi, Sibel UÇAR VATANSEVER
		2	EVALUATION OF HOSPITAL IMAGE PERCEPTION AMONG YOUTH	Doktora Öğrencisi, Hicran YILDIZ Doktora Öğrencisi, Sibel UÇAR VATANSEVER
		3	TAX OFFENSES AND MISDEMEANORS THAT CAN BE COMMITTED THROUGH PAYMENT RECORDING DEVICES IN FUEL DEALERSHIP SERVICES	Assoc. Prof. Abdullah ÖMERCİOĞLU Res. Asst. Alper TAŞAR
		4	IMPORTANCE LEVELS OF FINANCIAL RATES IN HEALTH SERVICES: PUBLIC AND PRIVATE SECTOR COMPARISON	Dr. Hakan GÜVENER Dr. Emine AYHAN
		5	ANALYSIS OF HOSPITAL SITE SELECTION CRITERIA: CASE OF GAZIANTEP PROVINCE	Dr. Hakan GÜVENER Dr. Emine AYHAN
		6	EFFECT OF REVALUATION ON FINANCIAL STATEMENTS: A SAMPLE APPLICATION	Doç. Dr. Hakkı KIYMIK Trainee Accountant, Gökhan DİNÇ
		7	A STUDY ON BLOCKCHAIN TECHNOLOGY IN SUPPLY CHAIN MANAGEMENT	Safia ABDIRAHMAN MOHAMED
		8	TÜRKİYE'DE YABANCI BANKALARIN PERFORMANSINI ETKİLEYEN FAKTÖRLER	Öğretim Görevlisi, Seyfettin Caner KUZUCU Öğretim Görevlisi, Serhat KURT
		9	VERGİ UYGULAMALARINDA ETKİNLİĞİN SAĞLANABİLMESİ AMACIYLA SGK BENZERİ BİR SİSTEM OLUŞTURMAK	Öğretim Görevlisi, Serhat KURT Öğretim Görevlisi, Seyfettin Caner KUZUCU
		10	REVIEW OF INDEPENDENT AUDIT FEES: A RESEARCH ON BORSA ISTANBUL COMPANIES	Öğr. Gör. Dr. Emrah YILDIZ

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SALON 9	Assis. Prof. Dr. Abdelsalam A. Ahmed	1	REAL-TIME RECOGNITION OF DYNAMIC HAND POSTURES ON A NEUROMORPHIC SYSTEM	Qian Liu, Steve Furber
		2	OPTIMAL PLANNING OF DISPATCHABLE DISTRIBUTED GENERATORS FOR POWER LOSS REDUCTION IN UNBALANCED DISTRIBUTION NETWORKS	Mahmoud M. Othman, Y. G. Hegazy, A. Y. Abdelaziz
		3	OPTIMAL ECONOMIC LOAD DISPATCH USING GENETIC ALGORITHMS	Assis. Prof. Dr. Vijay Kumar, Assis. Prof. Dr. Jagdev Singh, Dr. Yaduvir Singh, Sanjay Sood
		4	EMPIRICAL MODE DECOMPOSITION BASED MULTISCALE ANALYSIS OF PHYSIOLOGICAL SIGNAL	Young-Seok Choi
		5	EXPERIMENTAL IMPLEMENTATION OF MODEL PREDICTIVE CONTROL FOR PERMANENT MAGNET SYNCHRONOUS MOTOR	Assis. Prof. Dr. Abdelsalam A. Ahmed
		6	ANALYSIS OF DIRECT CURRENT MOTOR IN LABVIEW	E. Ramprasath, P. Manojkumar, P. Veena
		7	IMPROVEMENT OF VOLTAGE PROFILE OF GRID INTEGRATED WIND DISTRIBUTED GENERATION BY SVC	Fariba Shavakhi Zavareh, Hadi Fotoohabadi, Reza Sedaghati
		8	A SIMPLE ADAPTIVE ATOMIC DECOMPOSITION VOICE ACTIVITY DETECTOR IMPLEMENTED BY MATCHING PURSUIT	Thomas Bryan, Veton Kepuska, Ivica Kostanic

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SALON 10	Dimitar Karastoyanov,	1	IMPROVING PROTEIN-PROTEIN INTERACTION PREDICTION BY USING ENCODING STRATEGIES AND RANDOM INDICES	Assis. Prof. Dr. Essam Al-Daoud
		2	TEMPERATURE-DEPENDENT STRUCTURAL PERTURBATION OF TUNA MYOGLOBIN	Yoshihiro Ochiai
		3	AN INTELLIGENT SYSTEM FOR KNEE AND ANKLE REHABILITATION	Dimitar Karastoyanov, Vladimir Monov
		4	DESIGN THE BOWTIE ANTENNA FOR THE DETECTION OF THE TUMOR IN MICROWAVE TOMOGRAPHY	Assis. Prof. Dr. Muhammd Hassan Khalil, Xu Jiadong
		5	ON THE DESIGN OF SHAPE MEMORY ALLOY LOCKING MECHANISM: A NOVEL SOLUTION FOR LAPAROSCOPIC LIGATION PROCESS	Reza Yousefian, Michael A. Kia, Mehrdad Hosseini Zadeh
		6	WHY WE ARE TALLER IN THE MORNING THAN GOING TO BED AT NIGHT – AN IN VIVO AND IN VITRO STUDY	Assis. Prof. Dr. Harcharan Singh Ranu
		7	A USER - REQUIREMENTS APPROACH IN MEDICAL DEVICES MAINTENANCE SYSTEM DEVELOPMENT: A CASE STUDY FROM AN INDUSTRY PERSPECTIVE	Manar AlJazzazi, Mohammed Rawashdeh, Tariq Alshawaheen, Aktham Malkawi
		8	CHARACTERIZATION OF LUBRICITY OF MUCINS AT POLYMERIC SURFACES FOR BIOMEDICAL APPLICATIONS	Seunghwan Lee
		9	INFLUENCE OF MICROSTRUCTURAL FEATURES ON WEAR RESISTANCE OF BIOMEDICAL TITANIUM MATERIALS	Dr. Mohsin T. Mohammed, Zahid A. Khan, Arshad N. Siddiquee
		10	MIRNAS AS REGULATORS OF TUMOUR SUPPRESSOR EXPRESSION	Dr. Olga A. Berillo, Gaukhar K. Baidildinova, Anatoliy T. Ivashchenko

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SALON 11	Dr. Oscar Javier Romero Fonseca	1	CLİNICAL COMPARATIVE STUDY COMPARING EFFICACY OF INTRATHECAL FENTANYL AND MAGNESIUM AS AN ADJUVANT TO HYPERBARIC BUPIVACAINE IN MILD PRE-ECLAMPTIC PATIENTS UNDERGOING CAESAREAN SECTION	Sanchita B. Sarma M. P. Nath
		2	EFFECT OF MUSCLE ENERGY TECHNIQUE ON ANTERIOR PELVIC TILT IN LUMBAR SPONDYLOSIS PATIENTS	Dr. Enas Elsayed Abutaleb, Mohamed Taher Eldesoky, Shahenda Abd El Rasol
		3	THE OXIDATIVE DAMAGE MARKER FOR SODIUM FORMATE EXPOSURE ON LYMPHOCYTES	Assis. Prof. Dr. Malinee Pongsavee
		4	ASSOCIATION OF OVERWEIGHT AND OBESITY WITH BREAST CANCER	Amir Ghasemlouei, Alireza Khalaj
		5	EFFECTS OF SYNCHRONOUS MUSIC ON GYMNASTICS' MOTOR SKILLS PERFORMANCE AMONG UNDERGRADUATE FEMALE STUDENTS IN PHYSICAL EDUCATION COLLEGE	Assis. Prof. Dr. Sanaa Ali Ahmed Alrashid
		6	INFLUENCE OF BILATERAL AND UNILATERAL FLATFOOT ON PELVIC ALIGNMENT	Mohamed Taher Eldesoky, Enas Elsayed Abutaleb
		7	PROTECTIVE EFFECT OF L-CARNITINE AGAINST GENTAMICIN-INDUCED NEPHROTOXICITY IN RATS	Mohamed F. Ahmed, Mabruka S. Elashheh, Fatma M. Ben Rabha
		8	BODY COMPOSITION ANALYSIS OF UNIVERSITY STUDENTS BY ANTHROPOMETRY AND BIOELECTRICAL IMPEDANCE ANALYSIS	Phd. Can. Vinti Davar
		9	PHthalate EXPOSURE AMONG ROMA POPULATION IN SLOVAKIA	Miroslava Šidlovská Ida Petrovičová Tomáš Pilka Branislav Kolena

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SALON 12	Dr. Mina Mehani,	1	NEUROGENIC POTENTIAL OF CLITORIA TERNATEA AQUEOUS ROOT EXTRACT–A BASIS FOR ENHANCING LEARNING AND MEMORY	Assis. Prof. Dr. Kiranmai S.Rai
		2	COMPARISON BETWEEN ANTIBACTERIAL EFFECTS OF ETHANOLIC AND ISOPROPYL: HEXAN (7:3) EXTRACTS OF ZINGIBER OFFICINALE ROSE	Tahereh Naji Mahsa Jassemi
		3	MAHMOOD AHMAD, GHULAM MURTAZA, SONIA KHILJEE, MUHAMMAD ASADULLAH MADNI	Mahmood Ahmad Ghulam Murtaza Sonia Khiljee Muhammad Asadullah Madni
		4	IN VITRO ANTI-TUBERCULAR SCREENING OF NEWLY SYNTHESIZED BENZIMIDAZOLE DERIVATIVES	Assoc. Prof. M. Shahar Yar M. Mustaqeem Abdullah, Jaseela Majeed
		5	FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS	Sanae Kaewnopparat, Nattha Kaewnopparat
		6	PENTACHLOROPHENOL REMOVAL VIA ADSORPTION AND BIODEGRADATION	Rakmi Abd.-Rahman Nurina Anuar
		7	PACKAGING THE ALKALOIDS OF CINCHONA BARK IN COMBINATION WITH ETOPOSIDE IN POLYMERIC MICELLES NANOPARTICLES	Diky Mudhakir Satrialdi, Sukmadjaja Asyarie, Yeyet C. Sumirtapura
		8	COMPARATIVE EVALUATION OF THE BIOPHARMACEUTICAL AND CHEMICAL EQUIVALENCE OF THE SOME COMMERCIAL BRANDS OF PARACETAMOL TABLETS	Dr. Raniah Al-Shalabi, Omaima Al- Gohary, Dr. Samar Afify Eram Eltahir
		9	DATA MINING CLASSIFICATION METHODS APPLIED IN DRUG DESIGN	Mária Stachová Lukáš Sobišek
		10	SALBUTAMOL SULPHATE-ETHYLCELLULOSE TABLETTED MICROCAPSULES: PHARMACOKINETIC STUDY USING CONVOLUTION APPROACH	Ghulam Murtaza Kalsoom Farzana



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		2	CONCEPTUAL DESIGN OF AN AIRFOIL WITH TEMPERATURE-RESPONSIVE POLYMER	Mohammed Niyasdeen Nejaamtheen
		3	CONCENTRATED SOLAR POWER UTILIZATION IN SPACE VEHICLES PROPULSION AND POWER GENERATION	Maged A. Mossallam
		4	OPTIMIZATION OF MULTIFUNCTIONAL BATTERY STRUCTURES FOR MARS	Assis. Prof. Dr. James A Foster Guglielmo S Aglietti
		5	MODELING AND CONTROL OF A QUADROTOR UAV WITH AERODYNAMIC CONCEPTS	Dr. Wei Dong, Assis. Prof. Dr. Guo-Ying Gu Xiangyang Zhu Han Ding
		6	TOPOLOGY OPTIMIZATION OF AIRCRAFT FUSELAGE STRUCTURE	Assis. Prof. Dr. Muniyasamy Kalanchiam, Baskar Mannai
		7	TERRAIN EVALUATION METHOD FOR HEXAPOD ROBOT	Tomas Luneckas Dainius Udris
		8	SMALL SATELLITE MODELLING AND ATTITUDE CONTROL USING FUZZY LOGIC	Amirhossein Asadabadi, Amir Anvar
		9	ADVANTAGES OF COMPOSITE MATERIALS IN AIRCRAFT STRUCTURES	Prof. Dr. Muniyasamy Kalanchiam, Moorthy Chinnasamy
		10	CHARACTERIZATION OF ELECTROHYDRODYNAMIC FORCE ON DIELECTRIC-BARRIER-DISCHARGE PLASMA ACTUATOR USING FLUID SIMULATION	Assis. Prof. Dr. Hiroyuki Nishida Taku Nonomura Takashi Abe

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SALON 14	Assis. Prof. Dr. Alaaddin Cerit	1	ONE-POT FACILE SYNTHESIS OF N-DOPED GRAPHENE SYNTHESIZED FROM PARAPHENYLENEDIAMINE AS METAL-FREE CATALYSTS FOR THE OXYGEN REDUCTION USED FOR ALKALINE FUEL CELLS	Leila Samiee Amir Yadegari Saeedeh Tasharofi
		2	MATERIAL SELECTION FOR FOOTWEAR INSOLE USING ANALYTICAL HIERARCHICAL PROCESS	Assis. Prof. Dr. Mohammed A. Almomani, Dr. Dina W. Al-Qudah
		3	EFFECTS OF TEST ENVIRONMENT ON THE SLIDING WEAR BEHAVIOUR OF CAST IRON, ZINC-ALUMINIUM ALLOY AND ITS COMPOSITE	Mohammad M. Khan Gajendra Dixit
		4	PREDICTION OF CUTTING TOOL LIFE IN DRILLING OF REINFORCED ALUMINUM ALLOY COMPOSITE USING A FUZZY METHOD	Assis. Prof. Dr. Mohammed T. Hayajneh
		5	MATERIAL SELECTION FOR A MANUAL WINCH ROPE DRUM	Moses F. Oduori Enoch K. Musyoka Thomas O. Mbuya
		6	UV-CURED COATINGS BASED ON ACRYLATED EPOXIDIZED SOYBEAN OIL AND EPOXY CARBOXYLATE	Assis. Prof. Dr. Alaaddin Cerit Assis. Prof. Dr. Suheyla Kocaman Assoc. Dr. Ulku Soydal
		7	EXPERIMENTAL INVESTIGATION ON OVER-CUT IN ULTRASONIC MACHINING OF WC-CO COMPOSITE	Assis. Prof. Dr. Ravinder Kataria Assis. Prof. Dr. Jatinder Kumar B. S. Pabla
		8	INFLUENCE OF MILLED WASTE GLASS TO CLAY CERAMIC FOAM PROPERTIES MADE BY DIRECT FOAMING ROUTE	A. Shishkin V. Mironovs D. Goljandin A. Korjakins
		9	RELATING INTERFACE PROPERTIES WITH CRACK PROPAGATION IN COMPOSITE LAMINATES	Tao Qu Assis. Prof. Dr. Chandra Prakash Vikas Tomar
		10	INDUCTION MELTING AS A FABRICATION ROUTE FOR ALUMINUM-CARBON NANOTUBES NANOCOMPOSITE	Muhammad Shahid, Muhammad Mansoor

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		2	THE IMPACT OF STAKEHOLDER COMMUNICATION STRATEGIES ON CONSUMERS- ACCEPTANCE AND FINANCIAL PERFORMANCE: IN THE CASE OF FERTILIZER INDUSTRY IN MALAYSIA	Hasnida Abdul Wahab Shahrina Md Nordin Lai Fong Woon Hasrina Mustafa
		3	ANALYSIS OF RUBBER WASTE UTILIZATION AT PANDORA PRODUCTION COMPANY LIMITED	S. Pechpoothong M. Kopystecki
		4	COMBATING MONEY LAUNDERING IN THE BANKING INDUSTRY: MALAYSIAN EXPERIENCE	Aspalella A. Rahman
		5	HYBRID ENERGY SUPPLY WITH DOMINANTLY RENEWABLE OPTION FOR SMALL INDUSTRIAL COMPLEX	Tomislav Stambolic, Anton Causevski
		6	A STATISTICAL PREDICTION OF LIKELY DISTRESS IN NIGERIA BANKING SECTOR USING A NEURAL NETWORK APPROACH	Prof. Dr. D. A. Farinde
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SALON 16	Assis. Prof. Dr. Chris Schrödl	1	DEVELOPMENT OF MOLECULAR IMPRINTED POLYMERS (MIPS) FOR THE SELECTIVE REMOVAL OF CARBAMAZEPINE FROM AQUEOUS SOLUTION	Bianca Schweiger, Lucile Bahnweg, Barbara Palm, Ute Steinfeld
		2	PENTACHLOROPHENOL REMOVAL VIA ADSORPTION AND BIODEGRADATION	Assis. Prof. Dr. Rakmi Abd.-Rahman Assis. Prof. Dr. Nurina Anuar
		3	FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS	Sanae Kaewnopparat Nattha Kaewnopparat
		4	ASAD ULLAH MADNI, MAHMOOD AHMAD, NAVEED AKHTAR, MUHAMMAD USMAN	Asad Ullah Madni Mahmood Ahmad, Naveed Akhtar, Muhammad Usman
		5	SERİCİN FİLM: INFLUENCE OF CONCENTRATION ON İTS PHYSICAL PROPERTIES	N. Namviriyachote N. Bang, P. Aramwit
		6	VALIDATION AND APPLICATION OF A NEW OPTIMIZED RP-HPLC-FLUORESCENT DETECTION METHOD FOR NORFLOXACIN	Mahmood Ahmad Ghulam Murtaza Sonia Khiljee Muhammad Asadullah Madni
		7	ANTIBACTERIAL CAPACITY OF PLUMERIA ALBA PETALS	Assis. Prof. Dr. M. H. Syakira Dr. L. Brenda
		8	PROACTIVE IDENTIFICATION OF FALSE ALERT FOR DRUG-DRUG INTERACTION	Hsuan-Chia Yang, Yan-Jhih Haung, Yu-Chuan Li
		9	COMPARISON BETWEEN ANTIBACTERIAL EFFECTS OF ETHANOLIC AND ISOPROPYL: HEXAN (7:3) EXTRACTS OF ZINGIBER OFFICINALE ROSE	Tahereh Naji Mahsa Jassemi

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December 15 - 17, 2023**

**Konya**

Salon / Hall	Oturum Başkanı / Session		Eser Adı / Art Work	Artist	Tema / Theme
		1	İsimsiz	Ahmet DALKIRAN	
		2	İsimsiz	Ahmet DALKIRAN	
		3	sessiz tanklar 2	Ali KAYA	
		4	Needles on Skin	Alara Nur KESKİN	
		5	Denim	Arzu BOR KOCAMAN	
		6	Gelincikler	Aysel Sevgi ÖZTEN	
		7	GÖLGELER/Shadows	Ayşegül PARALI	
		8	İsimsiz/Untitled	Ayşe EKİCİ	
		9	Kubbe	Ayşenur KANDEMİR	
		10	Yaşam	Bahar YILDIZ	
		11	Kök Salma (Take Root)	Bengü Batu Ertung	
		12	Yaşama Dair	Birgül ÇAKIROĞLU	
		13	Öze Doğru Giderken	Birgül ÇAKIROĞLU	
		14	“Nevbahar-Nefes” /”Spring-Breath”	Cantürk ÖZ	
		15	ARMONİ / HARMONY	Dilek AKDEMİR	
		16	Dört	Ebru KÖSE	

17	Cennet Avı Ceylanlı	Ezgi ÖRGEN
18	Umut	Ezgi ÖRGEN
19	Ritim	Elif Aksoy
20	İsimsiz	Elif Aksoy
21	makam-1 merkad	Fazilet Özdemir
22	Kuşlar	Gülten GÜLTEPE
23	Su-izi 4	Hamide Soysal Demirci
24	Modernize	Halide AKKUŞ
25	Figür: 01 / Figure: 01	Haydar TAŞÇILAR
26	Figür: 02 / Figure: 02	Haydar TAŞÇILAR
27	manzara	Hatice Nilüfer Süzen
28	Yanılgı / Misconception	Hanife GÜNEŞ YARMACI
29	Algı/ Perception	Hanife GÜNEŞ YARMACI
30	İsimsiz / Untitled	Huriye DALKIRAN
31	RUTİN	Hakan AŞKAN
32	ÇABA	Hakan AŞKAN
33	Halıda Mimari Esintiler/Geometri on Carpet	İzzet ZORLU
	Digital Collage	İbrahim KORKMAZ
	Circle II	İbrahim KORKMAZ

34	DYSMORPHIA	Kemal ÖZPINAR
35	SESİMİ DUYAN VAR MI?	Kemal ÖZPINAR
36	Yalın / Simple	Mine ERDEM KÖROĞLU
37	DÖNGÜ / LOOP	Nursen GEYİK DEĞERLİ
38	Latif	Nermin ÖZCAN ÖZER
39	Kıvrım	Nermin ÖZCAN ÖZER
40	bakıştan sonsuzluğuna	Reyhan Akat
41	sakince yolculuk	Reyhan Akat
42	GIYGAŞUK	Onur GERÇEKÇİ
43	KOLEKTİF	Onur GERÇEKÇİ
44	Seyr-i Süluk (Tesbihlik)	Selin Gençtürk
45	Klasik hatayı	SERAP YILDIRIM GEREN
46	GÜNEŞ	ŞERİFE DOĞAN
47	My Family	Şengül EROL
48	Güz	Şengül EROL
49	Çorak Topraklar	Tolga Gürocak
50	“Visible”	Turgut KALAY
51	İsimsiz	Uğur Günay Yavuz
52	“Mor”/ “Purple”	Valide PAŞAYEVA
53	Suskun / speechless	Yüksel TOK
54	Ya Fettah	Yeşim AKSOY ŞAŞTIM
55	İpek Yolu	Yeşim AKSOY ŞAŞTIM

56	“Bilinmeyen”/ “Unknown”	Yelda USAL
57	“İdrak”/ “Perception”	Yelda USAL
58	İsimsiz / No Name	Zümrüt ŞEN
59	Hamdım,Piştım,Yandım.	Arş.Gör. Büşra TÜRKÖZ
60	Gölgedeki Bilim Kadınları	Dr. Öğretim Üyesi Havva Sibel KURT
	Kişisel Sergi	
	Kamusal sanat ve kent	Dr. Bengi Polat





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ATATÜRK ÜNİVERSİTESİ REKTÖRLÜĞÜ  
Veteriner Fakültesi Dekanlığı



Sayı : E-36643897-000-2300315795  
Konu : Görevlendirilme.

05.10.2023

KLİNİK BİLİMLER BÖLÜMÜ BAŞKANLIĞINA

İlgi : 04.10.2023 tarihli ve E-36643897-000-2300313904 sayılı belge.

İlgide kayıtlı yazıda belirtildiği üzere, Bölümünüz Veterinerlik İç Hastalıkları Anabilim Dalı öğretim üyelerinden Prof. Dr. Başak HANEDAN'ın, "Academy Global Conferences & Publishing tarafından önümüzdeki tarihlerde düzenlenecek olan uluslararası kongrelerde; kongre başkanı, kongre düzenleme ve bilim kurulu üyesi olarak görevlendirilmesi Dekanlığımızca uygun görülmüştür.

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Do rulama Kodu: c147f559-545f-45be-8400-8ecc2b215b38  
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## A SCENARIO-BASED SOLUTION APPROACH FOR A STOCHASTIC CAPACITATED LOT SIZING PROBLEM WITH LIMITED INVENTORY

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### ABSTRACT

In this study, we consider a capacitated lot sizing problem with limited inventory where both production and setup times are stochastic following a given probability distribution. In this problem setting, a single capacitated machine being able to produce several different items in each time period is used to meet customers' demands. The capacity of the machine is consumed both by production and by setup operations. It is assumed that the machine can be used beyond its capacity if it is needed, and the excess usage leads to overtime and related costs. Additionally, the level of the inventory at the end of each time period is assumed to be bounded due to the limited storage capacity of the warehouse. The objective of the problem is to minimize the total cost including two main components that are the regular production costs and the expected overtime costs. This problem is formulated as a two-stage stochastic programming with recourse (overtime) decisions. We propose an effective solution approach based on solving the stochastic programming model with a set of sample scenarios. The computational experiments are conducted on well-known problem instances and comprehensive analyses are provided. Results show that the developed approach is quite effective to obtain very good solutions to be performed in real-life settings.

**Keywords:** Production and Inventory Systems, Stochastic Programming, Scenario-Based Solution Approach.

## MANN-KENDALL VE YENİLİKÇİ ŞEN TREND ANALİZİ İLE METEOROLOJİK KURAKLIK ANALİZİ

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### ÖZET

Bu çalışmada, ilk olarak Adıyaman ve Şanlıurfa illerinde, 1982-2023 su yıllarına ait Standart Yağış İndeksi (SYİ) değerlerini analiz etmek amacıyla 3-, 6-, 9- ve 12- aylık periyotlarda meteorolojik kuraklık analizleri gerçekleştirilmiştir. Adıyaman'ın iklimsel özellikleri incelendiğinde, 3- ve 6- aylık periyotlarda minimum kuraklık değerlerinin sırasıyla -2,78 ve -2,97 olduğu belirlenmiştir. Bu dönem içerisinde, 1989 yılı eylül ayı, Adıyaman ilinin en kurak dönemi olarak öne çıkmıştır. Şanlıurfa'da ise 3-aylık minimum SYİ değeri -2,44, 6- aylık periyotta ise -2,97 olarak kaydedilmiştir. Çalışmanın diğer aşamasında, Adıyaman ve Şanlıurfa illerindeki kuraklık durumları, Mann-Kendall (M-K) ve Yenilikçi Şen (YŞ) trend analizleriyle değerlendirilmiştir. Her iki analiz de 3-, 6-, 9- ve 12- aylık SYİ değerlerinde belirgin bir artış eğilimini ortaya koymuştur. Bu sonuçlar, Adıyaman ve Şanlıurfa illerindeki kuraklık riskinin zamanla arttığını göstermekte olup, iklim değişikliği etkilerinin bölgede giderek daha belirgin hale geldiğini düşündürmektedir.

**Anahtar Kelimeler:** Standart yağış indisi, Yenilikçi şen trend analizi, Mann-Kendall test, Adıyaman, Şanlıurfa

## Yb-BAZLI YARI HEUSLER ALAŞIMININ YAPISAL, ELEKTRONİK, MEKANİK VE FONON SPEKTRUM ÖZELLİKLERİNİN TEORİK OLARAK İNCELENMESİ

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### ÖZET

Bu çalışma kapsamında, kübik F-43m uzay grubunda kristelleşen YbPdBi yarı-Heuslerinin yapısal, elektronik, fonon spektrum ve mekanik gibi temel fiziksel özellikleri ilk prensip hesaplamalardan olan Quantum-Espresso paket programı yardımıyla ve yoğunluk fonksiyonel teorisi çerçevesinde düzlem dalga psödopotansiyel yöntemiyle hesaplandı. Bu çalışmada gerçekleştirilen hesaplamaların tümünde değiş-tokuş korelasyon enerjisi için Perdew-Burke-Ernzerhof (PBE) ve genelleştirilmiş eğim yaklaşımı (GGA) kullanıldı. Bu yarı-Heusler bileşiğinin Y1, Y2 ve Y3 yapısal fazları için çizdirilen toplam enerji değerlerine göre hacim değerleri Birch-Murnaghan durum denkleminde fit edilerek, çalışılan bileşiğin tüm fazları için örgü sabitleri ( $a_0$ ), Bulk modülleri (B) ve Bulk modüllerinin basınca göre birinci türevleri (B') hesaplanmıştır. Bu üç eğriden en düşük toplam enerjiye sahip Y3-fazı olduğundan bu bileşiğin en kararlı fazının olduğu tespit edilmiştir. YbPdBi'nin Y3 fazı için hesaplanan örgü sabiti literatürdeki deneysel veri ile oldukça uyumlu olduğu görüldü. YbPdBi yarı-Heusler bileşiğinin Y3-fazı için yüksek simetri yönleri boyunca çizdirilen elektronik bant yapı grafiğinden malzemenin Fermi Enerji seviyesinde sürekli değere sahip olmasından ötürü elektriksel açıdan metalik karakter sergilediği görülmüştür. Y3 yapısal fazında hesaplanan elastik sabitler Born kararlılık şartlarına uyduğundan YbPdBi yarı-Heusler bileşiğinin bu fazda elastik olarak kararlıdır. Y1 ve Y2 fazları bu şartlara uymadığından elastik olarak kararsız oldukları söylenebilir. Ayrıca, Bulk modülü (B), Shear modülü (G), Young modülü (E), Pugh oranı (B/G) ve Poisson oranı ( $\nu$ ) gibi mekanik özellikler hesaplanan elastik sabitlerden türetilmiştir. Son olarak, bu bileşik için gerçekleştirilen fonon bant yapısı hesaplamalarından dinamik olarak kararlı olduğu bulunmuştur.

**Anahtar Kelimeler:** Yarı-Heusler, DFT, Mekanik Özellikler, Elektronik Band Yapısı.

## TAM HEUSLER $\text{Li}_2\text{MgSb}$ BİLEŞİĞİNİN TEMEL FİZİKSEL ÖZELLİKLERİ ÜZERİNE İLK PRENSİPLER ÇALIŞMASI

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### ÖZET

$\text{Li}_2\text{MgSb}$  Heusler bileşiğinin yapısal, elektronik ve elastik özellikleri yoğunluk fonksiyonel teorisine dayalı birinci prensip hesaplamaları kullanılarak incelenmiştir.  $L2_1$  tipi ( $\text{Cu}_2\text{MnAl}$ ) yapının daha düşük toplam enerjiye sahip olmasından dolayı XA tipine ( $\text{Hg}_2\text{CuTi}$ ) göre yapısal açıdan daha kararlı olduğu bulunmuştur. Bu bileşiğin optimize edilmiş örgü sabitleri ve Bulk modülü değerleri sırasıyla Fm-3m fazı için 6,748 Å; F-43m fazı için 6,880 Å'dur. Oluşum enerjisi hesaplamaları ile bileşiğin hem termodinamik stabilitesi hem de en kararlı faz durumları irdelenmiştir.  $L2_1$  tipi  $\text{Li}_2\text{MgSb}$  için optimize edilmiş örgü sabitleri kullanılarak zor-zorlanma yaklaşımı ile gerçekleştirilen hesaplamalardan  $C_{11}$ ,  $C_{12}$  ve  $C_{44}$  kübik elastik sabitler tahmin edilmiş ve daha sonra da bu değerler kullanılarak Bulk modülü, Shear modülü, Young modülü, Poisson oranı, Debye sıcaklığı ve erime sıcaklıkları elde edilmiştir. Bunun yanı sıra  $\text{Li}_2\text{MgSb}$  Heusler bileşiğinin gevrek/sünek yapısı ve izotropik/anizotropik davranışları incelenmiştir. B/G oranını analiz ederek, bu malzemenin sünek yapıda olduğu sonucuna varılmıştır. Alaşımın elektronik özellikleri üzerine yapılan hesaplamaların sonuçlarına göre, Fermi seviyesinde iletim ve valans bandı arasındaki çakışma nedeniyle metalik karaktere sahip oldukları açıkça görülmektedir. Sonuçlar, incelenen malzemenin yüksek sıcaklık uygulamaları için umut verici bir aday olduğunu göstermektedir.

**Anahtar Kelimeler:** Yarı-Heusler, DFT, Mekanik Özellikler, Elektronik Band Yapısı.

## A NOVEL FLEXIBLE ELECTROCHEMICAL SENSOR FOR *ESCHERICHIA COLI* PATHOGEN DETECTION

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### ABSTRACT

A foodborne pathogen, *Escherichia coli*, can cause serious health issues causing public safety challenges, and can cause troubles in livestock. In addition, it poses a threat of outbreak with a substantial economic loss. Thus, it is a necessity to detect this pathogen. Herein, we present the development of rapid, low-cost, sensitive, flexible, and robust sensors consisting of ZIF-67/holey MWCNT-based hybrids for the detection of *Escherichia coli* pathogen detection. The sensors were fabricated via a facile inkjet printing method on flexible polymeric substrates. The performance of the sensors was evaluated using cyclic voltammetry (CV) and differential pulse voltammetry (DPV) methods. The EDC-NHS conjugation protocol is applied to immobilize the sensor surface.

**Keywords:** Biosensor, inkjet printing, metal-organic framework, holey MWCNT, electrochemical sensor, *Escherichia coli*.

## ÇİMENTOLU HARÇLARDA OLİVİN ATIĞI KULLANILMASININ FİZİKSEL VE MEKANİK ÖZELLİKLER ÜZERİNE ETKİLERİ<sup>1</sup>

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### ÖZET

Bu çalışmada; olivin atığının farklı oranlarda kullanımı ile çimento harçlarının mekanik ve fiziksel özelliklerindeki değişimin incelenmesi amaçlanmıştır. Öncelikle; agrega olarak silis kumu, CEM I 52,5 R beyaz portland çimentosu içeren referans numunesi üretilmiştir. Sonrasında ise silis kumu ile ikameli olarak %25, %50 ve %100 oranlarında olivin atığı içeren karışımlar üretilmiştir. Bu numuneler, 40\*40\*160 mm ölçülerinde prizma şeklinde kalıplara dökülmüştür. Üretilen harç karışımlarında sabit kıvam sağlamak için yayılma tablası deneyine tabi tutularak karışım suyu oranları belirlenmiştir. Kalıplara dökülen harç örnekleri 24 saat süreyle priz alması için bekletilmiştir. Harçlar prizini aldıktan sonra kalıplardan çıkarılarak, kür havuzuna konulmuş ve 7,14 ve 28 gün süre ile suda kürlenmiştir. 7., 14. ve 28. günlerde kürden alınan numuneler üzerinde yoğunluk, boşluk oranı tayini ve ultrases geçiş hızı deneyleri gerçekleştirilmiştir. Ayrıca numuneler üzerinde eğilme dayanımı ve basınç dayanımı deneyleri yapılmıştır. Farklı oranlarda olivin ikame edilen numuneler ile referans numune sonuçları istatistiksel yöntemler kullanılarak karşılaştırılmıştır. Sonuç olarak; olivin ikamesinin çimento harçlarının mekanik ve fiziksel özelliklerini önemli miktarda etkilediği tespit edilmiştir.

**Anahtar Kelimeler :** Olivin Atığı, çimento harcı, basınç dayanımı, fiziksel özellik

<sup>1</sup> Bu çalışma 2022.06.08.1334 numaralı Düzce Üniversitesi BAP projesi tarafından desteklenmiştir.



## DISTRIBUTION HIERARCHY OF LEGAL PERSON AND REAL PERSON PLOTS AT THE PARCELATION PHASE

### TÜZEL KİŞİ İLE GERÇEK KİŞİ PARSELLERİNİN PARSELASYON AŞAMASINDAKİ DAĞITIM HİYERARŞİSİ

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#### Abstract

When the lands are examined, they are seen as immovable properties, the vast majority of which are registered as either citizens or institutions. Lands registered in the name of citizens are called real persons, and lands registered in the name of institutions are called legal entities. These types of land pieces must be processed in order to be in a position to obtain a construction permit. The most comprehensive zoning application process to be carried out is the land and land arrangement. In this context, the study examined how the land registered in the names of these two types of owners would be distributed, with or without shares, and according to which transaction priority they could be given from where to where. At this stage, which of the legal and real person lands will be used as shifting, and the subdivision stage that may occur in favor of the citizen or against the institution, are examined.

**Keywords:** Legal Entity, Real Person, Parcelation

#### Özet

Araziler incelendiğinde malik olarak ya vatandaş ya da kurumlar üzerine büyük çoğunluğu kayıtlı taşınmazlar olarak görülür. Vatandaş adına kayıtlı araziler gerçek kişilik, kurum adına kayıtlı araziler ise tüzel kişilik olarak adlandırılır. Bu tip arazi parçaları inşaat izni alabilecek konuma gelecek şekilde olabilmesi için işlem görmesi gerekir. Yapılacak en kapsamlı imar uygulaması işlemi ise arsa ve arazi düzenlemesidir. Bu kapsamda çalışmada, parselasyon yapılırken bu iki tip malik adına kayıtlı arazilerin dağıtımının nasıl hisseli ya da hissesiz olacağı, nereden nereye hangi işlem önceliğine göre verilebileceği bakılmıştır. Tüzel ile gerçek kişi arazilerin bu aşamada kaydırma olarak hangisinin kullanılacağı, vatandaş lehine ya da kurum aleyhine oluşabilecek parselasyon aşaması incelenmiştir.

**Anahtar Kelimeler:** Tüzel Kişilik, Gerçek Kişilik, Parselasyon

## GÖZENEKLİ YAPILARDA DOLGU MALZEMESİ KULLANIMININ MEKANİK ÖZELLİKLERE ETKİSİNİN İNCELENMESİ

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### ÖZET

Gözenekli yapılar hafiflik, iyi ısı transferi ve mekanik özellikler sayesinde günümüzde yaygın olarak kullanılmaya başlanmıştır. Özellikle yük altında gösterdikleri farklı deformasyon davranışları nedeni ile farklı gözenekli yapılar farklı kullanım alanlarında tercih edilmektedir. Ancak meydana gelen ani çökme, kayma bandı oluşumu gibi deformasyon davranışları gözenekli yapılarda farklı dolgu malzemesi kullanılarak belli oranlarda iyileştirilebilmektedir. Bu çalışmada kafes yapılarında nispi yoğunluk değişimi ile birlikte dolgu malzemesi kullanımının mekanik özellikler üzerindeki etkilerinin araştırılması amaçlanmıştır. Bu bağlamda % 20, % 30 ve % 40 nispi yoğunlukta dolgu malzemesi ve dolgu malzemesiz olacak görselde 6 adet ilkel kafes yapısı üretilmiştir. Her bir kafes yapısında gözeneklerin içini tamamen kapatacak görselde silikon dolgu malzemesi enjekte edilmiştir. Tüm numunelere tek eksenli basma testleri uygulanmış ve gerilim-gerinim eğrileri elde edilmiştir. Elde edilen sonuçlara göre nispi yoğunluğun artması ile birlikte elastik modül ve akma dayanımının arttığı tespit edilmiştir. Dolgu malzemesi kullanılan kafes yapılarında ise nispi yoğunluğun artışının elastik modül ve akma dayanımı üzerinde olumlu etkileri olduğu görülmüştür. Hem dolgu malzemesiz hem de dolgu malzemeli kafes yapıları karşılaştırıldığında özellikle plastik deformasyon bölgesinde gerilme değerlerinde belirgin farkla gözlemlenmiştir. Dolgu malzemesi kullanılan kafes yapılarında gerilme plastik bölgede ani artış ve azalış davranışı göstermezken, dolgu malzemesiz kafes yapılarında ani artış ve azalış şeklinde bir davranış göstermiştir

**Anahtar Kelimeler :** Gözenekli yapılar, dolgu malzemesi, mekanik özellikler

## ADAPTIVE REUSE AND CULTURAL LANDSCAPE IN THE CASE OF SEDDÜLBAHİR CASTLE OPEN AIR MUSEUM

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### ABSTRACT

Multiple interpretations exist on the historical, cultural, and archaeological delineations of landscapes. Typically, cultural landscapes are concealed and situated inside the confines of diverse designated areas that are subject to special protection, such as reserves, sanctuaries, national parks, natural and culture monuments, and museum reserves. Typically, the territories that are proposed for designation as cultural landscapes of UNESCO World Heritage are already subject to protection within their respective countries. This recognition is based on the exceptional natural and cultural worth attributed to these areas. The primary focus of this research is to analyze the Seddülbahir Castle open-air museum, which is considered the most prominent historical rural cultural heritage component in Çanakkale, a region situated in western Turkey. The objective is to investigate its significance as a cultural landscape feature. The objective of this study is to examine the composition of cultural landscapes within the context of Seddülbahir Castle, which serves as an open-air museum located in the Çanakkale Wars Gallipoli Historic Site. The study aims to identify the unique characteristics and features that define the regional distinctiveness of this site. The study included graphic-analytical methodologies, retrospective analysis, landscape-visual analysis, and photographic recording techniques. The study highlighted several benefits that arose from the research, including the reinforcement of national identity, the promotion of local interests through cultural heritage, and the enhanced value derived from repurposing this ancient cultural structure as a tourist destination.

**Keywords:** Cultural Heritage, Cultural Landscape, Seddülbahir, Castle Museum.

## HAM VERMİKÜLİT İKAMELİ ÇİMENTO HARCININ YÜKSEK SICAKLIK PERFORMANSININ İNCELENMESİ

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### ÖZET

Portland Çimentosu üretiminde yaklaşık %8 oranında karbondioksit salımı yapılmaktadır. Bu oranın azaltılması amacıyla uçucu kül, silis dumanı, yüksek fırın cürufu, doğal puzolanlar gibi kaynaklar kullanılmaktadır. Ancak, bu malzemelerin kaynaklarının sınırlı olması nedeniyle CO<sub>2</sub> emisyonlarında önemli bir azalma sağlanamamıştır. Bu durum, yeni malzemeler ve yöntemlere yönelik arayışları artırmaktadır. Bu bağlamda, ham vermikülitin çimento takviyesi olarak potansiyel avantajlarını ve etkilerini değerlendiren araştırma eksikliği literatürdeki boşluğu ifade etmektedir. Bu çerçevede, ince öğütülmüş işlem görmemiş vermikülitin çimentolu kompozitlerde katkı olarak kullanılma potansiyeli üzerine durulması gerekmektedir. Bu çalışma, ham vermikülit ikameli çimento harcının yüksek sıcaklık performansını incelemeyi amaçlamaktadır. Çimento harçlarında ham vermikülit ikamesi olarak çimentonun ağırlıkça %2,5, %5, %7,5, %10'u oranları seçilmiştir. Numuneler 28 gün sonunda yüksek sıcaklıklara (200°C, 400°C ve 600°C) maruz bırakılarak kütle kaybı ve basınç dayanımlarındaki değişimler incelenmiştir. Deney sonuçları, farklı ham vermikülit oranlarının çimento harcının yüksek sıcaklık performansı üzerinde etkili olduğunu ortaya koymaktadır. Özellikle %5 oranındaki ham vermikülit içeren çimento harcının yüksek sıcaklık performansı açısından en iyi sonucu verdiği görülmüştür. Ancak, artan ham vermikülit oranının yüksek sıcaklık öncesi ve sonrası basınç dayanımında düşümlere yol açtığı tespit edilmiştir.

**Anahtar Kelimeler:** Ham vermikülit, çimento harcı, yüksek sıcaklık, basınç dayanımı

## EFFECT OF CALCINED BORON WASTE ADMIXTURE ON HIGH TEMPERATURE PERFORMANCE OF CONCRETE

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### ABSTRACT

This study evaluates the effect of certain proportions of calcined boron waste admixture in concrete mixtures on mechanical properties. Boron waste is a by-product of industrial processes and causes environmental problems in landfills. The aim of this study is to determine the effects of calcined boron waste in concrete on the performance of concrete. Calcined boron waste was added to concrete at 5%, 10% and 15% and compressive and flexural strength tests as well as compressive strength tests after high temperature (200 °C, 400 °C and 600 °C) were performed. Ultrasonic Pulse Velocity (UPWV) changes and mass losses before and after high temperature were also determined. The results obtained show that the low content of boron waste increases the compressive strength of concrete. Particularly, it was observed that 5% admixture positively affected the compressive strength of concrete. In conclusion, this study shows that the use of calcined boron waste in concrete mixtures at certain ratios can increase the mechanical strength of concrete and offer a more environmentally sustainable construction material alternative.

**Keywords:** Calcined boron waste, concrete, compressive strength, flexural strength

## KIRSAL YERLEŞMELERDE MİMARİ BOYUTUN İRDELENMESİ: ELEVİT-TROVİT YAYLALARI

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### ÖZET

Anadolu'da özellikle de Doğu Karadeniz Bölgesinde yaşamakta olan bir yayla kültürü bulunmaktadır. Bu yayla kültürü, yıllar boyu dağlık alanlardaki kırsal kesimde yaşamakta olan halkın yaşantısına renk katmıştır. Dinlenme, hayvancılık, sağlık gibi pek çok nedenden ötürü yaz aylarında yaylalara göç etmekte olan insanlar, buralarda mimariyi geliştirmiş ve yaşatmışlardır. Bu çalışmada, kırsal yerleşme dokusunun planlamasındaki, mimari boyutun irdelenmesi amaçlanmıştır. Çalışma kapsamında örnek alan olarak, Rize İli Çamlıhemşin İlçesindeki Elevit, Tirovit yaylaları yer almaktadır. Sonuçta yayla konutlarının kendilerine özgü mimari özelliklerini ve peyzajını bozmadan farklı işlevler yükleyerek yaşatılması ve gerektiğinde turizme kazandırılması, turizm potansiyelinin artmasına yardımcı olunması için yapılması gereken iyileştirme, koruma, yenileme önerileri ortaya konmaktadır.

**Anahtar Kelimeler:** Yayla, Geleneksel Mimari, kırsal konut, yerleşmeler, sürdürülebilirlik, Doğa Turizmi, Ekoloji

## FEKETE-SZEGÖ PROBLEM FOR A SUBCLASS OF ANALYTIC FUNCTIONS ASSOCIATED WITH VAN DER POL NUMBERS

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### ABSTRACT

In this presentation, we consider Fekete-Szegö problem on a new class of analytic functions associated with van der Pol numbers. Making use of the van der Pol numbers, we obtain the upper bound estimates for the initial Taylor-Maclaurin coefficients and also the Fekete-Szegö functional for functions in this class.

**Keywords :** Analytic, Fekete-Szegö problem, univalent, Van der Pol number.

**A NEW SUBCLASS OF BI-UNIVALENT FUNCTIONS  
CONNECTED WITH THE MILLER-ROSS-TYPE POISSON DISTRIBUTION  
RELATED TO GREGORY COEFFICIENTS**

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**ABSTRACT**

The Miller–Ross-type Poisson distribution is an important model for plenty of real-world applications. In this presentation, we introduce a new subclass of bi-univalent functions connected with Miller-Ross-type Poisson distribution related to Gregory coefficients. We obtain estimates on the first two Taylor-Maclaurin coefficients for functions in this class.

**Key words:** Gregory coefficient, bi-univalent function, analytic function, Miller-Ross function.



## LYRA TEORİDE BARROW HOLOGRAFİK KARANLIK ENERJİ MODELİNİN İNCELENMESİ

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### ÖZET

Son gözlemler ve çalışmalar, evrenin şu anda sadece genişlemekle kalmayıp aynı zamanda hızlandığını göstermektedir. Bu hızlanan genişlemeyi açıklamak için çeşitli alternatif kütle çekim teorileri önerilmiştir. Bunlardan bazıları  $f(R)$  teorisi,  $f(G)$  teorisi,  $f(Q)$  teorisi ve Lyra teorisidir. Evrenin hızlanarak genişlemesine karanlık enerji adı verilen bir enerjinin neden olduğu da düşünülmektedir. Son yıllarda Holografik Karanlık Enerji (HKE) modeli olarak adlandırılan ve holografik prensibe dayanan yeni bir karanlık enerji modeli önerilmiştir. Bu çalışmada, Barrow holografik karanlık enerjisinin homojen izotropik genel Friedmann-Robertson-Walker (FRW) evrenindeki davranışı, alternatif bir kütle çekim teorisi olan Lyra teorisi çerçevesinde incelenmiştir. Bu amaçla, Lyra teorisindeki alan denklemleri elde edilmiş ve doğrusal olarak değişen yavaşlama parametresi bu denklemlerin tam çözümünü elde etmek için kullanılmıştır. Durum denklemi parametresinin ve tüm fiziksel değişkenlerin zamana bağlı davranışları grafikler yardımıyla incelenmiştir.

**Anahtar Kelimeler :** Lyra Teori, Barrow Holografik Karanlık Enerji, FRW metriği.

## FRW EVRENİ İÇİN BARROW HOLOGRAFİK KARANLIK ENERJİ MODELİ

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### ÖZET

Modern kozmolojik kanıtlar ışığında evrenimizin ivmelenerek genişlediği görülmüştür. Bu olguya sebep olan olayın çözümü için en ideal adaylardan biri negatif basınçlı Karanlık Enerji modelleridir. Karanlık enerjinin doğası ve kozmolojik kökeni ise hala bir sır olarak karşımıza çıkmaktadır. Karanlık enerji olgusunu açıklamak için çeşitli modeller sunulmuştur. Bu çalışmada Barrow holografik karanlık enerjisinin homojen ve izotrop Friedmann-Robertson-Walker (FRW) evrenindeki davranışı Genel Rölativite Teorisi çerçevesinde incelenmiştir. Bu amaçla Einstein alan denklemleri elde edilmiş ve bu denklemlerin kesin çözümünü elde etmek için evrenin ivmelenip ivmelenmediğini gösteren parametrelerden biri olan frenleme parametresi kullanılmıştır. Durum denklemi ve frenleme parametresi yardımıyla sonuçlar elde edilmiş ve evren dinamiklerinin zamana bağlı davranışları grafikler yardımıyla araştırılmıştır.

**Anahtar Kelimeler :** Barrow Holografik Karanlık Enerji, Frenleme Parametresi, FRW uzay – zaman.

## APPROXIMATION BY A SEQUENCE OF OPERATORS DEFINED IN A MOBILE SQUARE DOMAIN

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### ABSTRACT

With the theorem put forward by K. Weierstrass in 1885, the doors of approximation theory were opened, on which not only today's mathematicians but also researchers in many fields have worked intensively. In the first later studies, efforts were made to search for a more effective and simpler proof of this theorem, which had a long and complex proof. Bernstein is one of the first researchers to work on this theorem. Later, Korovkin added a different dimension to the studies by proving a theorem named after him. This approach to continuous functions defined on a closed interval was carried to weighted spaces by Gadjiev. Another contribution of Gadjiev is his work on a useful operator that can be transformed into classical operators, later called the Gadjiev-Ibragimov operator. There are many different modifications in the literature that examine the Gadjiev Ibragimov operator from different perspectives.

Volkov's theorem is used to examine the approximation properties of operators in two-dimensional spaces. Volkov's theorem has been used to approximate functions of two variables that are closed and continuous on a finite interval and bounded on the whole real axis.

In this study, the important approximation properties will be examined by defining the two-variable modification of a univariate Gadjiev Ibragimov type operator defined in a bounded interval in a square field. For the approximation case, the continuity module and the properties of functions from the Lipchitz class were used. The approximation was also demonstrated numerically by performing computations.

**Keywords :** Linear positive operators, Gadjiev-Ibragimov operator, rate of convergence.

## MOBİL KARESEL BİR BÖLGEDE TANIMLI BİR OPERATÖRLER DİZİSİYLE YAKLAŞIM

### ÖZET

K. Weierstrass'ın 1885 yılında ortaya attığı teorem ile sadece günümüz matematikçilerinin değil, birçok alandaki araştırmacıların da üzerinde yoğun olarak çalıştığı yaklaşım teorisinin

kapıları açılmıştır. Daha sonraki ilk çalışmalarda uzun ve karmaşık bir ispata sahip olan bu teoremin daha etkili ve daha basit bir ispatının araştırılmasına çalışıldı. Bernstein bu teorem üzerinde çalışan ilk araştırmacılardan biridir. Daha sonra Korovkin kendi adını taşıyan bir teoremi ispatlayarak çalışmalara farklı bir boyut kazandırdı. Kapalı aralıkta tanımlanan sürekli fonksiyonlara yönelik bu yaklaşım, Gadjiev tarafından ağırlıklı uzaylara taşınmıştır. Gadjiev'in bir diğer katkısı da, daha sonra Gadjiev-Ibragimov operatörü olarak anılacak, klasik operatörlere dönüştürülebilen kullanışlı bir operatör üzerindeki çalışmasıdır. Literatürde Gadjiev Ibragimov operatörünü farklı açılardan inceleyen birçok farklı modifikasyon bulunmaktadır.

Volkov teoremi iki boyutlu uzaylarda operatörlerin yaklaşım özelliklerini incelemek için kullanılır. Volkov teoremi, sonlu bir aralıkta kapalı ve sürekli olan ve tüm gerçek eksen üzerinde sınırlı olan iki değişkenin fonksiyonlarına yaklaşmak için kullanılmıştır.

Bu çalışmada, karesel bir alanda sınırlı aralıkta tanımlanan tek değişkenli Gadjiev Ibragimov tipi bir operatörün iki değişkenli modifikasyonu tanımlanarak önemli yaklaşım özellikleri incelenecektir. Yaklaşım durumu için süreklilik modülü ve Lipchitz sınıfından fonksiyonların özellikleri kullanıldı. Yaklaşım aynı zamanda hesaplamalar yapılarak sayısal olarak da gösterilmiştir.

**Anahtar Kelimeler :** Doğrusal pozitif operatörler, Gadjiev-Ibragimov operatörü, yakınsama hızı.

## PROBİYOTİKLERİN SAĞLIK AÇISINDAN DEĞERLENDİRİLMESİ VE ANTİOKSİDATİF ETKİLERİ

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### ÖZET

Son yıllarda probiyotik katkılı diyetin daha sağlıklı bir beslenme düzeni olduğunu savunan çalışmaların artması, mide bağırsak kanserlerinin artması, çeşitli katkılı ve kızartılmış ürünlerle alınmış saprofit ve patojen mikroorganizmalar sebebiyle bağırsak florasının değişmesine bağlı hastalıkların artması, tüketicilerin sağlıklı yaşam için probiyotik besin desteğinin önemini anlaması, bu diyeti benimseyen kişi sayısının hızla artmasına sebep olmuştur.

Bu çalışmanın amacı; probiyotiklerin birçok sağlık etkilerinin yanısıra oksidatif stres önleyicisi olarak antioksidan etkileri hakkındaki mevcut bilgilerin biyokimyasal açıdan detaylı bir araştırılması yapılarak doğrudan veya dolaylı olarak hangi bakterilerin hangi mekanizma yoluyla etkili olduğu araştırmak oldu. PubMed veritabanı kullanılarak, “probiyotik bakteriler, fermente süt ürünleri, oksidatif stres, antioksidan” anahtar kelimeleri kullanılarak zaman kısıtlaması yapılmaksızın ilgili makalelere ulaşıldı. Yapılan incelemede makalelerin büyük bir çoğunluğunun probiyotiklerin antimikrobiyal, antimutajenik, antikarsinojenik, antikolesterolemik, antiinflamatuvar etkileri yönünde olup bu etkileriyle de hastalıkların septomlarını azaltıcı yönde etki göstererek plazma antioksidan düzeylerini artırmak suretiyle reaktif oksijen türlerini nötralize ederek stres tepkilerini azaltı sonucuna varılmıştır.

**Anahtar kelimeler:** probiyotik, kefir, oksidatif stres, antioksidan

### HEALTH EVALUATION AND ANTIOXIDATIVE EFFECTS OF PROBIOTICS

In recent years, the increase in studies advocating that probiotic supplemented diet is a healthier diet, increase in gastrointestinal cancers, increase in diseases due to changes in intestinal flora due to saprophytic and pathogenic microorganisms taken with various additives and fried

products, consumers' understanding of the importance of probiotic nutritional support for a healthy life, this diet. This led to a rapid increase in the number of adopters.

The aim of this study; In addition to many health effects of probiotics, the current information about antioxidant effects as oxidative stress inhibitors was investigated in detail from a biochemical point of view, and to investigate which bacteria are effective directly or indirectly through which mechanism. Using the PubMed database, the relevant articles were accessed without any time limit using the keywords "probiotic bacteria, fermented milk products, oxidative stress, antioxidant". In the review, it was concluded that the majority of the articles were in the direction of the antimicrobial, antimutagenic, anticarcinogenic, anticholesterolemic, and anti-inflammatory effects of probiotics, and with these effects, it was concluded that they reduce the stress responses by neutralizing reactive oxygen species by increasing plasma antioxidant levels by reducing the symptoms of diseases.

**Keywords:** probiotic, kefir, oxidative stress, antioxidants

## THE IMPORTANCE OF KEFIR IN THE GASTROINTESTINAL SYSTEM

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### ÖZET

Kefir, bakteri ve mayaların etkileriyle kefir daneleri içinde simbiyotik birleşmesi ile oluşan fermente bir süt ürünüdür. Kefir içeriği mide ve bağırsakta yararlı mikroorganizmaların çoğalmasını uyararak, bağırsak mikroflorasının probiyotik etkiye yardımcı olabilecek önemli tedavi yaklaşımı besin olarak kullanılmaktadır. Bu derlemede kefirin sindirim regülasyonuna etkisi biyokimyasal yönden incelenip önemi vurgulanarak gastrointestinal sistem hastalıkları üzerine çalışmalar incelenerek bir arada sunulmuştur.

**Anahtar Kelimeler:** Kefir, probiyotik, bakteri, bağırsak mikroflorası

### Kefirin Metabolizması Ve Sağlık Üzerine Probiyotik Etkileri

### ABSTRACT

Kefir is a fermented dairy product formed by the symbiotic combination of bacteria and yeasts in kefir grains. Kefir content is used as an important therapeutic food that can help the probiotic effect of the intestinal microflora by stimulating the proliferation of beneficial microorganisms in the stomach and intestines. In this review, the effect of kefir on nutrition regulation is examined biochemically and the importance of it is emphasized, and studies on how a regulation is made on gastrointestinal system diseases are examined and presented together.

**Key Words:** Kefir, probiotic, bacteria, intestinal microflora

## Natural products and activity relationship – Gypsogenin from *Gypsophila arrostii* roots

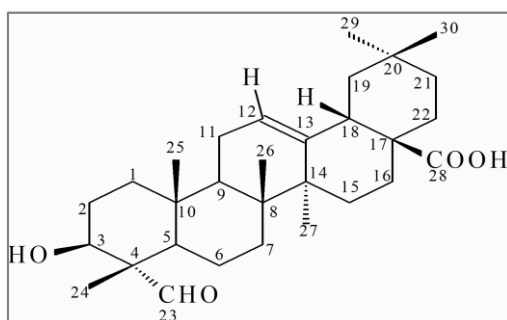
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### ABSTRACT

Natural products are known as the richest and most important source for new drug discoveries due to the chemical diversity they contain. Isolation of natural compounds from plants and elucidation of their structures are important studies carried out not only in plant chemistry but also in the field of medicine with the medical use of these products as anti-infectives. It is known that plants used as therapeutic and protective agents in human health are an important source for new drug discoveries. Many plants, especially *Gypsophila* species, are known to contain abundant saponins. Traditionally, *Gypsophila* species have a wide range of uses in Chinese medicine due to the biological activities (antitumour, antimicrobial, antioxidant, antifungal, cytotoxic) of the saponins they contain. Gypsogenin aglycone, a saponin derivative, is obtained after purification of *Gypsophila arrostii* plant roots by boiling with water. This saponin derivative is of great interest in new drug discovery as it shows a wide range of biological properties such as antimicrobial, antioxidant and human cancer cell line.



Gypsogenin

**Keywords:** Gypsogenin; Natural Product; Activity; Isolation



## ÜRİNER SİSTEM ENFEKSİYONLARINA NEDEN OLAN MİKROORGANİZMALARIN DAĞILIMININ İNCELENMESİ

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### ÖZET

Antibiyotik direnci nedeniyle her yıl dünya çapında 10 milyondan fazla insanın etkilenebileceği tahmin edilmektedir. İdrar yolları enfeksiyonlarına (İYE) *Escherichia coli*, *Enterococcus* spp., *Pseudomonas aeruginosa*, *Staphylococcus saprophyticus* gibi bakterilerin yanı sıra *Candida albicans* mayası sebebiyet vermektedir. Komplike olmayan ve komplike İYE'nin en yaygın nedeni üropatojenik *E. coli*' dir. Bu bakteride sülfonamid, tetrasiklin ve aminoaglikozid gibi antibiyotiklere karşı direnç gelişmektedir. Bu yüzden de çoğu İYE tam olarak tedavi edilememekte ve hastanın yaşam kalitesini son derece olumsuz etkilemektedir. Mevcut çalışmada, idrar yolu enfeksiyonu etkeni olan *E. coli* strainlerinin insan idrar örneklerinden izole edilmesi, bu izolatların antibiyotiklere karşı direnç durumlarının araştırılması amaçlanmıştır. Erzurum Atatürk Üniversitesi Araştırma Hastanesi'nde Eylül- Ekim 2023 tarihleri arasında idrar yolu enfeksiyonu tanısı ile takibi yapılan hastaların idrar kültürü sonuçlarının değerlendirildiği bir çalışma yürütülmüştür. Klinik Mikrobiyoloji Laboratuvarı'na idrar yolu enfeksiyonu şüphesiyle başvuran 18 yaş üzeri yaş gruplarından toplam 2084 hastadan alınan idrar örneklerinde *E. coli*, diğer bakteriler ve maya analizi yapılmıştır. İzolatların antibiyotik duyarlılıkları Disk Difüzyon yöntemiyle araştırılmış, teşhisleri Vitek II Compact cihazı ile gerçekleştirilmiştir.

Toplam 2084 örneğin 1552 tanesinde herhangi bir enfeksiyon varlığı tespit edilememiştir. Geri kalan 532 örneğin 80 tanesinde (%15,04) *Enterococcus* spp., 80 tanesinde (%15,04) maya, 52 tanesinde (9,77) ürogenital flora, 40 tanesinde (%7,52) *Klebsiella* spp., 40 tanesinde (%7,52) *Pseudomonas aeruginosa*, 12 tanesinde (%2,26) *Proteus* spp., 12 tanesinde (%2,26) *Staphylococcus* spp., 8 tanesinde (%1,5) *Enterobacter* spp., ve 208 tanesinde (%39,10) *E.coli* tespit edilmiştir.

*Escherichia coli* bakterisinin çoğunlukla levofloksasin, gentamisin, amikasin, sefuroksim, sülfametoksazol antibiyotiklerine karşı dirençli olduğu belirlenmiştir. Direnç gruplarında 50 yaş ve üzerindeki hastaların daha dirençli olduğu tespit edilmiştir.

**Anahtar kelimeler:** antibiyotik, direnç, enfeksiyon, üriner sistem, mikroorganizma

## INVESTIGATION OF THE DISTRIBUTION OF MICROORGANISMS CAUSING URINARY TRACT INFECTIONS

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### ABSTRACT

It is estimated that more than 10 million people worldwide may be affected each year due to antibiotic resistance. Urinary tract infections (UTI) are caused by bacteria such as *Escherichia coli*, *Enterococcus* spp., *Pseudomonas aeruginosa*, *Staphylococcus saprophyticus*, as well as the yeast *Candida albicans*. The most common cause of uncomplicated and complicated UTI is uropathogenic *E. coli*. This bacterium develops resistance against antibiotics such as sulfonamide, tetracycline and aminoaglycoside. Therefore, most UTIs cannot be fully treated and have a very negative affect on the quality of patient's life. In the current study, it was aimed to isolate *E. coli* strains, which are the causative agent of urinary tract infection, from human urine samples and to investigate the resistance of these isolates to antibiotics. A study was conducted to evaluate the urine culture results of patients who were followed up with a diagnosis of urinary tract infection at Erzurum Atatürk University Research Hospital between September and October 2023. *E. coli*, other bacteria and yeast analyzes were performed on urine samples taken from a total of 2084 patients over the age of 18 who applied to the Clinical Microbiology Laboratory with suspicion of urinary tract infection. Antibiotic susceptibilities of the isolates were investigated by the Disc Diffusion method, and their diagnosis was made with the Vitek II Compact device.

No infection was detected in 1552 samples (% 74.4) of the total 2084 samples, where in the remaining samples, *Enterococcus* spp. was detected in 80 sample, yeast in 80 sample(% 15,04), urogenital flora in 52 sample(% 9,77) , *Klebsiella* spp. in 40 sample(7,52) *Pseudomonas aeruginosa* in 40 sample (% 7,52), *Proteus* spp. in 12 sample(% 2,26) , *Staphylococcus* spp. in 12 sample(% 2,27) *Enterobacter* spp. in 8 sample(% 1,5) , and *E. coli* in 208 sample(% 39,10).

It has been determined that *Escherichia coli* bacteria are mostly resistant to the antibiotics levofloxacin, gentamicin, amikacin, cefuroxime and sulfamethoxazole. In the resistance groups, patients aged 50 and over were found to be more resistant.

**.Key words:** antibiotic, resistance, infection, urinary system, microorganism

## Can propolis be an alternative to antibiotics?

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### ABSTRACT

Antibiotics are used to treat bacterial infections but currently the world is facing antibiotic resistance crisis due to inappropriate usage of antibiotics which lead to the prevalence of infectious disease has been increased as well as the mortality and morbidity rates. This critical global health situation should flash an alarm to find a natural alternative to antibiotics. So can propolis be an alternative to antibiotics ? Propolis is a resinous substance manufactured by honey bees, and has a complex chemical composition. Propolis has been proved as a potent antimicrobial agent against Gram-negative and Gram-positive bacteria and it is believed that flavonoids are responsible for its biological activity. In this study we aimed to investigate if the propolis could be an alternative to antibiotics. The antimicrobial activity of propolis was tested against *Streptococcus aureus* ATCC 25323, *Streptococcus pyogenes* ATCC 19615, *Klebsiella pneumoniae* ATCC 13883, and *Bacillus cereus* ATCC 11778. Antimicrobial activity was investigated by the disk diffusion method, and the inhibition zone was measured in millimeters (mm). Vancomycin, ofloxacin, and streptomycin antibiotics were utilized in antibiotic susceptibility test. Bacterial suspension was prepared and adjusted to 0.5 McFarland then spread on TSA agar and incubated for 48h at 37 °C, inhibition zone was measured after 24h. The zone of Streptomycin and propolis was the same in *B.cereus* and *K.pneumoniae*, while in the zone of vancomycin and propolis was the same in *S.pyogenes* and *S.aureus*, while ofloxacin and propolis activity was the same against *S.pyogenes*, so propolis can be an alternative to antibiotics.

**keywords :** Propolis, Antibiotic, Antimicrobial.

## TRICLOCARBAN'IN *Penicillium* sp. ZA10 suşu TARAFINDAN MİKROBİYAL DEGRADASYONU

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### ÖZET

Farmasötik ve kişisel bakım ürünleri (PPCP'ler); insanların ve hayvanların zorunlu ihtiyaçlarına yönelik olarak özellikle sağlık ve kozmetik sektörleri başta olmak üzere birçok alanda yaygın olarak kullanılan ürünlerdir. Antibakteriyel sabunlar, deterjanlar, dezenfektanlar, diş macunları, spreyler ve çeşitli ilaçların bazen direkt olarak kendileri, bazende yapılarında bulunan kimyasal içerikler PPCP sınıfına dahil edilmiştir. Özellikle geçtiğimiz pandemi dönemi itibari ile PPCP'ler son yıllarda giderek artan bir ilgi görmüştür. Bu durum, ortamlarda ortaya çıkmaları, dönüşümleri, akıbetleri ve riskleri konusundaki büyük endişeleride beraberinde getirmiştir.

Bu ürünler kullanımlarının ardından kanalizasyon sistemlerine giriş yapar ve sonrasında atıksu arıtma tesislerinde, arıtım işlemlerine tabi tutulurlar. Ancak yapılan araştırmalar, bazı PPCP'lerin uygulanan mevcut prosesler ile, atıksu arıtma tesislerinde tamamen arıtılmadıklarını ve hatta daha toksik yan ürünlere dönüşebildiklerini ortaya çıkarmıştır. Arıtılmış atıksularla yapılan uygulamalar sonrasında, bu maddelere yeniden maruz kalan canlıların; büyüme, gelişme, üreme dönemlerinde çok çeşitli problemler ve hastalıklar meydana gelebilmektedir. Dolayısıyla günümüzde, PPCP'leri özellikle atıksulardan tamamen uzaklaştırabilecek multidisipliner, çevre dostu ve uygun maliyetli yöntemler geliştirilmeye çalışılmaktadır.

Mikrobiyal dönüşüm, bahsedilen ihtiyaçlara en iyi şekilde cevap verebilen uygulamalardan biri olma potansiyeli taşımaktadır.

Bu doğrultuda yapılan çalışmada atıksularda sıklıkla tespit edilen, toksik PPCP'lerden biri olan triklokarbanın biyodegradasyonunu en iyi şekilde gerçekleştirebilen yeni mikrobiyal kaynakları keşfetmek için mantar izolatları elde edildi ve bu izolatlar bozunma potansiyeli açısından tarandı. Erzurum ilinde bulunan belediye atıksu arıtma tesisindeki aktif çamur numunesinden izole edilen Z10 suşu, diğerlerine kıyasla daha yüksek bozunma etkinliği gösterdi. İzolat, morfolojisine ve 18S rRNA sekans analizi sonucuna göre *Penicillium* sp. olarak tanılandı.

**Anahtar Kelimeler:** Atıksu, Triklokarban, Mikrobiyal Degradasyon, *Penicillium* sp.

## MICROBIAL DEGRADATION of TRICLOCARBAN BY *Penicillium* sp. strain ZA10

### ABSTRACT

Pharmaceutical and personal care products (PPCPs) are products that are widely used in many fields, especially in the health and cosmetics sectors, for the mandatory needs of humans and animals. Antibacterial soaps, detergents, disinfectants, toothpastes, sprays and various drugs are included in the PPCP class, sometimes directly themselves, and sometimes the chemical ingredients in their structures. Especially as of the last pandemic period, PPCPs have received increasing attention in recent years. This situation has brought with it great concerns about their emergence, transformation, fate and risks in environments. These products enter the sewerage systems after their use and are then subjected to treatment processes in wastewater treatment plants. However, researches have revealed that some PPCPs cannot be completely purified in wastewater treatment plants with the current processes applied and they can even turn into more toxic by-products. After the applications made with treated wastewater, various problems and diseases may occur during the growth, development and reproduction periods of living things that are re-exposed to these substances. Therefore, today, it is tried to develop multidisciplinary, environmentally friendly and cost-effective methods that can completely remove PPCPs especially from wastewater.

Microbial transformation has the potential to be one of the applications that can best meet the mentioned needs.

In this study, in order to discover new microbial sources that can best biodegrade triclocarban, one of the toxic PPCPs frequently detected in wastewater, fungal isolates were obtained and these isolates were screened for degradation potential. The Z10 strain isolated from the activated sludge sample in the municipal wastewater treatment plant in Erzurum province showed higher degradation efficiency compared to the others. The isolate was defined as *Penicillium* sp. based on its morphology and 18S rRNA sequence analysis.

**Keywords:** Wastewater, Triclocarban, Microbial Degradation, *Penicillium* sp.

## KENTSEL SU YÖNETİMİNDE SÜRDÜRÜLEBİLİR SİSTEMLERE GEÇİŞ VE SU DUYARLI KENT

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### ÖZET

Son yüzyılda yaşanan ve tüm dünyayı etkileyen iklim değişimi, su kaynaklarını tehdit etmektedir. Bu tehditlerin başında canlılar için gerekli tatlı su kaynaklarının yok olması gelmektedir. Dünya üzerindeki toplam 35 milyon km<sup>3</sup> suyun yalnızca %0.3'ünü (105.000 km<sup>3</sup>) oluşturan bu kaynakların korunması ve gelecek nesillere aktarılması, geleneksel su yönetimi sistemlerinden sürdürülebilir su yönetimi sistemlerine geçişi gerekli kılmaktadır. Kentlerde su temini, atık ve yağmur sularının tahliyesi, geleneksel kentsel su yönetiminin temelleridir. Sürdürülebilir kentsel su yönetiminde ise suyun su kaynaklarından temin edilmesine alternatif olarak, atık sular ve yağmur suları da birer kaynak olarak kullanılmaktadır. Geleneksel kentsel su yönetiminden sürdürülebilir kentsel su yönetimine geçiş süreci; su sağlayan kent, kanalizasyon kenti, drenaj kenti, su yolları kenti, su döngüsü kenti ve su duyarlı kent adımlarını takip etmektedir. Sürdürülebilir kentsel su yönetiminin son adımı olan su duyarlı kent; **dayanıklı, yaşanılabilir, verimli ve sürdürülebilir** su yönetimini bütüncül bir yaklaşımla ele almaktadır. Tüm dünyada farklı isimlerle adlandırılan su duyarlı yaklaşımlar, yeşil altyapı uygulamaları, mavi-yeşil altyapı sistemleri, sürdürülebilir yağmur suyu yönetimi, sürdürülebilir kentsel drenaj sistemleri, bütünleşik kentsel su yönetimi, düşük etkili gelişim, en iyi yönetim uygulamaları, doğa temelli tasarım uygulamaları, sürdürülebilir atık su yönetimi ve sürdürülebilir taşkın yönetimini içermektedir. Su duyarlı kente geçişte su duyarlı yaklaşımların tekil yapı ölçeğinden, kent bütününe kadar giden farklı ölçeklerde çeşitli uygulamaları bulunmaktadır. Bu çalışmada, literatürde sürdürülebilir kentsel su yönetimine geçiş süreci ile, su duyarlı kent yaklaşımı ele alınmaktadır. (Bu çalışma, ilk yazarın Atatürk Üniversitesi Kentsel Tasarım Anabilim Dalında yürütülmekte olan tezinden üretilmiştir.)

**Anahtar Kelimeler:** Su Duyarlı Kent, Kentsel Su Yönetimi, Sürdürülebilir Kentsel Su Yönetimi

## TRANSITION TO SUSTAINABLE SYSTEMS IN URBAN WATER MANAGEMENT AND WATER SENSITIVE CITY

### ABSTRACT

Global climate change, which has occurred in the last century, threatens water resources. The main threat is the loss of freshwater resources suitable for living beings. Protecting these resources, which constitute only 0.3% (105,000 km<sup>3</sup>) of the total 35 million km<sup>3</sup> of water in the world, and transferring them to future generations necessitates the transition from traditional water management systems to sustainable water management systems. Supplying water to cities and discharging waste and rainwater are the foundations of traditional urban water management. In sustainable urban water management, wastewater and rainwater are also used as resources as an alternative to providing potable water from water resources. The transition process from traditional urban water management to sustainable urban water management is following the steps of a water supply city, sewage city, drainage city, waterways city, water cycle city, and water sensitive city. Water sensitive city, which is the last step in sustainable urban water management; addresses durable, livable, efficient, and sustainable water management with a holistic approach. Water sensitive urban approaches, called by different names all over the world; cover green infrastructure practices, blue-green infrastructure systems, sustainable stormwater management, sustainable urban drainage systems (SUDS), integrated urban water management systems (IUWM), low impact development (LID), best management practices (BMP), nature-based design practices, sustainable wastewater management systems, sustainable flood management, and water sensitive urban design (WSUD). In the transition to a water-sensitive city, water-sensitive approaches have various applications at different scales, from the scale of individual buildings to the whole city. In this study, the transition process to sustainable urban water management, and the water-sensitive city approach in literature are discussed. (This study was produced from the thesis of the first author, which is being carried out at Atatürk University, Graduate School of Natural and Applied Sciences, Department of Urban Design)

**Keywords:** Water Sensitive City, Urban Water Management, Sustainable Urban Water Management



## Determination of *Lactococcus formosensis* Predicted Virulence Factors

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### ABSTRACT

Lactococcus species are generally considered non-pathogenic and are mostly associated with their usage in the production of fermented foods. However, several Lactococcus species with known and emerging clinical consequences in fish have been identified including *L. garvieae*, *L. plantarum*, *L. piscium*, *L. raffinolactis*, *L. formosensis*, and *L. petauri*. *L. formosensis*, and *L. petauri* share a noteworthy percentage of their genome with *L. garvieae* and have also been recently identified as etiologic agents of lactococcosis in various fish species like trout and catfish. It is an opportunistically zoonotic, Gram-positive bacteria responsible for costly outbreaks of high mortality in wild and cultured fish populations. Clinical appearance of infections caused by *L. garvieae*, *L. petauri*, or *L. formosensis* is similar and can include acute hemorrhagic septicemia, erratic swimming, lethargy, exophthalmia, anorexia, skin pigmentation changes, and moderate to high mortality in affected systems. In this study, we evaluated *L. formosensis* genomes, which are publicly available on NCBI (National Center for Biotechnology Information) database. For the phylogenetic relationship of genomes, a phylogenetic tree was built with core genomes, and an ANI (Average Nucleotide Identity) value was calculated. To identify virulence factors, VFDB (Virulence Factor Database) software was used. The results showed that adherence, adhesion, anti-phagocytosis, biofilm formation, enzyme, immune evasion, invasion, iron uptake, nutritional virulence, protease, and surface protein anchoring related virulence factor genes were identified. Virulence factors can vary between bacterial strains within the same species, so further detailed studies might be required to understand the potential virulence factors of *L. formosensis*.

**Keywords:** Lactococcosis, *Lactococcus formosensis*, Virulence factors



## Evaluation of Hybrid Rice Program In San Miguel, Bulacan: Microlevel Evidences

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### ABSTRACT

Rice self-sufficiency continues to be the primary goal of the Philippine government. Promotion of using hybrid rice has been one of the flagship program of the government to help improve rice production and provide enough supply of rice to meet the demands of the growing population. This study primarily focused on the evaluation of Hybrid Rice Program in San Miguel, Bulacan. It tackled microlevel evidences of the farmers evaluation of the program in terms of information campaign, technology, source of planting materials and the implementability. In addition, it also presented the evaluation of the implementors to the Hybrid Rice Program.

A quantitative research design was employed in this study. In gathering data, a self-report survey was administered to 180 farmers aging from the age bracket of 19 up to 60 years old and above. They were selected from the top five barangays in San Miguel, Bulacan who has the most number of farmers who planted hybrid rice seeds for the planting period of 2020-2022. The gathered data were analyzed using frequency, percentage and mean. Additionally, an inferential statistics was also used to determine significant difference in farmers evaluation of the Hybrid Rice Program when grouped according to demographic profile.

The result of this study shows no significant relationships between the farmers demographic profile and their evaluation of the Hybrid Rice Program in terms of the information campaign and implementability. However, this study found notable significance between farmers farming practices and their evaluation of the Hybrid Rice Program in terms of technology. This suggest boosting the use of contemporary agricultural technologies and investing in advance machineries can provide farmers ease in farming and faster operations which can help in their productivity. Additionally, there is also significant difference in between the farmers' number of hectares tilled and their evaluation of the Hybrid Rice Program in terms of the source of planting materials. This shows that farmers who own more land have a more positive opinion towards the source of the planting materials utilized in the Hybrid Rice Program compared to those who tilled less. Thus, it is recommended that the government and other local government unit must addressed issue connected to the source of planting materials particularly in the cost of hybrid seeds in order to increase the program's success, especially for farmers which has smaller landholdings. Furthermore, it is proposed to the implementors to intensify information dissemination of the Hybrid Rice Program and continuously provide support to the farmers in order to encourage them to adopt the hybrid rice technology.

Keywords: Hybrid Rice Program, hybrid seeds, farmers, technology, information campaign, implementability, planting materials

## HASANKEYF İNCİRİNİN GÜNEŞ BACASI SERA ALANINDA KURUTULMASININ DENEYSEL OLARAK ARAŞTIRILMASI

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### ÖZET

Tarımsal ürünlerin besin içeriği bozulmadan uzun süre saklanması için yaygın olarak kullanılan yöntemlerden biri de kurutmadır. Kurutma işlemi açık alanda bir örtü üzerinde yapılabileceği gibi güneş enerjisi, mikrodalga, dönel veya bantlı fırın, dondurarak vb. farklı yöntemler kullanılarak gerçekleştirilebilir. Güneş enerjisi ekonomik, güvenilir, temiz, çevreci, yenilenebilir ve ekonomik olması vb. avantajlarından dolayı yaygın olarak kullanılmaktadır.

Güneş bacası sistemi yaygın olarak elektrik üretimi için kullanılsa da sera örtüsü altında kalan alan farklı amaçlar için kullanılabilir. Yapılan çalışmada Güneş bacası sera alanında Hasankeyf incirinin kurutulabilirliği deneysel olarak araştırılmıştır. Yaklaşık aynı boyutta seçilen incirler hem doğal ortamda hem de güneş bacasının farklı yön ve konumlarında kurutulmuştur. Farklı noktalarda kurutulan ürünlere ait hava sıcaklığı, hava hızı, kütle değişimi, güneş radyasyonu verileri ölçülerek güneş bacası sera alanının kurutma performansı incelenmiştir. Sonuç olarak güneş bacasının açık alanda güneşte kurutmaya nazaran kuruma süresi, dış ortam etkilerine maruz kalmama, homojen kurutma vb. avantajlardan dolayı tarımsal ürünlerin kurutulması amacıyla kullanılabileceği belirlenmiştir.

**Anahtar Kelimeler:** Güneş Bacası, Kurutma, Hasankeyf İnciri.

## THE IMPACT OF CLIMATE CHANGE ON ECOLOGICAL LIFE CYCLE IN SUDAN

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### ABSTRACT

As a result of global warming, the physical conditions necessary for supporting life systems are shifting. Ocean temperatures are rising, the water's acidity is increasing, and the soil is deteriorating. Entire ecosystems are in jeopardy in many areas because surroundings are changing so quickly that plants and animals cannot adapt. Not only in Sudan but around the world, the effects and ramifications of climate change have had an impact on the ecological cycle and all living organisms. This study aims to examine climate change and the ecological life cycle in Sudan. The sustainable development of the country is today being threatened by the negative consequences of climate change and global warming. Adopting constructive climate change adaptation measures may significantly improve managing Sudan's limited water resources and safeguarding ecosystems and biodiversity. Promoting a suitable national management plan and sustainable development strategy will undoubtedly be a part of a concerted effort to lessen susceptibility to the anticipated negative consequences of climate change.

**Keywords:** Ecological Life Cycle, Climate Change, Sudan

## AGRICULTURAL PRODUCTION ASSESSMENT OF THE WORLD DURING COVID-19 PERIOD

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### ABSTRACT

Corona virus pandemic is a worldwide health disaster and it's a great challenge since the Second World War and it spread all over the world except Antarctica. According to world health organization, the very first occurrence of Corona virus happened on December 31, 2019, in Wuhan, China, which was the origin of COVID-19 pandemic and then spread all over the world with severe impacts on health, economy, survival, agriculture and food. In this review article we will discuss about the assessment of agricultural production affected by COVID-19 throughout the globe. Pandemic effects on agricultural production led to the food deficiency globally. During pandemic shortage of both demand and supply of agricultural food production occur because of seasonal production of crops, labor shortage due to quarantine, transport restrictions and consumer shortage due to lockdown. To compete with these food shortage problems it is compulsory for government take a step forward and make new alternative policies to maintain the food market in any devastating situation.

**Keywords:** Agricultural Production, Food deficiency, COVID-19, World

## KİŞNİŞ (*Coriandrum sativum* L.)'İN BAZI AGRONOMİK ÖZELLİKLERİ ÜZERİNE YAPRAKTAN ÇİNKO UYGULAMALARININ ETKİSİ

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### ÖZET

Bu çalışma, 2022-2023 yıllarında Siirt Üniversitesi Ziraat Fakültesi deneme arazisinde çinko (Zn) dozlarının (0, 1, 2, 3 g/L) kişniş (*Coriandrum sativum* L.) bitkisinin bazı agronomik özelliklerine etkilerini belirlemek amacıyla yürütülmüştür. Araştırmada, deneme konularına göre Zn çiçeklenme öncesi ve çiçeklenme başlangıcı olmak üzere iki dönemde yaprakтан uygulanmıştır. Bitki boyu, biyolojik verim, tohum verimi, hasat indeksi ve bin tane ağırlığı özellikleri incelenmiştir. Çalışmada, biyolojik verim hariç incelenen özellikler çinko dozlarından önemli düzeyde etkilenmiştir. Çinko dozlarına göre, bitki boyunun 82.3-110.7 cm, biyolojik verimin 696-793 kg da<sup>-1</sup>, tohum veriminin 126.5-179.3 kg da<sup>-1</sup>, hasat indeksinin %18.2-25.2, bin tane ağırlığının 4.7-5.4 g arasında değişim gösterdiği belirlenmiştir. Çinko kapsamı az olan topraklarda kişniş bitkisine yaprakтан 1 g/L çinko uygulanabileceği sonucuna varılmıştır.

**Anahtar Kelimeler:** *Coriandrum sativum*, kişniş, çinko, verim, bin tane ağırlığı

### EFFECT OF FOLIAR ZINC APPLICATIONS ON SOME AGRONOMIC CHARACTERISTICS OF CORIANDER (*Coriandrum sativum* L.)

### ABSTRACT

This study was conducted to determine the effects of zinc (Zn) doses (0, 1, 2, 3 g/L) on some agronomic characteristics of coriander (*Coriandrum sativum* L.) plant in the experimental field of Siirt University Faculty of Agriculture during the 2022-2023 vegetation period. In the study, Zn was applied foliarly in two periods, before flowering and at the beginning of flowering, according to the trial subjects. Plant height, biological yield, seed yield, harvest index and thousand grain weight characteristics were examined. In the study, the characteristics examined, except biological efficiency, were significantly affected by zinc doses. According to zinc doses, plant height, biological yield, seed yield, harvest index, thousand grain weight were changed between 82.3-110.7 cm, 696-793 kg da<sup>-1</sup>, 126.5-179.3 kg da<sup>-1</sup>, 18.2-25.2%, 4.7-5.3 g, respectively. It was concluded that 1 g/L zinc can be applied foliar to coriander plants in soils with low zinc content.

**Keywords:** *Coriandrum sativum*, coriander, zinc, yield, thousand weight.

## KOZMETİK SANAYİNDE KULLANILAN TIBBİ VE AROMATİK BİTKİLER

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### ÖZET

Antik çağlardan beri insanlar dış görünüşlerine dikkat etmeye ilgi duymuşlardır. İnsanlar güzel görünmenin yanı sıra güvenli, doğal ve sağlıklı ürünler kullanmak da istemektedir. Sentetik bileşiklerin neden olduğu zararlı etkiler ve olumsuz reaksiyonlar nedeniyle bitkisel kozmetiklerin kullanımı hızla artmaktadır. Bitkisel kozmetikler temel olarak bitkilerden veya diğer doğal kaynaklardan elde edilen, temizlenmek, güzelleşmek veya vücut görünümünü değiştirmek amacıyla kullanılan doğal ürünlerdir. Tıbbi ve aromatik bitkiler içermiş oldukları çeşitli esansiyel yağlar, sabit yağlar, ekstraktlar, izole bileşiklerden dolayı kozmetik alanında kullanılmaktadır. Kozmetik sektöründe, bitkisel kozmetikler daha düşük yan etki ve daha yüksek biyoyumluluk göstermeleri, maliyetlerinin düşük olması, çevre dostu, güvenilir olmaları ve geleneksel kullanım deneyimleri nedeniyle tercih edilmektedir. Bu çalışmada, tıbbi ve aromatik bitkilerin bazılarının kozmetikte kullanım amaçlarından bahsedilmiştir.

**Anahtar Kelimeler:** Bitkisel kozmetik, uçucu yağlar, flavonoidler, kozmetikler

### MEDICINAL AND AROMATIC PLANTS USED IN THE COSMETICS INDUSTRY

### ABSTRACT

Since ancient times, people have been interested in paying attention to their appearance. In addition to looking beautiful, people also want to use safe, natural and healthy products. The use of herbal cosmetics is rapidly increasing due to the harmful effects and adverse reactions caused by synthetic compounds. Herbal cosmetics are basically natural products obtained from plants or other natural sources and used to cleanse, beautify or change body appearance. Medicinal and aromatic plants are used in the cosmetics field due to the various essential oils, fixed oils, extracts and isolated compounds they contain. In the cosmetics industry, herbal cosmetics are preferred due to their lower side effects and higher biocompatibility, low cost, ecofriendly, reliability and traditional use experience. The safety of herbal cosmetics encourages the review of herbs and natural ingredients for their cosmetic potential. In this study, the purposes of using some of medicinal and aromatic plants in cosmetics are mentioned.

**Keywords:** Herbal cosmetics, uçucu yağlar, flavonoids, cosmetics

## FİTOPATOJEN FUNGUSLARIN KONTROLÜNDE NANOPARTİKÜLLERİN KULLANIMI

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### ÖZET

Fungal patojenlerinin neden olduğu hastalıklar, küresel düzeyde ürün verimini ve kalitesini önemli ölçüde azaltan, gıda güvenliğine ciddi bir tehdit oluşturan en önemli faktörlerden birisidir. Bu hastalıklar ile mücadelede halen temel strateji kimyasal ilaç kullanımınıdır ancak bu uygulamanın insan sağlığına zararlı etkileri ve çevre kirliliğine neden olmaktadır. Dahası, bu kimyasalların sürekli kullanımı nedeniyle patojenlerin daha az hassas hale gelmesine neden olmaktadır. Bu nedenle tarımsal sürdürülebilirlik ve gıda güvenliğini sağlamak için, bu patojenlerin hızlı bir şekilde tanılanması ve kontrolü için çeşitli teknikler kullanılmakta olup, birçok moleküler yöntemde geliştirilmiştir. Ancak bunlar zaman alıcı, maliyetli ve genellikle yerinde analiz için uygun değildir. Bu olumsuzları aşmak için nanoteknoloji gibi ilerici teknolojinin tarımsal üretimde kullanımı önemlidir. Bunlar arasında nanopartiküller, fungal patojenler ile mücadelede son yıllarda uygulanan çevre dostu alternatif bir mücadele yöntemidir. Ayrıca, antifungal aktiviteye sahip olan bu ürünler bitki gelişimini de olumlu yönde etkilemektedir. Günümüzde bu teknolojinin fungal hastalıklarının kontrolünde uygulanmasına yönelik daha fazla araştırma yapılması gerekmektedir. Bu çalışmada, fungal patojenlerinin kontrolünde kullanılan nanopartiküllerin önemi ve uygulamaları hakkında bilgi verilmiştir.

**Anahtar Kelimeler :** Fungal patojen, nanoteknoloji, nanopartikül, kontrol

## BİTKİ PATOJENİ FUNGUSLAR İLE MÜCADELEDE CRISPR TEKNOLOJİSİ

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### ÖZET

Bitki patojenleri nedeniyle her yıl dünya genelinde %40 varan verim kayıpları meydana gelmektedir. Nüfus artışı ile birlikte gıda ürünlerine olan talep de artmakta ve bu ürünlerde önemli verim ve kalite kayıplarına neden olan hastalık etmenleri ile mücadele edilmesi gerekmektedir. Son yıllarda hastalık etmenlerine karşı kullanılan kimyasal ilaçların çevre ve insan sağlığı üzerine olumsuz etkilerinden dolayı, bu etmenler ile mücadelede dayanıklı çeşitlerin geliştirilmesi son derece önemlidir. Bu çeşitlerin geliştirilmesinde klasik moleküler teknikler ile fonksiyonel genomik çalışmalar katkı sağlamıştır. Son yıllarda ise genom düzenleme tekniklerindeki yeni gelişmeler sonucunda düzenli aralıklarla kümelenmiş kısa tekrar dizileri (CRISPR) ve buna bağlı Cas proteinlerinin devreye girmesiyle hastalık etmenleri ile mücadelede önemli genetik araçlardan biri haline gelmiştir. Diğer genom düzenleme tekniklerine göre; daha basit, ucuz ve uygulanabilir olması nedeniyle de yaygınlaşmaya başlamıştır. Ayrıca, konukçu patojen etkileşimde rol oynayan genler, hastalık ile ilişkili R genleri tanımlanmıştır. Bu çalışma, fungal hastalık etmenleri ile mücadelede uygulanan CRISPR/Cas yöntemi ile ilgili yapılan mevcut araştırmalar hakkında bilgi sunmak amacıyla gerçekleştirilmiştir. Burada bahsedilen bilgilerin, fungal hastalık etmenleri ile mücadeleye ve gelecekte yürütülecek olan çalışmalara önemli katkılar sağlayacağı düşünülmektedir.

**Anahtar Kelimeler :** Fungal patojenler, CRISPR, genom düzenleme, hastalık yönetimi





## KÜRESEL İKLİM DEĞİŞİKLİKLERİNİN BÖCEK YAŞAYIŞI ÜZERİNE ETKİSİ

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### ÖZET

Dünyada fosil yakıt tüketimi, endüstriyel ve tarımsal gibi faaliyetler sonucu atmosferde oluşan ve artan miktarda sera gazı ve CO<sub>2</sub>'in neden olduğu iklim değişikliğine küresel ısınma denir. Küresel ısınma nedeniyle geçmişten günümüze yüzey sıcaklığı sürekli olarak artmaktadır. Böylece iklimde meydana gelen değişikliklerden en fazla etkilenen canlı gruplarının başında gerek tarım dışı alanlarda gerek tarımsal üretim alanlarında bulunan böcekler gelmektedir. Böcekler, başta iklim değişikliği olmak üzere birçok çevresel değişikliğe oldukça kolay uyum sağlayan organizmalardır. Böceklerin vücut sıcaklığı çevre sıcaklığına bağlı olarak değişmektedir. Bu nedenle sıcaklık ve nemdeki değişiklikler böceğin davranışını, genetik çeşitliliğini, gelişim dönemini, metabolizmasını, fizyolojik fonksiyonunu, üreme yeteneğini, beslenme aktivitesini değiştirebilmektedir. Artan sıcaklıklar nedeniyle böceklerin gelişme süresi kısalmış, yılda verdiği döl sayısı artması yanında daha fazla yavru üretirler, hızlıca hareket etmektedirler. İklim değişikliğine bağlı olarak artan sıcaklıklar, böcek fenolojisi, çiftleşme, konukçuyu bulma ve yerleşim gibi önemli parametreler böceklerde göç etme davranışlarını belirlemede etkilidir. Böcek ölümlerinin çoğu abiyotik faktörlerden (rüzgâr hızı ve yönü, yağış, nem ve güneş radyasyonu) kaynaklanmaktadır. Bu nedenle iklim değişikliğinin böcek biyolojik çeşitliliği üzerinde de olumsuz etkisi vardır. Ancak iklim değişikliği, böceklerle konukçu bitkiler arasındaki etkileşimi de değiştirebilmektedir. Bununla birlikte küresel ısınma konakçı bitki direncini, transgenik bitkileri, doğal düşmanları, biyopestisitleri ve böcek kontrolü için kullanılan sentetik kimyasalların etkinliğini de azaltır. Dolayısıyla küresel ısınmaya bağlı iklim değişikliği, böcekler de dâhil olmak üzere yeryüzündeki tüm canlıları etkileyen en büyük sorunlardan biridir.

**Anahtar Kelimeler:** Böcekler, Göç davranışı, Küresel ısınma, İklim değişikliği,

### THE EFFECT OF GLOBAL CLIMATE CHANGES ON INSECT LIFE

#### ABSTRACT

Climate change caused by increasing amounts of greenhouse gases and CO<sub>2</sub> in the atmosphere as a result of fossil fuel consumption, industrial and agricultural activities in the world is called

Global warming. Due to global warming, surface temperature has been increasing continuously from past to present. Thus, insects, both in non-agricultural areas and in agricultural production areas, are among the living groups most affected by changes in climate. Insects are organisms that can easily adapt to many environmental changes, especially climate change. The body temperature of insects varies depending on the environmental temperature. Therefore, changes in temperature and humidity can change the insect's behavior, genetic diversity, developmental period, metabolism, physiological function, reproductive ability and feeding activity. Due to increasing temperatures, the development period of insects shortens, in addition to increasing the number of offspring per year, they produce more offspring and move quickly. Important parameters such as increasing temperatures due to climate change, insect phenology, mating, finding the host and settlement are effective in determining migratory behavior in insects. Most insect deaths are caused by abiotic factors (wind speed and direction, precipitation, humidity and solar radiation). Therefore, climate change also has a negative impact on insect biodiversity. However, climate change may also alter the interaction between insects and host plants. However, global warming also reduces host plant resistance, transgenic plants, natural enemies, biopesticides, and the effectiveness of synthetic chemicals used for insect control. Therefore, climate change due to global warming is one of the biggest problems affecting all living things on earth, including insects.

**Key Words:** Insects, Migration behavior, Global warming, Climate change,

## TARIMSAL SAVAŞIMDA KULLANILAN PESTİSİTLERİN YOL AÇTIĞI

### ÇEVRE SORUNLARI

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### ÖZET

Dünya nüfusunun hızla artmasıyla birlikte gıdaya olan talepte artmaktadır. Diğer taraftan yerleşim alanları, inşaat ve barajların yapımı, sanayi vb. nedenlerden dolayı ekilebilir tarım arazi gün geçtikçe azalmaktadır. Bu yüzden tarımsal ürün üreticileri zamanla azalan tarımsal alanlardan kısa zamanda çok ürün sağlamak için teknoloji ve yöntemlerden faydalanması yanında bilinçsiz ve yoğun bir şekilde pestisitler kullanmaya başlamışlardır. Pestisit kullanımı, dünyada tarımsal üretimi artırmanın yanında kalitesini de yükseltmiştir. Pestisitler, doğru zamanlarda ve tavsiyelere uygun kullanımı koşuluyla; üreticilere büyük kazançlar sağlamakla birlikte üretim sezonunun ve muhafaza zamanında uzamasını sağlamaktadır. Ancak bilindiği gibi pestisitler, hem kullanım hataları hem de, pestisitlerin yapısal özelliklerinden dolayı; insan sağlığını ve çevreyi olumsuz etkilemektedir. Böylece pestisitler tarımsal ürünlerde kalıntı oluşturması yanında toprak, su ve havaya karışarak birçok çevre sorunu da beraberinde getirmektedir. Bu nedenle pestisit kullanırken hem ürünün hastalıklara, zararlılara ve yabancı otlara karşı korumasının, hem de insanlara ve çevreye olan olumsuz etkilerinin eş zamanlı olarak değerlendirilmesi gerekmektedir. Ayrıca pestisitlerin uygun koşullarda saklanması ve uygun biçimde belgelenmesi, ilaçlama için uygun makine ve aletlerinin doğru şekilde kullanımı, ilaçlamaların ardından ortaya çıkan pestisit atıklarının toplanıp uygun bir şekilde imha edilmesi ve güvenlik önlemleri gibi kurallara uyulması gerekmektedir. Bu önlemleri dikkatli bir şekilde uygulayarak pestisitlerin olumsuz etkilerini en aza indirebilmektedir

**Anahtar Kelimeler:** Pestisit, Tarımsal ürün, Kimyasal savaş, Çevre sorunları,

### CAUSED BY PESTICIDES USED IN AGRICULTURAL CONTROL ENVIRONMENTAL PROBLEMS

### ABSTRACT

As the world population increases rapidly, the demand for food increases. On the other hand, residential areas, construction and dam construction, industry, etc. For various reasons, arable agricultural land is decreasing day by day. For this reason, agricultural product producers have

started to use pesticides unconsciously and intensively, as well as making use of technology and methods in order to provide more products in a short time from the decreasing agricultural areas over time. The use of pesticides has not only increased agricultural production in the world but also improved its quality. Pesticides, provided that they are used at the right times and in accordance with recommendations; It provides great profits to producers and extends the production season and storage time. However, as it is known, pesticides, due to both usage errors and structural features of pesticides; It negatively affects human health and the environment. Thus, pesticides not only create residues in agricultural products, but also cause many environmental problems by mixing with soil, water and air.

Therefore, when using pesticides, both the protection of the product against diseases, pests and weeds, and the negative effects on humans and the environment must be evaluated simultaneously. In addition, rules such as storing pesticides under appropriate conditions and documenting them appropriately, correct use of appropriate machines and tools for pesticide application, collecting and properly disposing of pesticide waste resulting from pesticide application, and safety precautions must be followed. By carefully applying these measures, the negative effects of pesticides can be minimized.

**Key Words:** Pesticides, Agricultural products, Chemical control

## HAYVANCILIK İŞLETME ATIKLARININ ÇEVREYE ETKİLERİ VE EKONOMİYE KAZANDIRILMASI

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### ÖZET

Hayvancılık işletmeleri, ekonomik faaliyetlerin önemli bir parçasıdır. Ancak, bu işletmelerin çevreye olan etkisi, özellikle atıkların yönetimi konusunda dikkatli olunması gerekmektedir. Hayvancılık işletme atıkları, genellikle işletmelerde hayvan yetiştiriciliği yapılan alanlarda ortaya çıkan organik ve inorganik atıkları ifade eder. Hayvancılık işletmelerinin atıkları, hayvanların beslenmesi, bakımı, sağlığı ve üretimi sırasında ortaya çıkan katı, sıvı veya gaz halindeki maddelerdir. İşletmelerde atık yönetimi, atıkların toplanması, işlenmesi ve uygun bir şekilde bertaraf edilmesini içerir. Bu süreçler, işletme atıklarının çevreye olumsuz etkilerini en aza indirgeyerek çevre dostu bir yaklaşım teşvik eder. Aksi takdirde, su, hava ve toprak kirliliğine neden olur. Kirliliği azaltabildiği gibi aynı zamanda hayvancılık işletmecilerine maliyet tasarrufu da sağlayabilir, çünkü atıkların geri dönüştürülmesi veya enerji üretimi için kullanılması gibi yöntemlerle ekonomik fayda elde edilebilir. Hayvancılık işletmeleri atıkları, çiftliklerin çevresel etkilerini azaltmak ve sürdürülebilir bir tarımı benimsemek için dikkate alınması gereken önemli bir konudur. Atıkların etkili bir şekilde yönetilmesi, çevre, toprak ve su kaynaklarının korunması açısından önemli bir role sahiptir. Bu çalışmada, hayvancılık işletmelerindeki atıkların çevreye etkileri ve ekonomiye kazandırılması ele alınmıştır.

**Anahtar Kelimeler :** Hayvancılık, atık, kirlilik,

## YENİLENEBİLİR ENERJİ KAYNAKLARININ HAYVANCILIKTA ÖNEMİ

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### ÖZET

Enerji tüketimde önemli bir yeri olan hayvancılık, tarım sektörünün vazgeçilmez bir parçasıdır. Fosil yakıtlardan kaynaklanan çevresel etkilerin ve kaynakların sınırlılıklarının giderek artmasıyla birlikte, yenilenebilir enerji kaynakları, özellikle hayvancılık sektörüne çeşitli avantajlar sunmaktadır. Yenilenebilir enerji kaynakları, fosil yakıtların aksine çevreye zarar vermeden, sınırsız ve ucuz bir şekilde enerji sağlayan kaynaklardır. Bu kaynaklardan bazıları güneş, rüzgar, jeotermal, biyogaz ve dalga enerjisidir. Hayvancılıkta enerji ihtiyacı, hayvanların beslenmesi, barınması, sağlığı, ısıtma, soğutma, sulama, aydınlatma, ürün işleme ve nakliye gibi pek çok alanda ortaya çıkmaktadır. Güneş panellerinin hayvancılık işletme binalarının çatılarına veya açık arazilere kurularak kendi elektriğini üreterek kendi ihtiyacını karşılama olanağı sunar. Özellikle büyük işletmelerde ortaya çıkan hayvan atıkları, biyogaz üretimi için ana hammadde olarak kullanılabilir ve bu sayede sıcak su üretimi, ısıtma sistemleri veya elektrik üretimi için kullanılabilir. Yenilenebilir enerji kaynaklarının hayvancılık faaliyetlerinde kullanımı, işletmelerin daha sürdürülebilir ve çevre dostu olmasına olanak sağladığı gibi, enerji güvenilirliğini artırabilir ve sektöre ekonomik fayda sağlar. Bu çalışmada ilk yatırım maliyetlerinin yüksek ancak sürdürülebilir enerji olan yenilenebilir enerji kaynaklarının hayvancılık işletmelerinde kullanımından ve öneminden bahsedilecektir.

**Anahtar Kelimeler:** Güneş enerjisi, biyogaz, sürdürülebilirlik, çevre

## MACAR FİĞİ (*Vicia pannonica* Crantz) VE ARPA (*Hordeum vulgare* L.) KARIŞIM ORANLARININ BAZI SİLAJ ÖZELLİKLERİNE ETKİSİ

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### ÖZET

Bu çalışma, Macar fiği (*Vicia pannonica* Crantz) ile arpa (*Hordeum vulgare* L.) karışımlarının silaj kalitesinin belirlenmesi amacıyla yürütülmüştür. Çalışmada silaj materyali olarak Macar fiğinin “Anadolu Pembesi-2002”, arpanın “Finola” çeşidi kullanılmıştır. Araştırmada, bitkiler; 2022-2023 vejetasyon döneminde Siirt Üniversitesi Ziraat Fakültesi, Araştırma ve Uygulama Arazisi’nde kışlık olarak yetiştirilmiştir. Çalışmada; % 100 Macar fiği (M), % 100 arpa (A), % 25 M + % 75 A, % 50 M + % 50 A ve % 75 M + % 25 A karışım oranları araştırma konusunu oluşturmuştur. Silaj için arpa süt olum başlangıcında, Macar fiği tam çiçeklenme döneminde biçilmiştir. Hasadı yapılan bitkiler bir süre (5-6 saat) gölge ortamda soldurulmuş ve bu işlemde sonra tüm bitki materyalleri 1-2 cm büyüklüğünde satır yardımıyla el ile parçalanarak silaj için hazır hale getirilmiştir. Parçalanmış bitki materyalleri, araştırmada ele alınan silaj konularına göre 1 litrelik cam kavanozlara doldurulmuş ve 45 gün süreyle 25±2 °C’de fermantasyona bırakılmıştır. Silajlar her bir konu için üç tekerrürlü olarak hazırlanmıştır. Fermantasyon sonunda silaj örneklerinde; fiziksel özellikler (koku, strüktür ve renk) ile kuru madde (KM) ve pH analizleri yapılmış; ayrıca, silajların toplam fiziksel puanı (DLG) ve Fleig puanı hesaplanarak silaj kalite sınıfları belirlenmiştir. Araştırma sonucunda, silajlar fiziksel özellikleri yönünden incelendiğinde; en yüksek puanı 20.0 ile % 25 M + % 75 A silajından elde edilirken, en düşük puan ise 14.3 ile % 100 Macar fiği silajından elde edilmiştir. Elde edilen silajların pH değeri 4.43-4.91, KM oranı % 28.09-34.75 ve Fleig puanı 64.9-96.2 arasında değişim göstermiştir. Fleig puanı yönünden silajların kalite sınıfları “iyi” ile “çok iyi” arasında bulunmuştur. İncelenen tüm parametreler açısından % 25 Macar fiği + % 75 arpa karışımının ön plana çıktığı sonucuna varılmıştır.

**Anahtar Kelimeler:** Silaj, Macar Fiği, Arpa, Fiziksel Özellik, Fleig Puanı

### EFFECT OF HUNGARY VETCH (*Vicia pannonica* Crantz) AND BARLEY (*Hordeum vulgare* L.) MIXTURE RATIOS ON SOME SILAGE PROPERTIES

#### ABSTRACT

This study was carried out to determine the silage quality of Hungarian vetch (*Vicia pannonica* Crantz) and barley (*Hordeum vulgare* L.) mixtures. In the study, Hungarian vetch "Anadolu Pembesi-2002" variety and barley "Finola" variety were used as silage material. In the research, plants; it was grown as a winter crop in the Research and Application Land of Siirt University Faculty of Agriculture during the 2022-2023 vegetation period. In the study; the subject of the



research was the mixture ratios of 100% Hungarian vetch (H), 100% barley (B), 25% H + 75% B, 50% H + 50% B and 75% H + 25% B. For silage, barley was harvested at the beginning of milk maturity and Hungarian vetch was harvested at full bloom. The harvested plants were withered in the shade for a while (5-6 hours), and after this process, all plant materials were shredded manually with a 1-2 cm sized cleaver and made ready for silage. Shredded plant materials were filled into 1-liter glass jars according to the silage topics discussed in the research and left to ferment at  $25\pm 2$  °C for 45 days. Silages were prepared in three replicates for each subject. In silage samples at the end of fermentation; physical properties (odor, structure and color) as well as dry matter (DM) and pH were analyzed; additionally, silage quality classes were determined by calculating the total physical score (DLG) and Fleig score of the silages. As a result of the research, when silages were examined in terms of their physical properties; the highest score was obtained from 25% H + 75% B silage with 20.0, while the lowest score was obtained from 100% Hungarian vetch silage with 14.3. The pH value of the silages obtained varied between 4.43-4.91, the DM ratio between 28.09-34.75% and the Fleig score between 64.9-96.2. The quality classes of the silages in terms of Fleig score were found to be between “good” and “very good”. It was concluded that the mixture of 25% Hungarian vetch + 75% barley came to the fore in terms of all parameters examined.

**Keywords:** Silage, Hungarian Vetch, Barley, Physical Property, Fleig Score

## KÜKÜRT DOZLARINA BAĞLI OLARAK KOCA FİĞ (*Vicia narbonensis* L.) BİTKİSİNDE BAZI TARIMSAL KARAKTERLERİN DEĞİŞİMİ

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### ÖZET

Bu araştırmada, koca fiğ (*Vicia narbonensis* L.) bitkisinde farklı düzeydeki kükürt (S) uygulamalarının bazı tarımsal özellikler üzerine etkisinin belirlenmesi amaçlanmıştır. Araştırma, Türkiye'nin yarı-kurak iklimine sahip Güneydoğu Anadolu Bölgesi'nde yer alan Siirt ili koşullarında, 2022-2023 vejetasyon döneminde Siirt Üniversitesi, Ziraat Fakültesi, Araştırma ve Deneme Arazisi'nde yürütülmüştür. Çalışmada bitkisel materyal olarak Görkem koca fiğ çeşidi kullanılmıştır. Kükürdün 0 (S<sub>0</sub>), 1 (S<sub>1</sub>), 2 (S<sub>2</sub>), 3 (S<sub>3</sub>) ve 4 (S<sub>4</sub>) kg/da dozlarının araştırma konusu olarak ele alındığı çalışmada; tarla denemesi, tesadüf blokları deneme desenine göre 4 tekrarlamalı olarak kurulmuştur. Bitkiler 25 cm sıra arası mesafede ve 6 sıra olacak şekilde, 18 kg/da ekim normu ile ekilmiş olup; parsel büyüklüğü, 1.5x2= 3.0 m<sup>2</sup>'dir. Toprak analiz sonuçlarına göre ekimle birlikte, her parselde homojen olarak; 4 kg N/da azotlu gübre (Üre, % 46 N) ve 10 kg P<sub>2</sub>O<sub>5</sub>/da fosforlu gübre (Triple süper fosfat, % 43-44 P<sub>2</sub>O<sub>5</sub>) uygulanmıştır. Ekim işlemi 26 Kasım 2022 tarihinde yapılmış olup; biçimler, bitkilerin tam çiçeklenme-bakla bağlama başlangıcı devresinde 08 Mayıs 2023 tarihinde yapılmıştır. Araştırmada, doğal bitki boyu, ana sap uzunluğu, sap kalınlığı, yeşil ve kuru ot verimi parametreleri incelenmiştir. Araştırma sonuçlarına göre doğal bitki boyu hariç, diğer incelenen parametreler açısından S dozları arasında anlamlı (p<0.01) farklılıklar tespit edilmiştir. Kükürt dozunun artışına paralel olarak S<sub>2</sub> dozuna kadar tarımsal özelliklerde artış tespit edilmiş, daha sonraki dozlarda ise anlamlı azalmalar görülmüş; ancak, S<sub>1</sub> ve S<sub>2</sub> dozları arasındaki farklılık önemsiz bulunmuştur. Kükürt eksikliğinin söz konusu olduğu toprakta, koca fiğ bitkisi için 1 kg S/da dozu uygulanabilir.

**Anahtar Kelimeler:** Koca Fiğ, Kükürt, Ot Verimi, Ana Sap Uzunluğu

### CHANGE OF SOME AGRICULTURAL CHARACTERS IN NARBON VETCH (*Vicia narbonensis* L.) PLANT DEPENDING ON SULFUR DOSES

#### ABSTRACT

In this research, it was aimed to determine the effect of different levels of sulfur (S) applications on some agricultural characteristics of the narbon vetch (*Vicia narbonensis* L.) plant. The research was carried out in Siirt University, Faculty of Agriculture, Research and Experimental Land during the 2022-2023 vegetation period, under the conditions of Siirt province, located in the Southeastern Anatolia Region of Türkiye, which has a semi-arid climate. Görkem narbon vetch varieties were used as plant material in the study. In the study, 0 (S<sub>0</sub>), 1 (S<sub>1</sub>), 2 (S<sub>2</sub>), 3

(S<sub>3</sub>) and 4 (S<sub>4</sub>) kg/da doses of sulfur were considered as the research subject; the field experiment was set up according to the randomized completed design with 4 replications. Plants were sowing in 6 rows with 25 cm row spacing, with a sowing norm of 18 kg/da; parcel size is 1.5x2= 3.0 m<sup>2</sup>. According to the soil analysis results, with sowing, homogeneously in each parcel; 4 kg N/da nitrogenous fertilizer (Urea, 46% N) and 10 kg P<sub>2</sub>O<sub>5</sub>/da phosphorus fertilizer (Triple super phosphate, 43-44% P<sub>2</sub>O<sub>5</sub>) were applied. The sowing process was carried out on November 26, 2022; the harvesting were made on May 08, 2023, during the period when the plants were in full bloom and the beginning of pod setting. In the research, natural plant height, main stem length, stem thickness, fresh and hay yield parameters were examined. According to the research results, significant (p<0.01) differences were detected between S doses in terms of other examined parameters, except for natural plant height. In parallel with the increase in sulfur dose, an increase in agricultural characteristics was detected up to the S<sub>2</sub> dose, and significant decreases were observed in later doses; however, the difference between S<sub>1</sub> and S<sub>2</sub> doses was found to be insignificant. In soil with sulfur deficiency, 1 kg S/da dose can be applied for narbon vetch plant.

**Keywords:** Narbon Vetch, Sulfur, Forage Yield, Main Stem Length

## BAZI TABLET DETERJANLARIN *PISUM SATIVUM* L. TOHUMLARINDA ÇİMLENME VE KÖK UZUNLUĞUNA ETKİLERİ

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### ÖZET

Deterjanlar günlük hayatta çok sık kullanılan kimyasallar arasında yer almaktadır. Deterjanların içinde bulunan bazı kimyasal bileşenler organizmalar için toksik etki yapmaktadır. Bu çalışmada, bezelye bitkisi tohumları üzerinde, bulaşık makinelerinde kullanılan bazı deterjanların etkilerinin araştırılması amaçlandı. Çalışmada 2 adet çevre dostu ve 2 adet standart olmak üzere toplam 4 adet tablet deterjan kullanarak bezelye (*Pisum sativum*) tohumları üzerinde EC50 değerleri (kök uzunluğunu yarıya indiren etki konsantrasyonu) hesaplandı. Çevre dostu deterjanlar sırasıyla, E1 ve E2 olarak standart deterjanları ise, S1 ve S2 olarak adlandırıldı. EC50 değeri hesaplamaları için her bir deterjandan 9 farklı doz hazırlandı. Sterilize edilmiş *P. sativum* tohumları kök oluşumu için belirlenen dozlar uygulanarak etüvde 25°C sıcaklıkta bekletildi ve 3. günün sonunda EC50 değerleri hesaplandı. EC50 değerleri; E1 deterjanı için 3 g/L, E2 deterjanı için 4 g/L, S1 deterjanı için 4 g/L ve S2 deterjanı için 4 g/L olarak belirlendi. Elde edilen veriler doğrultusunda EC50 ve 2X EC50 konsantrasyonları hazırlanarak mitotik indeks yüzdeleri hesaplandı. Sonuç olarak çevre dostu tablet deterjanların ve standart tablet deterjanların EC50 değerleri birbirine oldukça yakın olduğu tespit edildi. S1, S2 deterjanlarının ve E1, E2 deterjanlarının *P. sativum* tohumlarında kontrole göre kök uzunluğunu inhibe ettikleri saptandı. Konsantrasyon miktarları arttıkça tohum kök uçlarında sararma ve kararma gözlemlendi. Standart tablet deterjanların çevre dostu tablet deterjanlara oranla mitotik aktiviteyi azalttığı bulundu. Verilerimiz bu deterjanların kullanımı sırasında meydana gelebilecek doz aşımının sitotoksik etkilere neden olabileceğini gösterdi.

**Anahtar Kelimeler:** *Pisum sativum*, EC50, tablet deterjanları, kök uzunluğu, mitotik indeks

## Effects of Some Tablet Detergents on Germination and Root Length of *Pisum sativum* L. Seeds

### ABSTRACT

Detergents are among the most frequently used chemicals in daily life. Some chemical components in detergents are toxic to organisms. In this study, it was aimed to investigate the effects of some detergents used in dishwashers on pea plant seeds. In the study, EC50 values (concentration of action that halves the root length) were calculated on pea (*Pisum sativum*) seeds using a total of 4 tablet detergents, 2 environmentally friendly and 2 standard detergents. Environmentally friendly detergents were designated E1 and E2, and standard detergents were designated S1 and S2, respectively. For EC50 value calculations, 9 different doses of each detergent were prepared. Sterilized *P. sativum* seeds were kept in an oven at 25°C by applying the doses determined for root formation and EC50 values were calculated at the end of the 3rd day. EC50 values were determined as 3 g/L for E1 detergent, 4 g/L for E2 detergent, 4 g/L for S1 detergent and 4 g/L for S2 detergent. According to the data obtained, EC50 and 2X EC50 concentrations were prepared and mitotic index percentages were calculated. As a result, it was found that the EC50 values of environmentally friendly and standard detergents were very close to each other. S1, S2 detergents and E1, E2 detergents were found to inhibited root length in *P. sativum* seeds compared to control. As the concentrations increased, yellowing and blackening of the seed root tips were observed. Standard tablet detergents were found to reduce mitotic activity compared to environmentally friendly tablet detergents. Our data showed that overdose may cause cytotoxic effects during the use of these detergents.

**Keywords:** *Pisum sativum*, EC50, tablet detergents, root length, mitotic index

## ARBUSKÜLER MİKORİZAL FUNGUS (AMF) SPURU VE MAP GÜBRE UYGULAMASININ BAZI MISIR ÇEŞİTLERİ İLE TOPRAK ÖZELLİKLERİ ARASINDAKİ İLİŞKİLER ÜZERİNE ETKİSİ

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### ÖZET

Arbusküler Mikorizal Fungus (AMF)'lar doğada yaşayan kültür dışı bitkilerin hayatta kalmalarında önemli bir strateji ortaklığıdır. Bu nedenle doğadaki bu doğal mekanizmadan kültür bitkileri yetiştiriciliğinde de faydalanmak gereklidir. Kullanılan gübre miktarını azaltma açısından bu simbiyotik mutualizm bitki yetiştiriciliğinde mutlaka yer almalıdır. Doğada serbest halde birçok bitki ile sıkı bir ortaklık oluşturan bu mantarların çalışma gücü birçok biyotik ve abiyotik faktör tarafından etkilenir. Yetiştirilen bitkinin saf ya da hibrit olması ya da toprağa verilen kimyasal gübreden nasıl bir etki oluşacağı ile ilgili fazla bir çalışma yapılmamıştır. Bunu anlamak için Sakarya Mısır Araştırma Enstitüsü'nde ADA mısır popülasyonu üzerinde yürütülen ıslah çalışmalarının farklı döngülerinden alınan mısır popülasyonun başlangıç materyali "Adapop1-C<sub>0</sub> (G<sub>1</sub>)", 2 döngü tamamlanmış materyali "Adapop1(S<sub>1</sub>)C<sub>2</sub> (G<sub>2</sub>)", 4 döngü tamamlanmış materyali "Adapop1(S<sub>1</sub>)-C<sub>4</sub> (G<sub>3</sub>)" ve piyasadan temin edilmiş DEKALB DKC 5741 at dişi mısır tohumları (G<sub>4</sub>) kullanılmıştır. Düşük organik madde ve yüksek kireç içerikli, kumlu killi tınlı bir toprak kullanılmıştır. Fosforlu gübre olarak MAP (0-100 mg kg<sup>-1</sup>) ve AMF spuru olarak ta SHUBHODAYA ticari isimli (0-200 adet) mikrobiyal gübre kullanılmıştır. Yaklaşık 70 günlük bir denemenin ardından toprak analiz sonuçları ile yapılan uygulamalar arasındaki ilişkiler korelasyon analizi ile belirlenmiştir. Analiz sonucuna göre; kullanılan mısır çeşidi ile Ca, Mg arasında negatif ve önemli, spor sayısı ile pozitif ama önemsiz bir ilişki görülmüştür. AMF spor uygulaması ile toprağın spor sayısı ve Ca-Mg içeriği ile pozitif ve önemli, P-Fe-Mn içeriği ile pozitif ve çok önemli, N ve K içeriği ile negatif ve önemli, organik madde içeriği ile de negatif ve önemsiz bir ilişki belirlenmiştir. Fosforlu gübre uygulaması ise toprağın spor sayısı ve kireç içeriği ile pozitif ve önemli bir ilişki gösterirken, organik madde içeriği ile negatif ancak çok önemli bir ilişki ortaya koymuştur.

**Anahtar Kelimeler:** Arbusküler Mikorizal Fungus, mısır, spor, gübre, korelasyon.

## The Impact of Arbuscular Mycorrhizal Fungus (AMF) Spore and MAP Fertilizer Application on the Relationships Between Some Maize Varieties and Soil Properties

### ABSTRACT

Arbuscular Mycorrhizal Fungi (AMF) represent a crucial symbiotic partnership in the survival of non-cultivated plants in nature. Therefore, it is necessary to benefit from this natural mechanism in the cultivation of cultural crops in nature as well. In terms of reducing the amount of fertilizer used, this symbiotic mutualism must necessarily be included in plant cultivation. The functional capacity of these fungi, which form strong partnerships with many plants in their natural state, is influenced by various biotic and abiotic factors. There has not been much research conducted on whether the cultivated plant is pure or hybrid, and the impact of the chemical fertilizer applied to the soil. To address this gap, maize populations obtained from different breeding cycles of ADA maize at the Sakarya Maize Research Institute were utilized as follows: the initial material from the breeding program "Adapop1-C<sub>0</sub> (G<sub>1</sub>)," material after two cycles "Adapop1(S<sub>1</sub>)C<sub>2</sub> (G<sub>2</sub>)," material after four cycles "Adapop1(S<sub>1</sub>)-C<sub>4</sub> (G<sub>3</sub>)," and commercially acquired DEKALB DKC 5741 female maize seeds (G<sub>4</sub>). A soil with low organic matter and high lime content, characterized by a sandy clay loam texture, has been used. Monoammonium phosphate (MAP, 0-100 mg kg<sup>-1</sup>) was used as phosphorus fertilizer, and SHUBHODAYA, a commercial microbial fertilizer, was used as AMF spores (0-200 units). After an approximately 70-day experiment, the relationships between soil analysis results and treatments were determined through correlation analysis. According to the analysis, a negative and significant relationship was observed between the maize variety used and Ca, Mg, while a positive but insignificant relationship was observed with spore count. The application of Arbuscular Mycorrhizal Fungus (AMF) spores was found to establish a positive and significant correlation with soil spore count and Ca-Mg content. Additionally, a positive and highly significant relationship was identified with P-Fe-Mn content. Conversely, a negative and significant correlation was established with N and K content, while a negative and insignificant relationship was determined with organic matter content. Phosphorus fertilizer application demonstrated a positive and significant relationship with spore count and lime content and a negative but highly significant relationship with organic matter content.

**Keywords:** Arbuscular Mycorrhizal Fungus, maize, spore, fertilizer, correlation.



## NARİNGENİN'İN ANTİDİYABETİK OLDUĞU İDDİALARI YANLIŞ OLABİLİR

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### ÖZET

Diyabet, insan yaşamını olumsuz etkileyen, tedavi edilmediği takdirde hayati organlarda ciddi ve kalıcı hasarlara yol açabilen, son zamanlarda en sık görülen ölüm nedenlerinden biri olan bir hastalıktır. Bitkilerin ilaç, gıda ve kozmetik amaçlı kullanımı; insanın varoluşu ile başlamış ve günümüze kadar devam etmiştir. Bitkilerden elde edilen fitokimyasal bileşikler son yıllarda diyabet tedavisinde kullanım alanı bulmaya başlamıştır. Naringenin ve glikozidi, greylift, bergamot, ekşi portakal, kiraz, domates, kakao ve tarçın dahil olmak üzere çeşitli bitki ve meyvelerde bulunur. Bazı çalışmalarda, naringenin bağırsak fırça sınırından glikoz adsorpsiyonunu azaltabileceği, böbrek glikoz reabsorpsiyonunu azaltabileceği ve kas ve yağ dokuları tarafından glikoz alımını ve kullanımını artırabileceği bildirilmiştir. Naringenin'in antidiyabetik etkisini pankreasta  $\beta$  hücrelerini koruyarak ve bu hücrelerin glikoz algılama kapasitesini ve glikoza verdikleri yanıtı artırarak gösterdiği de bildirilmiştir. Buna ek olarak, naringenin'in antidiyabetik etkilerini gösteren sınırlı epidemiyolojik çalışmalar bildirilmiştir. Literatürdeki bu bilginin aksine, bu sunum naringenin'in diyabetik durumu ağırlaştırma potansiyeline odaklanacaktır. Naringenin'in antidiyabetik özelliklerini araştırırken, beklentilerimin aksine naringenin'in aslında diyabetik olabileceği anlaşıldı. Laboratuvar çalışmalarımda naringenin'in a-glukozidaz enzimi için inhibitör etkisi olduğunu ancak a-amilaz enzimi için güçlü bir aktivatör olduğu ortaya çıktı. Yani amilaz enzimi nişastayı parçalarken eğer ortamda naringenin varsa bu işlemi çok daha hızlı gerçekleştiriyor. Bu da karbonhidrat oranı yüksek gıdalarla birlikte naringenin tüketmenin bu kişilerde kan glikoz seviyelerini hızla yükseltebileceği anlamına geliyor. Yapılan deneyler in vitro düzeyde olduğu için daha net bir sonuç ifade etmek doğru olmayabilir. Ancak literatürde hem naringenin hem de naringenin içeren gıdaların antidiyabetik olarak önerilmesinin riskli bir yaklaşım olduğunu ve yeniden tartışmaya açılması gerektiğini savunuyorum.



**Anahtar Kelimeler:** Narenciyeler, Naringenin, Diyabet, Amilaz enzimi

## IT IS POSSIBLE THAT CLAIMS REGARDING THE ANTI-DIABETIC PROPERTIES OF NARINGENIN ARE INCORRECT

### ABSTRACT

Diabetes is a disease that can have serious and permanent effects on vital organs if left untreated, and is one of the leading causes of death. The use of plants for medicinal, food, and cosmetic purposes has been a practice since the beginning of human existence. Recently, phytochemical compounds derived from plants have been utilized in the treatment of diabetes. Naringenin and its glycoside are present in a variety of plants and fruits, such as grapefruit, bergamot, sour orange, cherry, tomato, cocoa, and cinnamon. Several studies have reported that naringenin can reduce glucose absorption from the intestinal brush border, decrease renal glucose reabsorption, and increase glucose uptake and utilization by muscle and adipose tissues. Additionally, naringenin has been shown to have an antidiabetic effect by protecting  $\beta$  cells in the pancreas and enhancing their glucose sensing capacity and response to glucose. Limited epidemiological studies have reported the antidiabetic effects of naringenin. However, this presentation will focus on the potential of naringenin to aggravate the diabetic state, which contrasts with the information presented in the literature. During my investigation into the antidiabetic properties of naringenin, it was discovered that, contrary to initial expectations, naringenin may actually have a diabetic effect. Laboratory studies revealed that naringenin has an inhibitory effect on the  $\alpha$ -glucosidase enzyme, but is a strong activator of the  $\alpha$ -amylase enzyme. In other words, the presence of naringenin in the environment accelerates the process of starch breakdown by the amylase enzyme. Consuming naringenin with foods high in carbohydrates can rapidly increase blood glucose levels in some individuals. The experiments conducted in vitro may not provide a definitive result. Therefore, it is risky to recommend both naringenin and naringenin-containing foods as antidiabetic, and this approach should be reopened for discussion.

**Keywords:** Citrus fruits, Naringenin, Diabetes, Amylase enzyme

## ERKEN HASATIN SOĞUK SIKIM ZEYTİNYAĞINDA TOPLAM FENOLİK VE TOPLAM FLOVANOİD MİKTARI ÜZERİNE ETKİSİ

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### ÖZET

Hasat zamanına bağlı olarak zeytinyağlarının fitokimyasal içerik, besin değeri ve biyolojik aktiviteleri arasında farklılıklar oluşturmaktadır. Bu çalışmanın amacı; Şanlıurfa’da yetiştirilen ve zeytin meyvelerinin, henüz tam olgunlaşmadan hasat edilmesinin zeytin yağının toplam fenolik miktarı (TPC) ve toplam flavonoid miktarı (TFC) üzerine etkisini belirlemektir. Bu amaçla Şanlıurfa Bozova mevkiinde yetiştirilen ve zeytin meyveleri Ekim ayının son haftasında toplanmış ve oda sıcaklığında soğuk sıkım yapan makinede zeytinyağı üretimi yapılmıştır. Üretim işleminden sonra zeytinyağı örnekleri yağ/çözücü oranı 1/1 olacak şekilde, iki farklı fraksiyonlama ile ekstrakte edilmiştir. Ayrıca titrasyon tekniği ile asitlik derecesi belirlenmiştir. Birincisi metanol-hekzan (%50) karışımı ile fraksiyonlama, ikincisi sadece metanol kullanılarak fraksiyonlama yapılmıştır. Burada fraksiyonlama tekniğinin içeriğe etkisinin araştırılması da hedeflenmiştir. Fraksiyonlama işleminden sonra yağ ve çözücü santrifüjlenerek üstte kalan çözücü fraksiyonu alınmış ve analizler yapılmıştır. Elde edilen ekstratlar, toplam fenolik bileşiklerin içeriği (TPC), Singleton ve ark., yöntemine göre Folin-Ciocalteus reaktifi kullanılarak belirlendi. Zeytin yağının asitlik derecesi 0,6 oleik asit olarak bulunmuştur. Toplam flavonoid içeriği (TFC), alüminyum klorür kolorimetrik tahlili ile belirlendi. Yapılan analiz sonucunda zeytinyağı fraksiyonlarının metanol ve hekzan-metanol ekstraktlarının TPC’leri sırasıyla;  $3,01 \pm 0,014$  ve  $1,28 \pm 0,009$  mg GA/g ekstre olarak belirlenmiştir. Zeytinyağı fraksiyonlarının metanol ve hekzan-metanol ekstraktlarının TFC’leri sırasıyla  $2,43 \pm 0,021$  ve  $3,15 \pm 0,012$  mg Quercetin eşdeğeri /g ekstre olarak belirlenmiştir. Ayrıca farklı fraksiyonlama tekniğinin, toplam biyoaktif bileşen miktarını istatistiksel olarak anlamlı bir şekilde TPC’de negatif yönde ( $P \leq 0,001$ ) TFC’de pozitif yönde ( $P \leq 0,05$ ) değiştirdiği belirlenmiştir. Sonuç olarak zeytin meyvelerinin erken hasat edilmesinin, asitliğini düşürdüğü, yağın toplam aktif bileşen içeriğinin arttırdığı ve buna bağlı olarak biyolojik aktivitesine pozitif yönde etki edeceği değerlendirilebilir.

**Anahtar Kelimeler:** Zeytin yağı, Erken hasat, Toplam flavonoid, Toplam fenolik

## THE EFFECT OF EARLY HARVEST ON TOTAL PHENOLIC AND TOTAL FLAVONOİD CONTENT IN COLD PRESSED OLIVE OIL

### Abstract

Variations in the phytochemical content, nutritional value, and biological activities of olive oils are contingent upon the timing of the harvest. Therefore, the objective of this investigation was to ascertain the impact of collecting olives grown in Şanlıurfa before complete maturation on the total phenolic content (TPC) and total flavonoid content (TFC) of the resultant oil. Olive fruits cultivated in Bozova, Şanlıurfa were harvested in the final week of October. Subsequently, a cold press machine at room temperature was used to produce olive oil. After the oil production process, olive oil samples underwent two different extractions using a solvent ratio of 1:1. The titration technique was used to determine acidity. The first extraction involved fractionation with a mixture of methanol and hexane (50%), while the second extraction used methanol alone. The study also aimed to examine the impact of the fractionation technique on the content of the extracted oil. Following fractionation, the oil and solvent were centrifuged and the upper solvent fraction was analysed. The content of total phenolic compounds (TPC) in the extracts was determined using Folin-Ciocalteus reagent following the method of Singleton et al. The acidity level of olive oil was determined to be 0.6 oleic acid. Total flavonoid content (TFC) was assessed using the aluminium chloride colorimetric assay. From the analysis, the TFCs of olive oil fractions extracted using methanol and hexane-methanol were found to be  $3.01 \pm 0.014$  and  $1.28 \pm 0.009$  mg GA/g extract, respectively. The TFCs for methanol and hexane-methanol extracts of olive oil fractions were evaluated as  $2.43 \pm 0.021$  and  $3.15 \pm 0.012$  mg quercetin equivalent/g extract, respectively. Furthermore, various fractionation techniques were found to have a statistically significant impact on the total quantity of bioactive components present in TPC ( $P \leq 0.001$ ) and TFC ( $P \leq 0.05$ ), wherein the former was negatively impacted and the latter positively impacted. It can be concluded that the early harvest of olive fruits leads to a decrease in acidity and an increase in the total active component content of the oil, resulting in a positive impact on its biological activity.

**Keywords:** Olive oil, Early harvest, Total flavonoids, Total phenolics

## PLANT PROTECTION PROBLEMS AND SOLUTION SUGGESTIONS OF SÖĞÜT DISTRICT PLATEAU GREENHOUSE PRODUCERS

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### ABSTRACT

In this study, the plant protection problems of greenhouse producers producing plateau tomatoes in Söğüt district of Burdur province were determined and solution suggestions were presented. For this purpose, one-on-one interviews were held with a total of 50 randomly selected greenhouse producers, survey questions were asked to these people, and the results were evaluated as a percentage. According to the survey results, producers have very little knowledge about diseases and pests, when they encounter diseases and pests, they primarily consult pesticide dealers, producers use pesticides as soon as diseases and pests are seen, in general, they do not have soil analysis before planting, they do not rely too much on cultural control methods. It was determined that they did not comply. Producers mostly complained about the expensive prices of fertilizers and pesticides, as well as high labor costs and selling their products cheaply. According to the results of the research, manufacturers think that the pesticides they use are not harmful to humans, the environment and other living things, and they do not have information about terms such as waiting time and LD<sub>50</sub>. Producers were also asked whether they use biological control, but they stated that it is difficult to implement this and the effects can only be seen after a long time, and they also stated that it is not possible to use biological products because they are expensive. Producers who produce tomatoes in Söğüt district should be given educational seminars from time to time, they should be supported in modern production, and they should be encouraged to use biological products by reducing the use of chemical pesticides for the safe of the environment and human health.

**Keywords:** Plateau Greenhouse Production, Plant Protection, Biological Control, Söğüt

### SÖĞÜT BELDESİ YAYLA SERA ÜRETİCİLERİNİN BİTKİ KORUMA SORUNLARI VE ÇÖZÜM ÖNERİLERİ

### ÖZET

Bu çalışmada, Burdur ilindeki Söğüt ilçesindeki yayla domates üretimi yapan sera üreticilerinin bitki koruma sorunları belirlenmiş ve çözüm önerileri sunulmuştur. Bu amaçla tesadüf olarak seçilen toplam 50 sera üreticisi ile birebir görüşmeler yapılarak bu kişilere anket soruları sorulmuş ve sonuçlar % olarak değerlendirilmiştir. Anket sonuçlarına göre üreticilerin, hastalık ve zararlılar hakkında çok az bilgi sahibi oldukları, üreticilerin hastalık ve zararlılarla

karşılaştıklarında öncelikli olarak zirai ilaç bayilerine danıştıkları, üreticilerin hastalık ve zararlı görülür görülmez hemen pestisit kullandıkları, genel anlamda dikim öncesi toprak analizi yaptırmadıkları, kültürel mücadele yöntemlerine çok fazla riayet etmedikleri belirlenmiştir. Üreticiler en çok gübre ve pestisit fiyatlarının pahalı olmasından, bunun yanında işçilik ücretlerinin fazla olmasından ve ürünlerini ucuza sattıklarından şikayette bulunmuşlardır. Yapılan araştırma sonuçlarına göre, üreticiler kullandıkları pestisitlerin insan, çevre ve diğer canlılara zararlı olmadığını düşünmekte, bekleme süresi ve LD<sub>50</sub> gibi terimler hakkında da bilgi sahibi olmadıkları görülmüştür. Üreticilere biyolojik mücadele yapıp yapmadıkları da sorulmuş ancak bunu uygulamanın zor ve etkilerinin ancak uzun zaman sonra görülebileceğini belirtmişler, ayrıca biyolojik ürünlerin pahalı olması nedeniyle kullanmalarının mümkün olmadığını da ifade etmişlerdir. Söğüt ilçesi yayla domates üretimi yapan üreticilere zaman zaman eğitici seminerler verilmeli, modern üretim konusunda desteklenmeli, çevre ve insan sağlığı için de kimyasal pestisit kullanımının azaltılarak biyolojik ürünleri kullanmaları konusunda teşvik edilmeleri gereklidir.

**Anahtar Kelimeler:** Yayla Sera Üretimi, Bitki Koruma, Biyolojik Mücadele, Söğüt

## EVALUATION OF THE KNOWLEDGE STATUS OF CULTIVATED MUSHROOM PRODUCERS IN KORKUTELİ DISTRICT OF ANTALYA PROVINCE ABOUT ORGANIC AGRICULTURE

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### ABSTRACT

In this study, information about organic agriculture was obtained by making on-site visits to the producers producing edible mushrooms in Korkuteli district of Antalya province, and the results were evaluated as a percentage. One-on-one interviews were conducted with a total of 100 randomly selected producers and these producers were asked different survey questions regarding organic agriculture. According to the results of the survey conducted with the producers, they stated that the producers did not have knowledge about growing organic products, that although organic products were sold at high prices, they did not want to engage in organic farming because they required a lot of labor and that it was an expensive production system, and that they thought that it could not be a profitable production. According to the results of the research, it has been determined that the majority of producers want to be informed about organic agriculture, they do not have information about whether organic agriculture supports are available, they find organic pesticides expensive and therefore they cannot use this group of pesticides.

**Keywords:** Cultivated mushroom, Organic Agriculture, Korkuteli, Antalya

## ANTALYA İLİ KORKUTELİ İLÇESİ YEMEKLİK KÜLTÜR MANTARI ÜRETİCİLERİNİN ORGANİK TARIM HAKKINDAKİ BİLGİ DURUMLARININ DEĞERLENDİRİLMESİ

### ÖZET

Bu çalışmada, Antalya ili Korkuteli ilçesinde yemeklik kültür mantarı üretimi yapan üreticilere yerinde ziyaretler yapılarak organik tarım ile ilgili bilgiler elde edilmiş ve sonuçlar % olarak değerlendirilmiştir. Tesadüfî olarak seçilen toplam 100 üretici ile birebir görüşmeler yapılarak bu üreticilere organik tarıma ilişkin farklı anket soruları sorulmuştur. Üreticilerle yapılan anket sonuçlarına göre, üreticilerin organik ürün yetiştirme konusunda bilgi sahibi olmadıkları, organik ürünlerin yüksek fiyatla satılmasına rağmen fazla emek harcamaları ve pahalı bir üretim sistemi olması nedeniyle organik tarımı yapmak istemediklerini ve karlı bir üretim olamayacağını düşündüklerini belirtmişlerdir. Yapılan araştırma sonuçlarına göre, üreticilerin büyük çoğunluğunun organik tarım konusunda bilgilendirilmek istedikleri, organik tarım desteklerinin olup olmadığı konusunda bilgi sahibi olmadıkları, organik içerikli ilaçları pahalı buldukları ve bu nedenle de bu grup ilaçları kullanamadıkları tespit edilmiştir.

**Anahtar Kelimeler:** Yemeklik Kültür Mantarı, Organik Tarım, Korkuteli, Antalya

## TÜRKİYE BALIKÇILIĞI VE SORUNLARI

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### ÖZET

Balıkçılık, sucul kaynaklardan balık ve diğer deniz ürünlerinin avlanması veya yetiştirilmesi sürecini ifade eder. Bu faaliyet, binlerce yıl boyunca insanlar tarafından gıda, ticaret ve geçim kaynağı olarak kullanılmıştır. Türkiye, zengin deniz kaynaklarına sahip bir ülke olduğu için balıkçılık sektörü önemli bir ekonomik faaliyet alanıdır. Ancak, bu sektörde çeşitli sorunlar ve zorluklarla karşılaşmaktadır. İşte Türkiye balıkçılığı ve karşılaşılan sorunlardan bazıları: Aşırı Avlanma: Türkiye'nin denizlerindeki aşırı avlanma, birçok balık türünün popülasyonlarını tehdit etmektedir. Kontrolsüz avlanma, deniz ekosistemlerinde dengesizliklere yol açabilir ve türlerin yok olma riskini artırabilir. Kirlilik ve Çevresel Etkiler: Denizlerdeki kirlilik ve çevresel etkiler, balıkçılık sektörünü olumsuz etkileyebilir. Endüstriyel atıklar, kara sularının boşaltılması ve deniz kirliliği gibi faktörler, deniz ekosistemlerinin sağlığını tehdit eder. Teknolojik Sorunlar: Bazı balıkçıların eski ve verimsiz teknoloji kullanmaya devam etmesi, avcılık faaliyetlerini sürdürülebilir olmaktan çıkarabilir. Modern ve sürdürülebilir teknolojilerin benimsenmesi önemlidir. Balıkçılık Politikaları: Balıkçılık yönetimi ve politikalarının yetersiz olması, sürdürülebilir balıkçılığı teşvik etmede zorluklara neden olabilir. Dengeleyici ve etkili yönetim stratejileri oluşturulmalıdır. Balıkçı Toplulukları ve Geçim Sorunları: Bazı balıkçı toplulukları, geleneksel balıkçılık yöntemlerini sürdürmekte zorlanabilir ve geçim sorunları yaşayabilir. Balıkçıların eğitimi ve desteklenmesi önemlidir. Deniz Habitatlarının Zarar Görmesi: Kıyı alanlarının gelişimi, deniz habitatlarına zarar verebilir ve balıkçılık faaliyetlerini olumsuz etkileyebilir. Rezerv alanlarının korunması ve deniz habitatlarının sürdürülebilir kullanımı önemlidir. Bu sorunların çözülmesi ve sürdürülebilir balıkçılığın teşvik edilmesi için daha etkili balıkçılık politikaları, denetim mekanizmaları ve bilinçlendirme kampanyalarına ihtiyaç vardır. Ayrıca, balıkçılık sektöründeki paydaşlar arasında iş birliği ve iletişim de artırılmalıdır.

**Anahtar Kelimeler:** Balıkçılık, Sağlıklı gıda, Su ürünleri



## İKLİM DEĞİŞİKLİĞİ VE SU ÜRÜNLERİ

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### ÖZET

İklim değışikliği, dünya genelinde iklim koşullarında meydana gelen uzun vadeli değışiklikleri ifade eder. Bu değışiklikler, atmosferdeki sera gazlarının artışı gibi insan faaliyetlerinden kaynaklanan etkilerle birlikte doğal faktörlerin etkisiyle de gerçekleşebilir. İklim değışikliği, birçok ekosistem üzerinde önemli etkiler doğurabilir ve su ürünleri sektörü de bu değışikliklerden etkilenen alanlardan biridir. İklim değışikliğinin su ürünleri üzerindeki etkileri şunlar olabilir: Deniz suyu sıcaklığı artışı: Artan deniz suyu sıcaklığı, balık türleri için uygun yaşam koşullarını etkileyebilir. Belirli türler, daha serin sulara göç edebilir ve bu durum balıkçılık endüstrisini etkileyebilir. Okyanus asitlenmesi: Artan karbon dioksit seviyeleri, okyanuslardaki asiditeyi artırabilir. Bu durum, denizel organizmaların kalsiyum karbonat içeren iskeletlerinin oluşumu üzerinde olumsuz etkilere neden olabilir. Özellikle mercan resifleri ve midyeler gibi organizmalar bu etkiden zarar görebilir. Deniz seviyesinde yükselme: Küresel ısınma nedeniyle kutuplardaki buzulların erimesi, deniz seviyelerinde yükselmeye neden olabilir. Bu durum, kıyı bölgelerindeki su ürünleri habitatlarını ve yetiştiricilik tesislerini etkileyebilir. Mevsimsel değışiklikler: İklim değışikliğı, deniz ve okyanus mevsimlerinde değışikliklere neden olabilir. Bu da balık göçlerini, üreme süreçlerini ve avlanma mevsimlerini etkileyebilir. Sürdürülebilir balıkçılık üzerindeki baskılar: İklim değışikliğı, bazı balık türlerinin azalmasına neden olabilir, bu da sürdürülebilir balıkçılık uygulamalarını zorlaştırabilir. Bu etkiler, su ürünleri endüstrisindeki faaliyetleri ve balıkçılığı etkileyebilir. Bu nedenle, iklim değışikliğı ile başa çıkmak ve su ürünleri sektörünü sürdürülebilir kılmak için çeşitli önlemler alınması gerekmektedir. Bu önlemler arasında sürdürülebilir balıkçılık uygulamalarının teşvik edilmesi, deniz habitatlarının korunması, karbon emisyonlarının azaltılması ve su ürünleri yönetiminde iklim değışikliğini dikkate alan stratejilerin benimsenmesi yer almaktadır.

**Anahtar Kelimeler:** İklim değışikliğı, Su ürünleri, Sürdürülebilirlik

## GÜMÜŞİ HAVUZ BALIĞININ (*Carassius gibelio*) LAGENAR VE UTRİKULAR OTOLİT ÖLÇÜMLERİ İLE BALIK BOYU ARASINDAKİ İLİŞKİLER

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### ÖZET

Bu çalışmada, Samsun İli Engiz Çayı'ndan örneklenen *Carassius gibelio* (Bloch, 1782) türünün otolit ölçümleri ile balık boyu arasındaki ilişkinin belirlenmesi amaçlanmıştır. Örneklenen *Carassius gibelio* bireylerinin total boyları ölçülmüş ( $\pm 0,01$  cm), ağırlıkları tartılmıştır ( $\pm 0,001$  g), gonadların maskroskopik incelenmesi ile eşeyleri tayin edilmiştir. Her bir bireye ait lagenar ve utrikular otolitler çiftler halinde sağ ve sol ayrımları yapılarak çıkarılmış ve analizlerde sağ otolitler kullanılmıştır. Otolitler görüntü analiz sisteminde görüntülenerek fotoğrafları çekilmiş, Image J programı kullanılarak piksel-mm dönüşümü yapılarak otolit ölçümleri alınmıştır. Asteriskus boyu, asteriskus yüksekliği, lapillus boyu ve lapillus genişliği ölçümleri ( $\pm 0,001$  mm) ile balık boyu arasındaki ilişkiler power model kullanılarak hesaplanmıştır. Elde edilen balıkların boyları, 7,5 ile 27,1 cm (ort $\pm$ ss, 16,73 $\pm$ 5,65), ağırlıkları 6,32-317,86 g (ort $\pm$ ss, 99,56 $\pm$ 75,75) arasındadır. Ortalama ( $\pm$ ss) asteriskus boyu, asteriskus yüksekliği, lapillus boyu ve genişliği sırası ile; 3,21 $\pm$ 0,95, 3,22 $\pm$ 0,96, 2,24 $\pm$ 0,60, 1,60 $\pm$ 0,43 mm'dir. Asteriskus boyu, asteriskus yüksekliği, lapillus boyu ve lapillus genişliği ile balık boyu arasında kuvvetli ilişkilerin olduğu belirlenmiştir ( $P < 0,001$ ,  $R^2 > 0,92$ ). Bu ilişki denklemlerinde, balık boyu ile otolit ölçümleri arasında en kuvvetli ilişki gösteren asteriskus yüksekliğidir ( $R^2 > 0,98$ ). Otolitlere ait boy, en, yükseklik ölçümleri ile balık boyu arasındaki ilişkiler, özellikle arkeolojik çalışmalarda, beslenme çalışmalarında, balık büyümesi ve fosil balıkların incelenmesinde kullanılmaktadır. Engiz Çayı'ndan elde edilen *Carassius gibelio* türünün otolitleri ile balık boyu arasındaki ilişkinin ortaya çıkarılması, dünya genelinde istilacı olan bu balık ile ilgili yapılacak çalışmalara kaynak veri oluşturması planlanmaktadır.

**Anahtar Kelimeler:** Gümüşi Havuz Balığı, *Carassius gibelio*, Otolit Ölçümleri, Engiz Çayı, Samsun

## ARı POLENİNİN GIDA GÜVENLİĞİ TEHLİKELERİ AÇISINDAN DEĞERLENDİRİLMESİ

### EVALUATION OF BEE POLLEN FOR FOOD SAFETY HAZARDS

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#### ÖZET

Arı poleni, bitki poleni ile bal arısı salgıları ve nektarın birleşiminden oluşmaktadır. Arı poleni proteinler, aminoasitler, lipitler, karbonhidratlar, mineraller, vitaminler ve polifenoller dahil olmak üzere bir çok biyoaktif bileşikler içermektedir. Arı poleni içermiş olduğu çeşitli besin maddeleri ve biyoaktif maddelerden dolayı sağlık üzerinde birçok yaralı etkisi mevcuttur. Bu yüzden son zamanlarda tüketiciler arasında popüler hale gelen doğal bir gıda olmuştur. Ancak arı polenin gıda güvenliği tehlikeleri göz ardı edilmiş ve üzerinde çok araştırma yapılmamıştır. Şimdiye kadar birkaç ülke arı polenin kalitesi ve güvenliğine ilişkin gereklilikleri belirlemiştir. Bu çalışmanın amacı da arı polenin gıda güvenliği riskleri üzerinde durularak, bu konuya ilişkin son bulguları ortaya koymak ve arı poleninde tespit edilen toksik maddelerin konsantrasyonuna ilişkin veriler özetlemektir. Bu amaçla arı polenin gıda güvenliğini tehlikeye koyacak ağır metaller ve metaloidler, küfler ve mikotoksinler, pirolizidin alkaloidler, pestisitler ve allerjenler açısından risk değerlendirilmesi yapıldı. Yapılan araştırmalar sonucunda polende yaygın olarak bulunan pestisitlerin insan sağlığı açısından risk oluşturmadığını göstermektedir. Öte yandan arı polenin metaller, metaloidler ve mikotoksin açısından tüketiciler için potansiyel bir risk teşkil ettiği görülmüştür. Bazı bitki türleri aşırı derecede büyük miktarlarda hepatotoksik pirolizidin alkaloidleri içerdiğinden dolayı, insan tüketimine sunulan arı polenlerinin bu açıdan da değerlendirilmesi gerektiği kanısına varıldı. Sonuç olarak arı poleninde gıda güvenliği tehlikesi oluşturacak maddelerin belirlenmesi için daha çok araştırmalar yapılmalıdır. Arı polenindeki tehlikeler tespit edilerek bunlar için maksimum limit belirlenmeli ve yasal sınırlamalar getirilerek düzenli bir şekilde izlenmesi gerekmektedir. Böylece arı polenleri tüketicilere daha sağlıklı ve güvenli bir şekilde ulaştırılmış olacaktır.

**Anahtar Kelimeler:** Arı, polen, gıda güvenliği, tehlike

## DOLGULU GEVREK REÇETE VE PROSES GELİŞTİRMESİ

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### ÖZET

Gevrek kategorisi altında mevcut ürünlerimize farklılık kazandıracak bir yeni ürün ve proses geliştirme projesidir. Bu proje ile mevcut gevreklerimize lezzetli dolgu kreması ilavesi ile ürün çeşitliliğine giderek ürün gamına yeni bir soluk getirilmesi hedeflenmiştir. Bu projeyi önemli yapan özellik yastık şeklinde şişirilmiş gevrek ürün formunun içerisine şölen lezzeti ile harmanlanmış krema depozit edilerek albenisi yüksek bir atıştırmalık ürün elde etmektir. Tahıl içerikli hamur bileşeninin ekstruder yardımı ile şişirilerek, içerisine akışkan bir krema depozitlenmesi ile oluşturulacak olan bu ürün, Şölen bünyesinde bir ilk olacaktır. Ayrıca proses açısından kremanın, gevreğin pişmesi ile şişmesi esnasında içerisine depozit edilecek olması projeye farklılık kazandıracaktır. Proje kapsamında hedeflenen ürüne yönelik reçete geliştirme çalışmaları başlamıştır. Hattın teknik yatırımları ve gereklilikleri ile beraber reçete deneme çalışmalarına da devam edilmiştir. Arge denemelerine yulaf unu kullanılarak devam edildiğinde boş gevrek yapısının daha sıkı ve yeme kalitesinin düşük olduğu tespit edilmiştir. Bu sebeple tahıl bileşen grubundan yulaf unu çıkarılmış, reçeteye pirinç unu eklenmiştir. Bu hamle Ar-Ge yönünden kazanım olmuştur. Dolgu kısmı için ise öncelikle mevcut Şölen lezzetindeki kremlar değerlendirilmiştir ve denenmiştir. Krema lezzeti yönünde talebe istinaden krema reçete çalışmaları yapılmıştır. Talep olarak, fındık tadı daha baskın ve yeme hissiyatı kuvvetli bir krema seçimi hedeflenmiştir. Bu bağlamda krema çalışmaları şekillenmiştir. Proses esnasında pişme kaynaklı kalite kriterlerinde sorun yaşamamak için ise, ekstruder çıkışı dolgulu gevrek kısmında nem oranına dikkat dikkat edilip, fırın sıcaklıkları düzenlenmiştir.

**Anahtar Kelimeler :** Gevrek, Fındık, Krema, Tahıl

## BETALAIN PİGMENTİ VE BİSKÜVİDE KULLANIMI

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### ÖZET

Gıdanın duyuşal özellikleri tüketicinin bir gıdayı tercih etmesinde başlıca unsurlardan biridir. Tüketici beğenisine sunulan bir gıda ilk olarak şekil, renk, kıvam gibi görünüş özellikleri ardından lezzet, koku gibi diğer duyuşal özellikleri açısından tüketiciyi cezbetmelidir. Nihai üründe meydana gelen renk kayıpları tüketici algısını olumsuz etkileyebilmektedir. Bu durumun önüne geçmek amacıyla doğal veya yapay olmak üzere çeşitli renklendiricilerin kullanımını oldukça yaygındır. Günümüzde sağlıklı beslenmeye olan ilginin artmasına bağlı olarak sahip olduğu olumlu sağlık etkileri nedeniyle doğal renklendiricilerin kullanımını tercih edilmektedir. Gıdalara pembe-kırmızı renk vermek amacıyla doğal renklendirici kategorisinde, yaygın olarak pancardan elde edilen betalain pigmentleri kullanılmaktadır. Betalainler, betasiyanin (kırmızı) ve betaksantin (sarı) olmak üzere renk karakteristikleri birbirinden farklı 2 formdan oluşan azot içerikli betalamik asit türevi renk pigmentleridir. Gıda endüstrisinde sert şekerler, yoğurt, dondurma, kek karışımları ve toz içecek karışımları gibi çeşitli ürünlerde kullanılmaktadır. Ticari uygulamaların artırılabilmesi için betalain stabilizasyonunun sağlanması önem arz etmektedir. Yüksek pigment içeriği, düşük su aktivitesi, optimum pH aralığı (4-7), şelatlama ajanı kullanımı, düşük sıcaklık uygulaması gibi faktörler betalain stabilitesini artırırken; düşük pigment içeriği, yüksek su aktivitesi, metal iyonları, yüksek sıcaklık, ışık ve oksijen gibi faktörler betalain stabilitesini azaltmaktadır. Kompleks oluşturma, kopigmentasyon ve enkapsülasyon teknikleri stabilizasyon için potansiyel olabilecek tekniklerdir. Bu çalışmada betalainin yapısı ve stabilitesini etkileyen faktörler hakkında bilgi verilmiş olup bisküvi ürünündeki stabilitesi incelenmiştir.

**Anahtar Kelimeler :** Betalain, stabilite, bisküvi.

## TUJ KOYUNLARINA KISA VEYA UZUN SÜRELİ PROGESTERON TAŞIYAN SÜNGER UYGULAMASININ MALONDİALDEHİT VE GLUTATYON ÜZERİNE ETKİSİ

EFFECTS OF SHORT OR LONG-TERM PROGESTERONE-CONTAINING SPONGE TREATMENTS ON MALONDIALDEHYDE AND GLUTATHIONE IN TUJ EWES

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### Özet

Bu çalışmada, üreme sezonu dışındaki Tuj koyunlarında progesteron içeren intravaginal süngerlerin kısa veya uzun süreli uygulamalarının malondialdehit (MDA) ve glutatyon (GSH) düzeyleri üzerindeki etkileri incelenmiştir. Çalışma kapsamında, 3-4 yaşlarındaki 21 Tuj koyunu kullanıldı. Grup I'de (n=7, Kısa süreli, 7 gün) progesteron içeren süngerler 7 gün boyunca vaginaya yerleştirilmiş ve ardından 600 IU kısırak koryonik gonadotropin (eCG) enjeksiyonu yapılarak süngerler çıkarılmıştır. Grup II'de (n=7, Uzun süreli, 14 gün) ise progesteron içeren süngerler 14 gün boyunca kullanılmış, ardından 12. gün eCG enjeksiyonu yapılarak süngerler çıkarılmıştır. Grup III (n=7, Kontrol) ise herhangi bir uygulama yapılmamış ve diğer gruplarla aynı anda koç katımına tabi tutulmuştur. Çalışmada koyunlardan kontrol grubunda da aynı zaman diliminde olacak şekilde sünger çıkarılma günü vena jugularis'ten kan alındı. Oksidan durumu değerlendirmek için MDA, antioksidan durumu belirlemek için ise indirgenmiş GSH analizi yapıldı. İstatistiksel analizlerde GraphPad Prism® programı kullanıldı. Kısa ve uzun süreli sünger uygulamalarının, kontrol grubuna göre MDA düzeyleri üzerinde anlamlı bir etkiye sahip olduğu belirlenmiştir (P < 0.001). Özellikle uzun süreli sünger uygulamasının, kısa süreliye göre MDA düzeylerinde daha fazla artışa neden olduğu gözlemlenmiştir (P < 0.001). Kontrol ve kısa süreli intravaginal sünger uygulanan grupta uzun süreli gruba göre daha yüksek GSH düzeyleri saptanmıştır (P < 0.05). Bu bağlamda uzun süreli intravaginal sünger uygulamasının, diğer gruplara göre GSH düzeylerinde istatistiksel olarak anlamlı bir azalmaya yol açtığı ifade edilebilir. Sonuç olarak, Tuj koyunlarında üreme sezonu dışında uzun süreli intravaginal sünger uygulamasının, lokal inflamasyona neden olarak oksidatif statü üzerinde etkili olabileceği görülmüştür. Bu nedenle, östrus senkronizasyonu amacıyla kullanılacak intravaginal sünger uygulamalarında kısa süreli protokollerin tercih edilmesi önerilebilir.

**Anahtar kelimeler:** Glutatyon, koyun, malondialdehit, progesteron, senkronizasyon, sünger

## Abstract

In this study, the effects of short and long-term applications of progesterone-containing intravaginal sponges on malondialdehyde (MDA) and glutathione (GSH) levels were investigated in Tuj sheep during the non-breeding season. Twenty-one Tuj sheep aged 3-4 years were used in the study. In Group I (n=7, Short-term, 7 days), progesterone-containing sponges were inserted into the vagina for 7 days, followed by the removal of sponges after a 600 IU equine chorionic gonadotropin (eCG) injection on the 7th day. In Group II (n=7, Long-term, 14 days), progesterone-containing sponges were used for 14 days, and then sponges were removed after a 12th-day eCG injection. Group III (n=7, Control) did not receive any treatment and underwent ram mating simultaneously with the other groups. Blood samples were collected from the jugular vein of the sheep in the control group on the day of sponge removal. Malondialdehyde (MDA) levels were assessed to evaluate the oxidative state, and reduced glutathione (GSH) levels were analyzed to determine the antioxidant status. Statistical analyses were performed using the GraphPad Prism<sup>®</sup> program. It was determined that both short and long-term sponge applications had a significant effect on MDA levels compared to the control group ( $P < 0.001$ ). Particularly, long-term sponge application was observed to cause a higher increase in MDA levels compared to the short-term application ( $P < 0.001$ ). Higher GSH levels were detected in the control and short-term intravaginal sponge application groups compared to the long-term group ( $P < 0.05$ ). In this context, it can be stated that long-term intravaginal sponge application led to a statistically significant decrease in GSH levels compared to the other groups. In conclusion, it was observed that long-term intravaginal sponge application in Tuj sheep during the non-breeding season could be effective in inducing local inflammation and affecting oxidative status. Therefore, for intravaginal sponge applications aimed at estrus synchronization, short-term protocols are recommended.

**Key words:** Glutathione, malondialdehyde, progesterone, sheep, sponge, synchronization



## RATLARDA OVARIEKTOMİNİN TOTAL KOLESTEROL, YÜKSEK YOĞUNLUKLU LİPOPROTEİN VE DÜŞÜK YOĞUNLUKLU LİPOPROTEİN ÜZERİNE ETKİSİ

### THE EFFECT OF OVARIECTOMY ON TOTAL CHOLESTEROL, HIGH-DENSITY LIPOPROTEIN, AND LOW-DENSITY LIPOPROTEIN IN RATS

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#### Özet

Bu çalışmanın amacı, ovariektomi sonrası total kolesterol, yüksek yoğunluklu lipoprotein (HDL-C) ve düşük yoğunluklu lipoprotein (LDL-C) parametreleri üzerindeki etkileri araştırmaktır. Bu amaç doğrultusunda, her birinde 6 dişi rat olmak üzere toplamda 12 rat kullanıldı. Ratlar, kontrol ve ovariektomi olmak üzere iki gruba ayrıldı. Ovariektomi grubundaki ratlara, anestezi altında ovariektomi operasyonu uygulanarak ovaryumları çıkarıldı. Ardından, tüm ratlar *ad-libitum* beslenmeye devam etti. 30 gün sonunda, tüm hayvanlar etik kurallara uygun bir şekilde anestezi altında ötenaziye tabi tutuldu. Ratlardan alınan kan örnekleri santrifüj edilerek serumları ayrıldı. Serum örneklerinden kolesterol, HDL-C ve LDL-C parametreleri tam otomatik otoanalizör cihazı ile ölçüldü. Yapılan analiz sonuçlarına göre, kolesterol ve HDL-C düzeylerinde istatistiksel olarak anlamlı bir fark bulunamazken ( $p > 0.05$ ), LDL-C düzeyinde ovariektomi grubunda kontrol grubuna göre anlamlı bir artış saptandı ( $p < 0.05$ ). Bu sonuçlar, ovariektomi sonrasında azalan östrojen ve progesteronun lipid profiline olumsuz etkisi olduğunu ve özellikle LDL-C düzeyini artırdığını göstermektedir.

**Anahtar kelimeler:** Ovariektomi, kolesterol, HDL-C, LDL-C

#### Abstract

This study aimed to investigate the effects of ovariectomy on total cholesterol, high-density lipoprotein (HDL-C), and low-density lipoprotein (LDL-C) parameters. For this purpose, a total of 12 female rats, six in each group, were utilized. The rats were divided into

two groups: control and ovariectomy. In the ovariectomy group, rats underwent ovariectomy surgery under anesthesia to remove the ovaries. Subsequently, all rats continued ad-libitum feeding. After 30 days, all animals were euthanized under anesthesia in accordance with ethical guidelines. Blood samples were collected from the rats and centrifuged to separate the sera. The parameters of cholesterol, HDL-C, and LDL-C were measured from serum samples using a fully automated autoanalyzer device. According to the analysis results, no statistically significant difference was found in cholesterol and HDL-C levels ( $p > 0.05$ ), while a significant increase in LDL-C level was observed in the ovariectomy group compared to the control group ( $p < 0.05$ ). These findings indicate that the decreased estrogen and progesterone levels after ovariectomy have a negative impact on the lipid profile, particularly elevating LDL-C levels.

**Keywords:** Ovariectomy, cholesterol, HDL-C, LDL-C

## FAZ İZOLELİ HAVA ARALIKLI YÜKSEK GERİLİM BUSBAR ÇÖZÜMÜ

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### ÖZET

Busbar, elektrik enerjisinin dağıtılması ve taşınması için tasarlanmış olan prefabrik ve modüler bir sistemdir. Busbar kanal sistemleri; 1930'lu yıllarda, temel olarak yüksek katlı binaların ve fabrikalarda değişen üretim teknolojilerinin bir ihtiyacı olarak, Amerika'da ortaya çıkmıştır. Ağırlıklı olarak büyük sanayi tesislerinde, gökdelenlerde, tekstil ve konfeksiyon alanlarında mevcuttur. Tersaneler, oteller, alışveriş merkezleri, enerji santralleri, montaj ve bakım atölyeleri, depolar ve laboratuvarlarda da busbar sistemleri kullanılmaktadır. Busbar sistemlerinde taşıyıcı yapı kalay ile kaplanmaktadır. Alüminyum ya da bakır iletkenlerin izole edilmesi ve metal bir gövde içerisine yerleştirilmesi ile oluşturulmaktadır.

Busbar sistemleri kullanıma sunulmadan önce daha farklı yöntemler kullanılmaktaydı. Klasik sistemlerde yüksek akımların taşınması için çok kalın kesitli, birçok kablonun birbiri ile paralel olarak bağlanması gerekmekteydi. Bu kablolu sistemlerde kabloların taşınması ve yerleştirilmesi oldukça zorlayıcı bir durum oluşturmaktaydı. Pano ya da şalterin bağlanması zor olduğu için böyle bir ihtiyaç oluştu ve modüler sistemler geliştirildi. Böylece busbar enerji dağıtım sistemleri kullanıma sunuldu.

Busbar sistemlerinin özellikle büyük ve karmaşık yapılarda kullanımı, enerji dağıtım sistemi kurulumunu ve kullanımını oldukça kolaylaştırmasına rağmen yüksek gerilim busbarlarında elektromanyetik alanlar nedeni ile busbar sisteminin boyutları artmıştır.

Yapılan çalışmada 17 KV'a kadar iklimlendirme şartları içermeyen, dış ortamda çalışabilen, yüksek gerilim seviyelerinde fazları hava ve cast resin ile izole edilmiş bir tasarım çalışılmıştır. Geliştirilen faz izoleli busbarın manyetik akı dağılımı, elektrik alan ve kısa devre durumunda oluşan kuvvetleri analiz edilmiştir. Bu doğrultuda optimum tasarım geometrisi çıkarılmış ve optimum konstrüksiyon oluşturulmuştur.

**Anahtar Kelimeler:** Elektrik İletimi Ve Dağıtımı, Faz İzoleli Busbar, Yüksek Gerilim

## SÜREKLİ MIKNATISLI TÜBÜLER DC LINEER MOTOR PARAMETLERİNİN BELİRLENMESİ

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### ÖZET

Bu çalışmada, sürekli mıknatıslı tübüler DC lineer motorun tasarımı yapılarak matematiksel modeli elde edilmiş ve parametreleri deneysel olarak belirlenmiştir. Öncelikle geliştirilen motorun yapısını gösteren tasarım detayları sunulmuş daha sonra parametrelerin tespitinde yararlanılan deneysel düzenekler verilmiştir. Prototipi üretilen motorun belirlenmesi gereken parametreleri statik kuvvet/akım oranı, armatür direnci, endüvi sargılarının endüktansı, hareketli birimin kütlesi ve viskoz sürtünme katsayısıdır. Deneysel düzende bir adet tübüler DC lineer motor, veri toplama kartı, motor sürücü devresi, makara sistemi ve bilgisayar kullanılmıştır. Deneysel düzeneklerden elde edilen veriler veri toplama kartı yardımıyla bilgisayar ortamına aktarılmıştır. Böylece Matlab/Simulink ortamında oluşturulan sisteme parametre değerleri yazılarak simülasyon gerçekleştirilmiştir. Veriler bilgisayar ortamında Matlab/Simulink yazılım uygulaması ile değerlendirilmiştir.

**Anahtar Kelimeler:** DC lineer motor, Sabit mıknatıs, modelleme, parametre belirleme.

### ABSTRACT

In this study, a permanent magnet tubular DC linear motor is designed, its mathematical model is obtained and its parameters are determined experimentally. First, the design details showing the structure of the developed motor are presented and then the experimental setups used to determine the parameters are given. The parameters to be determined for the prototyped motor are static force/current ratio, armature resistance, inductance of the armature windings, mass of the moving unit and viscous friction coefficient. A tubular DC linear motor, data acquisition card, motor driver circuit, pulley system and computer were used in the experimental setup. The data obtained from the experimental setups were transferred to the computer environment with the help of the data acquisition card. Thus, the simulation was carried out by writing parameter values to the system created in the Matlab Simulink environment. The data were evaluated with Matlab/Simulink software application in the computer environment.

## PARK BAHÇE ve SOKAK AYDINLATMASI VE FARKLI UYGULAMALAR İÇİN KOLAY ÇOKLANABİLİR YAPIDA, TOZ TUTMAYAN ARMATÜR TASARIMI GELİŞTİRİLMESİ

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### ÖZET

Enerji, ekonominin ve yaşam standartlarının vazgeçilmez kaynağıdır. Özellikle ülkemiz gibi enerji yönünden dışarıya bağımlı ülkeleri ele aldığımızda, enerji üretebilmenin yanında bilinçli enerji tüketiminin de önemi çok büyüktür. Enerji tüketiminde aydınlatma sektörünün alanı ise, ülkemizin tüm enerji tüketiminin başlı başına beşte birini teşkil etmektedir. Aydınlatma sektöründeki yenilikçi, ekonomik, sürdürülebilir ve teknolojik çalışmalar ise oldukça dikkat çekmektedir.

Yapılan çalışma ile enerjide %70 tasarruf sağlayacak LED armatürlerinde optik tasarım, soğutucu tasarımı ve çok amaçlı modüler olma uygunluğu için geometri tasarımı çalışmaları gerçekleştirilecektir. Çok amaçlı kullanıma uygun olarak tek ürünün birden fazla amaç ile kullanılması ve dolayısıyla da ürün maliyetlerini düşürmek amaçlanmıştır. Çalışma sonucunda elde edilen çıktı uluslararası sokak aydınlatma standartları ve şartnamelerine uygun olarak tasarlanmıştır. Ayrıca minimum 60.000 saat ürün ömrüne göre tasarlanması önceden planlanmıştır. Montaj kolaylığı, otomasyon uyumluluğu ve yüksek optik verimliliği sunan ürün, diğer sokak aydınlatma ürünlerinden farklı ve rekabet avantajı yüksektir. Optimum işlevsellik, ekonomik performans ve üstün güvenlik kriterleri, yapılan çalışmanın temelinde yer almaktadır. Tek bir kasada 5 farklı model reflektörün bulunduğu çalışma, platform bir teknoloji uygulaması niteliğindedir. Çalışma sonucunda park, bahçe, sokak aydınlatması ve farklı uygulamalar için kolay çoklanabilir yapıda, toz tutmayan armatür tasarımı gerçekleştirilmiştir. Sonuç olarak geliştirilen ürünün sokak, projektör, park ve bahçe gibi alanlarda tercih edilmesi beklenmektedir.

**Anahtar Kelimeler:** Armatür Tasarımı, Aydınlatma, Enerji Tasarrufu, Verimlilik

## YÜKSEK BASINÇLI DÖKÜM YÖNTEMİ İLE ÜRETİLEN PARÇALARIN ÇAPAK ALMA PROSESLERİNİN ENDÜSTRİYEL ROBOTLAR KULLANILARAK İYİLEŞTİRİLMESİNİN GERÇEKLEŞTİRİLMESİ

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### ÖZET

Yüksek basınçlı döküm; ergimiş metalin, basınç altında güvenli bir şekilde kalıp boşluğuna doldurulduğu prosestir. Metal katılaşana kadar basınç altında bekletilmektedir. Daha sonrasında piston geriye alınmakta ve kalıp açılmaktadır. Dökümü yapılan parça diğer işlemler için kalıptan çıkarılmaktadır. Döküm işlemi tamamlandıktan sonra trim işlemi ile dökümü yapılan parça üzerindeki yolluk fazlalıkları alınarak parçanın çapaklı görünümü elde edilmektedir. Üretilen parçaların boyama aşamasına geçebilmesi için çapaklarının alınması gerekmektedir. Bu işlem ile boyanacak yüzey, pürüzsüz ve rijit bir hale getirilmektedir.

Yapılan çalışmada yer alan kısım çapak alma prosesidir. Piyasadaki çoğu döküm firmasında çapak alma prosesi manuel olarak yapılmaktadır. İnsan gücü ile yapılan işler belli başlı sorunları beraberinde getirmektedir. Bu sorunlar üretimin yavaş olması, ürün kalitesindeki düşük standart, üretilen parçaların standart olamaması, personel giderleri, çalışma saatlerinden dolayı oluşan üretim aksamaları ve üretim kapasitesinin düşük olmasıdır. Bu çalışmada ise ana hedef, döküm işleminden sonra parça üzerinde yapılan çapak alma işleminin endüstriyel robotlar yardımı ile gerçekleştirilmesidir. Endüstriyel robotlar ile gerçekleştirilecek olan çapak alma prosesi ile birlikte; üretim kapasitesinin artırılması, yüksek kalitede standart bir üretim, 7/24 yalın üretim, hurda ve fazla işçilikten dolayı oluşan üretim maliyetlerinin minimum seviyelere çekilmesi, akıllı fabrika temellerin oluşturulması, seri ve güvenli üretimin sağlanması, insan gücü ile çalışma olmayacağı için iş kazalarının önüne geçilmesi, müşteri memnuniyetinin sağlanması, yüksek kalitedeki standart ürün ve müşteri memnuniyetinin getireceği yeni müşterilerin elde edilmesi amaçlanmıştır.

**Anahtar Kelimeler:** Yalın Üretim, Endüstriyel Robotlar, Çapak Alma Prosesi, Seri Üretim

## NANOPARTİKÜL TAKVİYESİNİN TEK BİNDİRMELİ BAĞLANTILARDA ÇENTİKLİ KOMPOZİT MALZEMELERİN ÇEKME DAVRANIŞLARINA ETKİSİ

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### ÖZET

Bu çalışmada epoksi matris malzemesine farklı özellik ve oranlarda nanopartikül takviyesinin tek bindirmeli bağlantılarda çekme davranışlarına etkileri araştırılmıştır. ARC-152 epoksi yapıştırıcı ve W-152 sertleştirici malzemeleri kullanılarak tek bindirmeli bağlantılar oluşturulmuştur. Yapıştırıcı malzemeye %0.005, %0.010 ve %0.015 oranlarında  $Al_2O_3$ , CuO ve MgO nanopartikülleri ilave edilmiştir. Tek bindirme bağlantılı tüm numuneler çekme testlerine tabi tutulmuştur. En yüksek çekme mukavemeti 6032.54 N olarak %0.015 oranında  $Al_2O_3$  takviyeli tek bindirme bağlantılı numunelerde tespit edilmiştir. Takviyesiz üretilen kompozit malzemeler hariç olmak üzere en düşük çekme mukavemet değerleri ise 4492.47 N olarak %0.005 oranında MgO takviyeli tek bindirme bağlantılı numunelerde gözlemlenmiştir. Takviyesiz üretilen kompozit malzemelerin çentik bölgelerinden ve tek bindirme bağlantılı kompozit malzemelerin de yama bölgelerinden hasara uğradıkları ortaya çıkmıştır.

**Anahtar Kelimeler :** Nanopartikül, çentikli, kompozit, çekme

### EFFECT OF NANOPARTICLE REINFORCEMENT ON TENSILE BEHAVIOR OF NOTCHED COMPOSITE MATERIALS IN SINGLE LAP JOINTS

#### ABSTRACT

In this study, the effects of nanoparticle reinforcement with different properties and ratios on the epoxy matrix material on the tensile behavior of single lap joints were investigated. Single lap joints were composed using ARC-152 epoxy adhesive and W-152 hardener materials.  $Al_2O_3$ , CuO and MgO nanoparticles were added to the adhesive material at the ratios of 0.005%, 0.010% and 0.015%. All samples with single lap joints were performed to tensile tests. The highest tensile strength was determined as 6032.54 N in single lap joint samples reinforced with



0.015%  $\text{Al}_2\text{O}_3$ . Except for composite materials produced without reinforcement, the lowest tensile strength values were observed in single lap joint samples with 0.005% MgO reinforcement, as 4492.47 N. As a result, composite materials produced without reinforcement are damaged in the notch areas, and composite materials with single lap joints are damaged in the patch areas.

**Keywords:** Nanoparticle, notched, composite, tensile

## THE FIRST PRINCIPLES STUDY WITH GGA AND GGA+mBJ FUNCTIONAL ON STRUCTURAL AND ELECTRONIC PROPERTIES OF HALF-HEUSLER LiAgTe COMPOUND

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### ABSTRACT

Some structural and electronic properties of the LiAgTe ternary half-Heusler compound with a face-centered cubic MgAgAs-type crystal structure, having space number 216 and conforming to the F-43m space group, have been investigated using the Generalized Gradient Approach (GGA) within the framework of Density Functional Theory. The enthalpies of formation calculated for three different structural phases of this compound (Type-I, Type-II, and Type-III) and the energy-volume plots fitted to the Birch-Murnaghan equation of state show that the Type-I structural phase is energetically more stable than the other two structural phases. The lattice constant, volume modulus, and the first derivative of the volume modulus concerning pressure were calculated as 6.619 Å, 37.8 GPa, and 5.55 for the Type-I phase, 6.412 Å, 39.9 GPa, and 4.38 for the Type-II phase and 6.548 Å, 43.6 GPa and 5.11 for the Type-III phase, respectively. To observe the electronic band structure of the LiAgTe ternary half-Heusler compound, two different methods were used in the calculations. The band gap calculated under the GGA approach was observed as 0.71 eV, while the corresponding gap calculated under the GGA + mBJ approach was observed as 1.73 eV. As a result of these values obtained with both approaches, it was concluded that this material has a semiconductor nature. However, it is seen that the mBJ approach is more precise in calculating the electronic properties and gives results closer to the experimental values. As a result of the electronic band calculations, it is understood that the LiAgTe compound has a semiconductor character with a direct transition bandgap and therefore may be a good candidate for some technological applications in the field of optoelectronics.

**Keywords:** Half-Heusler Compounds, Electronic Band Structure, Semiconductors.

## GGA VE GGA + mBJ FONKSİYONELİ İLE YARI HEUSLER LiAgTe BİLEŞİĞİNİN YAPISAL VE ELEKTRONİK ÖZELLİKLERİNE İLİŞKİN İLK PRENSİPLER ÇALIŞMASI

### ÖZET

Uzay numarası 216 olan ve F-43m uzay grubuna uyan yüzey merkezli kübik MgAgAs-tipi kristal yapısına sahip, LiAgTe üçlü yarı-Heusler bileşiğinin bazı yapısal ve elektronik özellikleri Yoğunluk Fonksiyonel Teorisi çerçevesinde Genelleştirilmiş Gradient Yaklaşımı (GGA) kullanılarak incelenmiştir. Bu bileşiğin üç farklı yapısal fazı için (Tip-I, Tip-II ve Tip-III) hesaplanan oluşum entalpileri ve Birch-Murnaghan durum denkleminde fit edilerek çizilen enerji-hacim grafikleri, Tip-I yapısal fazının enerjilik olarak diğer iki yapısal faza oranla daha kararlı bir faz olduğunu göstermiştir. Söz konusu hal denkleminde fit edilerek çizilen enerji-hacim grafikleri yardımıyla, LiAgTe bileşiğinin örgü sabiti, hacim modülü ve hacim modülünün basınca göre birinci türevi, sırasıyla, Tip-I fazı için 6.619 Å, 37.8 GPa ve 5.55; Tip-II fazı için 6.412 Å, 39.9 GPa ve 4.38 ve Tip-III fazı için 6.548 Å, 43.6 GPa ve 5.11 olarak hesaplanmıştır. LiAgTe üçlü yarı-Heusler bileşiğinin elektronik bant yapısını gözlemleyebilmek için, hesaplamalarda iki farklı yöntem kullanılmıştır. GGA yaklaşımı altında hesaplanan bant aralığı 0.71 eV olarak gözlenirken, GGA + mBJ yaklaşımı altında hesaplanan ilgili aralık 1.73 eV olarak gözlenmiştir. Her iki yaklaşımla elde edilen bu değerler sonucunda bu malzemenin yarı iletken bir doğaya sahip olduğu kanaatine varılmıştır. Ancak elektronik özelliklerin hesaplanmasında mBJ yaklaşımının daha hassas ve deneysel değerlere daha yakın sonuçlar verdiği açıkça görülmektedir. Gerçekleştirilen elektronik bant hesaplamaları sonucunda, LiAgTe bileşiğinin doğrudan geçişli bant aralığına sahip bir yarı iletken karakteri olduğu ve bu nedenle opto-elektronik alanındaki bazı teknolojik uygulamalar için iyi bir aday olabileceği anlaşılmaktadır.

**Anahtar Kelimeler:** Yarı-Heusler Bileşikler, Elektronik Band Yapısı, Yarı İletkenler.

## THE STRUCTURAL, ELECTRONIC, AND ELASTIC PROPERTIES OF LITHIUM BASED $\text{Li}_2\text{MgSn}$ HEUSLER ALLOY

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### ABSTRACT

The main physical properties of the  $\text{Li}_2\text{MgSn}$  ternary Heusler alloy, such as structural, electronic, and elastic properties, have been studied by means of density functional theory in a first-principles approach. In all calculations, the generalized gradient approximation parameterized according to Perdew-Burke-Ernzerhof is used. For  $\text{Li}_2\text{MgSn}$  alloy under different volumes, the total energies were calculated separately for  $L2_1$  type ( $\text{AlCu}_2\text{Mn}$  type) and XA type ( $\text{CuHg}_2\text{Ti}$  type) crystal structures. In the light of the findings, it was observed that this structure is energetically more stable due to the lower total energy of the XA-type crystal structure compared to the  $L2_1$ -type crystal structure. In addition, the energy-volume plots were fitted to the Birch-Murnaghan equation to determine structural parameters such as the volume modulus at equilibrium ( $B$ ) and the first derivative of the volume modulus with respect to pressure ( $dB/dP$ ), as well as to obtain the lattice constant ( $a$ ) at equilibrium. Electronic band calculations for the  $\text{Li}_2\text{MgSn}$  alloy showed that this alloy has a metallic character in both crystal structures. Then, within the scope of the elastic properties of the alloy, firstly, the single-crystal elastic constants  $C_{11}$ ,  $C_{12}$  ve  $C_{44}$ , which are defined for a cubic crystal system, were calculated with the help of the stress-strain approach. Since the obtained elastic constants met the Born stability criteria given for cubic crystals, it was concluded that the  $\text{Li}_2\text{MgSn}$  ternary Heusler alloy examined was mechanically stable. Finally, some mechanical parameters such as bulk modulus ( $B$ ), shear modulus ( $G$ ), Young's modulus ( $E$ ),  $B/G$  ratio, Debye temperature ( $\Theta_D$ ), and melting temperature ( $T_m$ ), which are very important for a crystal structure, were estimated with the help of  $C_{11}$ ,  $C_{12}$  ve  $C_{44}$  elastic constants.

**Keywords:** Heusler Alloys, Crystal Structure, Elastic Constants.

## LİTYUM BAZLI $\text{Li}_2\text{MgSn}$ HEUSLER ALAŞIMININ YAPISAL, ELEKTRONİK VE ELASTİK ÖZELLİKLERİ

### ÖZET

$\text{Li}_2\text{MgSn}$  üçlü Heusler alaşımının yapısal, elektronik ve elastik özellikleri gibi temel fiziksel özellikleri, ilk prensipler yaklaşımı içerisinde yoğunluk fonksiyonel teorisi yardımıyla incelenmiştir. Tüm hesaplamalarda, Perdew-Burke-Ernzerhof'a göre parametrelendirilen genelleştirilmiş gradient yaklaşımı kullanılmıştır.  $\text{Li}_2\text{MgSn}$  alaşımı için farklı hacimler altında, hem  $L2_1$  tipi ( $\text{AlCu}_2\text{Mn}$  tip) hem de  $XA$  tipi ( $\text{CuHg}_2\text{Ti}$  tip) kristal yapıları için ayrı ayrı toplam enerjiler hesaplanmıştır. Elde edilen bulgular ışığında,  $L2_1$  tipi kristal yapısına oranla,  $XA$  tipi kristal yapının toplam enerjisinin daha düşük olması nedeniyle enerjistik olarak bu yapının daha kararlı olduğu görülmüştür. Ayrıca, denge durumundaki hacim modülü ( $B$ ) ve hacim modülünün basınca göre birinci türevi ( $dB/dP$ ) gibi yapısal parametreleri belirlemek ve aynı zamanda denge durumundaki örgü sabitini ( $a$ ) elde edebilmek için çizilen enerji-hacim grafikleri Birch-Murnaghan denkleminde fit edilmiştir.  $\text{Li}_2\text{MgSn}$  alaşımı için gerçekleştirilen elektronik bant hesaplamaları sonucunda, bu alaşımın her iki kristal yapıda da metalik karaktere sahip olduğu görülmüştür. Daha sonra, söz konusu alaşımın elastik özellikleri kapsamında, ilk olarak kübik yapı bir kristal sistem için tanımlı olan  $C_{11}$ ,  $C_{12}$  ve  $C_{44}$  tek kristal elastik sabitleri zor-zorlanma yaklaşımı yardımıyla hesaplanmıştır. Elde edilen elastik sabitler, kübik kristaller için verilen Born stabilite kriterlerini sağladığı için incelenen  $\text{Li}_2\text{MgSn}$  üçlü Heusler alaşımının mekaniksel olarak kararlı olduğu sonucuna varılmıştır. Son olarak, bir kristal yapı için çok önemli olan hacim modülü ( $B$ ), kayma modülü ( $G$ ), Young modülü ( $E$ ), Pugh oranı ( $B/G$ ), Debye sıcaklığı ( $\theta_D$ ) ve erime sıcaklığı ( $T_m$ ) gibi bazı mekaniksel parametreler de elde edilen  $C_{11}$ ,  $C_{12}$  ve  $C_{44}$  elastik sabitleri yardımıyla tahmin edilmiştir.

**Anahtar Kelimeler:** Heusler Alaşımlar, Kristal Yapı, Elastik Sabitler.

## DIŞ İSKELETLERDE KULLANILAN TAHİRİK TEKNOLOJİLERİ

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### ÖZET

Dış iskeletler, rehabilitasyon, yardım ve performans artırma gibi amaçlar için kullanılan giyilebilir mekanik yapılandırmalardır. Bu cihazlar mekanik destek ve güç arttırımı sağlayarak kullanıcının fiziksel yeteneklerini geliştirir. Dış iskeletler iki ana tipe ayrılır: pasif ve aktif. Pasif Dış iskeletler basit mekanik yaylar ve hidrolik sistemler kullanırken, aktif Dış iskeletler elektrik motorlarından ve daha karmaşık sürücü sistemlerinden güç çekerler. Bu sistemler ayrıca belirli anatomik bölgeler için tasarlanabilir. Elektrikli aktüatör sistemleri, Dış iskeletlerde motor gücünü harekete dönüştüren temel bileşenlerdir. Dişliler, kayışlar ve zincirler aracılığıyla çalışan bu sistemler, verimlilik, sessiz işletim ve düşük bakım gereksinimleri sunar. Kullanılan çeşitli motor türleri arasında fırçalı ve fırçasız DC motorlar, adım motorlar ve servo motorlar bulunur. Daha lineer ve kontrollü hareket için Seri Elastik Aktüatörler (SEA) ve Değişken Sertlik Aktüatörleri (VSA) gibi özel aktüatör türleri kullanılır. Hidrolik ve elektro-hidrolik sürücü sistemleri yüksek yük kapasitesi ve düşük eklemler ataleti sunar. Elektro-Hidrolik Aktüatörler (EHA), hem hidrolik hem de elektrik sistemlerinin avantajlarını birleştirir. Hidrolik sistemler genellikle ağır ve karmaşık olsa da yüksek güç sunarlar. Pnömatik aktüatörler ve yumuşak aktüatörler, hafiflikleri ve yüksek güç-ağırlık oranları ile dikkat çeker. Pnömatik kas aktüatörleri (PMA), daha az güç ve tork gerektiren uygulamalar için idealdir. Yumuşak aktüatörler, esneklikleri ve uyum yetenekleri ile giyilebilir robotik uygulamalarda alternatif çözümler sunar. Elektrikli, hidrolik ve pnömatik sistemler, bu cihazların performansını, verimliliğini ve uygulama alanlarını belirleyen ana unsurlardır. Bu teknolojilerin seçimi, Dış iskeletler amaçlanan kullanımı ve işlevselliğine bağlıdır.

**Anahtar Kelimeler:** Dış iskeletler, eyleyiciler, tahrik sistemleri

## ACTUATOR TECHNOLOGIES USED IN EXOSKELETONS

### ABSTRACT

Exoskeletons are wearable mechanical structures used for purposes such as rehabilitation, assistance, and performance enhancement. These devices provide mechanical support and

power augmentation, enhancing the user's physical capabilities. Exoskeletons are categorized into two main types: passive and active. Passive exoskeletons utilize simple mechanical springs and hydraulic systems, while active exoskeletons draw power from electric motors and more complex drive systems. These systems can also be designed for specific anatomical areas. Electric actuator systems are fundamental components in exoskeletons that convert motor power into motion. Operating through gears, belts, and chains, these systems offer efficiency, quiet operation, and low maintenance requirements. Various motor types used include brushed and brushless DC motors, stepper motors, and servo motors. Special actuator types such as Series Elastic Actuators (SEA) and Variable Stiffness Actuators (VSA) are employed for more linear and controlled motion. Hydraulic and electro-hydraulic drive systems provide high load capacity and low joint inertia. Electro-Hydraulic Actuators (EHA) combine the advantages of both hydraulic and electric systems. While hydraulic systems are often heavy and complex, they offer high power. Pneumatic actuators and soft actuators stand out for their lightness and high power-to-weight ratios. Pneumatic muscle actuators (PMAs) are ideal for applications requiring less power and torque. Soft actuators, with their flexibility and adaptability, offer alternative solutions in wearable robotic applications. Electric, hydraulic, and pneumatic systems are key elements determining the performance, efficiency, and application areas of these devices. The choice of these technologies depends on the intended use and functionality of the exoskeleton.

**Keywords:** Exoskeletons, actuators, drive systems

## HEMŞİRELİK SON SINIF ÖĞRENCİLERİNİN HEMŞİRELİK MESLEĞİNİ ALGILAMA DURUMLARI VE KARIYER GELECEKLERİNE YÖNELİK TUTUMLARI ARASINDAKİ İLİŞKİNİN BELİRLENMESİ

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### ÖZET

Bu çalışma, hemşirelik son sınıf öğrencilerinin hemşirelik mesleğini algılama durumları ve kariyer geleceklerine yönelik tutumları arasındaki ilişkinin incelenmesi ve kariyer planlarını etkileyen faktörlerin belirlenmesi amacıyla yapıldı. Tanımlayıcı ve ilişki arayıcı nitelikte olan çalışma dahil edilme kriterlerine uyan ve çalışmaya katılmayı kabul eden 105 öğrenci ile yapıldı. Verilerin elde edilmesinde, kişisel bilgi formu, Hemşirelik Mesleğini Algılama Ölçeği (HMAÖ) ve Kariyer Geleceği Ölçeği (KARGEL) kullanıldı. Verilerin değerlendirilmesinde sayı, yüzdelik, aritmetik ortalama ve standart sapma dağılımından yararlandı. Öğrencilerin sosyo-demografik özellikleri ve ölçeklerden alınan puanların karşılaştırılmasında t testi, tek yönlü ANOVA, ölçekleri arasındaki ilişkinin belirlenmesinde pearson korelasyon analizi ve kariyer planlarını etkileyen faktörlerin belirlenmesinde ise aşamalı çoklu doğrusal regresyon analizi kullanılmıştır. Çalışmaya katılan öğrencilerin 82.9'u kadın olduğu, % 47.7'sinin bölüme kendi tercihi ile geldiği, % 75.2'sinin hemşirelik bölümünü sevdiği, % 81.9'unun mezun olduktan sonra hemşire olarak çalışmak istediği belirlenmiştir. Öğrencilerin cinsiyetine, mesleğe hazır hissetme durumuna ve mezuniyet sonrası çalışma durumlarına göre KARGEL puanlarının anlamlı düzeyde farklılık gösterdiği görülmüştür. KARGEL ölçeği toplam puan, kariyer uyumluluğu, kariyer seçimi ve iyimserlik alt boyutları ile HMAÖ mesleki statü ve HMAÖ- toplam puanları arasında pozitif yönde anlamlı düzeyde ilişki olduğu belirlenmiştir. Ayrıca yaş, cinsiyet, mezuniyet sonrasında çalışma planı ve HMAÖ alt boyutlarının öğrencilerin kariyer planlarını % 56 düzeyinde açıklayan değişkenler olduğu belirlenmiştir. Öğrencilerin hemşirelik mesleğinin statüsüne ve niteliğine yönelik algılarının, kariyer



planlarını etkileyen faktörler olduğu belirlenmiştir. Bu sebeple hemşirelik öğrencilerinde olumlu meslek algısının geliştirilmesi, geleceğe yönelik pozitif kariyer planlarına sahip olmaları açısından önem taşımaktadır. Bu sebeple, mezun olmadan önce hemşirelik eğitiminin en başından sonuna kadar, mesleğe yönelik profesyonel değerlerin kazandırılarak olumlu mesleki algı geliştirilmesi hedeflenmelidir.

**Anahtar Kelimeler:** Hemşirelik, kariyer geleceği planı, meslek algısı, mesleki statü, mesleki nitelik.

## **DETERMINING THE RELATIONSHIP BETWEEN FINAL YEAR NURSING STUDENTS' PERCEPTIONS OF THE NURSING PROFESSION AND THEIR ATTITUDES TOWARDS THEIR CAREER FUTURE**

### **ABSTRACT**

This study was conducted to examine the relationship between senior nursing students' perception of the nursing profession and their attitudes towards their career future and to determine the factors affecting their career plans. The study, which is descriptive and relationship-seeking, was conducted with 105 students who met the inclusion criteria and agreed to participate in the study. Personal information form, Nursing Profession Perception Scale (NPPS) and Career Future Scale (CFS) were used to obtain the data. Number, percentage, arithmetic mean and standard deviation distribution were used in the evaluation of the data. T test, one-way ANOVA were used to compare the socio-demographic characteristics of the students and the scores obtained from the scales, Pearson correlation analysis was used to determine the relationship between the scales, and stepwise multiple linear regression analysis was used to determine the factors affecting their career plans. It was determined that 82.9 of the students participating in the study were women, 47.7% came to the department by their own choice, 75.2% liked the nursing department, and 81.9% wanted to work as a nurse after graduation. It was observed that CFS scores differed significantly depending on the students' gender, whether they felt ready for the profession, and their employment status after graduation. It was determined that there was a significant positive relationship between the CFS scale total score, career adaptability, career choice and optimism sub-dimensions and NPPS professional status and NPSS-total scores. In addition, it was determined that age, gender, post-graduation work plan and NPSS sub-dimensions were variables that explained students' career plans at a level of 56%. It has been determined that students' perceptions of the status and quality of the nursing profession are factors affecting their career plans. For this reason, developing a positive

professional perception in nursing students is important for them to have positive career plans for the future. For this reason, it should be aimed to develop a positive professional perception by gaining professional values for the profession from the very beginning to the end of nursing education before graduation.

**Keywords:** Nursing, career future plan, profession perception, professional status, professional qualification.

## HEMŞİRELİK SON SINIF ÖĞRENCİLERİNİN HEMŞİRELİK MESLEĞİNİ ALGILAMA DURUMLARI VE KARIYER GELECEKLERİNE YÖNELİK TUTUMLARI ARASINDAKİ İLİŞKİNİN BELİRLENMESİ

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### ÖZET

Bu çalışma, hemşirelik son sınıf öğrencilerinin hemşirelik mesleğini algılama durumları ve kariyer geleceklerine yönelik tutumları arasındaki ilişkinin incelenmesi ve kariyer planlarını etkileyen faktörlerin belirlenmesi amacıyla yapıldı. Tanımlayıcı ve ilişki arayıcı nitelikte olan çalışma dahil edilme kriterlerine uyan ve çalışmaya katılmayı kabul eden 105 öğrenci ile yapıldı. Verilerin elde edilmesinde, kişisel bilgi formu, Hemşirelik Mesleğini Algılama Ölçeği (HMAÖ) ve Kariyer Geleceği Ölçeği (KARGEL) kullanıldı. Verilerin değerlendirilmesinde sayı, yüzdelik, aritmetik ortalama ve standart sapma dağılımından yararlandı. Öğrencilerin sosyo-demografik özellikleri ve ölçeklerden alınan puanların karşılaştırılmasında t testi, tek yönlü ANOVA, ölçekleri arasındaki ilişkinin belirlenmesinde pearson korelasyon analizi ve kariyer planlarını etkileyen faktörlerin belirlenmesinde ise aşamalı çoklu doğrusal regresyon analizi kullanılmıştır. Çalışmaya katılan öğrencilerin 82.9'u kadın olduğu, % 47.7'sinin bölüme kendi tercihi ile geldiği, % 75.2'sinin hemşirelik bölümünü sevdiği, % 81.9'unun mezun olduktan sonra hemşire olarak çalışmak istediği belirlenmiştir. Öğrencilerin cinsiyetine, mesleğe hazır hissetme durumuna ve mezuniyet sonrası çalışma durumlarına göre KARGEL puanlarının anlamlı düzeyde farklılık gösterdiği görülmüştür. KARGEL ölçeği toplam puan, kariyer uyumluluğu, kariyer seçimi ve iyimserlik alt boyutları ile HMAÖ mesleki statü ve HMAÖ- toplam puanları arasında pozitif yönde anlamlı düzeyde ilişki olduğu belirlenmiştir. Ayrıca yaş, cinsiyet, mezuniyet sonrasında çalışma planı ve HMAÖ alt boyutlarının öğrencilerin kariyer planlarını % 56 düzeyinde açıklayan değişkenler olduğu belirlenmiştir.

Öğrencilerin hemşirelik mesleğinin statüsüne ve niteliğine yönelik algılarının, kariyer planlarını etkileyen faktörler olduğu belirlenmiştir. Bu sebeple hemşirelik öğrencilerinde olumlu meslek algısının geliştirilmesi, geleceğe yönelik pozitif kariyer planlarına sahip olmaları açısından önem taşımaktadır. Bu sebeple, mezun olmadan önce hemşirelik eğitiminin en başından sonuna kadar, mesleğe yönelik profesyonel değerlerin kazandırılarak olumlu mesleki algı geliştirilmesi hedeflenmelidir.

**Anahtar Kelimeler:** Hemşirelik, kariyer geleceği planı, meslek algısı, mesleki statü, mesleki nitelik.

### **DETERMINING THE RELATIONSHIP BETWEEN FINAL YEAR NURSING STUDENTS' PERCEPTIONS OF THE NURSING PROFESSION AND THEIR ATTITUDES TOWARDS THEIR CAREER FUTURE**

#### **ABSTRACT**

This study was conducted to examine the relationship between senior nursing students' perception of the nursing profession and their attitudes towards their career future and to determine the factors affecting their career plans. The study, which is descriptive and relationship-seeking, was conducted with 105 students who met the inclusion criteria and agreed to participate in the study. Personal information form, Nursing Profession Perception Scale (NPPS) and Career Future Scale (CFS) were used to obtain the data. Number, percentage, arithmetic mean and standard deviation distribution were used in the evaluation of the data. T test, one-way ANOVA were used to compare the socio-demographic characteristics of the students and the scores obtained from the scales, Pearson correlation analysis was used to determine the relationship between the scales, and stepwise multiple linear regression analysis was used to determine the factors affecting their career plans. It was determined that 82.9 of the students participating in the study were women, 47.7% came to the department by their own choice, 75.2% liked the nursing department, and 81.9% wanted to work as a nurse after graduation. It was observed that CFS scores differed significantly depending on the students' gender, whether they felt ready for the profession, and their employment status after graduation. It was determined that there was a significant positive relationship between the CFS scale total score, career adaptability, career choice and optimism sub-dimensions and NPPS professional status and NPSS-total scores. In addition, it was determined that age, gender, post-graduation work plan and NPSS sub-dimensions were variables that explained students' career plans at a level of 56%. It has been determined that students' perceptions of the status and quality of the

nursing profession are factors affecting their career plans. For this reason, developing a positive professional perception in nursing students is important for them to have positive career plans for the future. For this reason, it should be aimed to develop a positive professional perception by gaining professional values for the profession from the very beginning to the end of nursing education before graduation.

**Keywords:** Nursing, career future plan, profession perception, professional status, professional qualification.

## KOLALI İÇECEKLERİN KÖK-UR NEMATODLARI (Nematoda: *Meloidogyne* spp.) VE BİTKİDE NEMATODTAN KAYNAKLANAN ZARAR ÜZERİNE ETKİLERİ

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### Kolalı İçeceklerin Kök-ur Nematodları (*Meloidogyne* spp.) ve Bitkide Nematodtan Kaynaklanan Zarar Üzerine Etkileri

#### ÖZET

Kök-ur nematodları (*Meloidogyne arenaria* ve *Meloidogyne javanica*) dünya’da birçok üründe ekonomik olarak büyük kayıplara neden olan obligat bitki parazitidir. Bu çalışma, 2017-2018 yıllarında farklı marka ve çeşit kolaların *Meloidogyne arenaria* ve *Meloidogyne javanica* üzerindeki etkinliğinin belirlenmesi için 4 tekerrürlü olarak çalışma kurulmuştur. Çalışmada, bitki boyu (cm), gövde yaş ve kuru ağırlıkları (g), köklerdeki urlanma oranı (0-10) ve kök başına yumurta sayısı üzerine etkileri verilerine bakılmıştır.

Bu çalışmanın sonucunda *Meloidogyne arenaria* ve *Meloidogyne javanica* yumurtasının açılımına etkisi tüm dozlarda belirgin bir şekilde görülmektedir. Elde edilen verilere göre denememizde kullandığımız kolanın tüm dozlarının yumurta açılımını düşürdüğü gözlenmiş olup, kolanın yükselen dozlarında yumurta açılımının daha düşük olduğu tespit edilmiştir.

**Anahtar kelimeler:** *Meloidogyne javanica*, *Meloidogyne arenaria*, domates, kola, mücadele

## ÜNİVERSİTE ÖĞRENCİLERİNİN GÖZ SAĞLIĞI VE OPTİSYENLİK İLE İLGİLİ GÖRÜŞLERİ VE METAFORİK ALGILARI

### UNIVERSITY STUDENTS' VIEWS AND METAPHORICAL PERCEPTIONS ON EYE HEALTH AND OPTOMETRY

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#### ÖZET

"Üniversite Öğrencilerinin Göz Sağlığı ve Optisyenlik İle İlgili Görüşleri ve Metaforik Algıları" başlıklı bu araştırma, üniversite öğrencilerinin göz sağlığı ve optisyenlik konularındaki bilgi, tutum ve pratiklerini incelemeyi amaçlamaktadır. Araştırma, yarı yapılandırılmış görüşme ve doküman analizi metodolojileri kullanılarak, öğrencilerin göz sağlığı ve optisyenlik konularındaki bilgi, farkındalık ve deneyimlerini detaylıca ele almaktadır.

Araştırmanın bulguları, öğrencilerin göz sağlığı bilgisinin ve optisyenlik hizmetlerine erişiminin ve kullanımının artırılması gerektiğini göstermektedir. Göz sağlığı bilgisinin artırılması, öğrencilerin yaşam tarzları, akademik yükleri ve dijital ekranlara maruz kalma süreleriyle yakından ilişkilidir. Bu, hem bireysel sağlık ve refahları hem de akademik başarı ve üretkenlikleri için önemli sonuçlar taşımaktadır.

Optisyenlik hizmetlerine erişim, öğrencilerin göz sağlığını ve genel refahını optimize etmek için kritiktir. Öğrenciler, bu hizmetlerin daha erişilebilir, şeffaf ve öğrenci dostu olmasını istemektedir. Bu, üniversitelerin ve sağlık hizmeti sağlayıcılarının, optisyenlik hizmetlerini öğrencilere daha etkili ve anlaşılır bir şekilde sunma konusundaki sorumluluklarını vurgular.

Sonuç olarak, bu araştırma, üniversite öğrencilerinin göz sağlığı ve optisyenlik hizmetleri konusundaki bilinç ve uygulamalarını artırmak için kapsamlı ve bütüncül stratejilerin benimsenmesi gerektiğini vurgular. Bu, öğrencilerin bireysel ve akademik başarılarını, yaşam kalitelerini ve genel refahlarını artıracak ve toplum genelinde geniş çaplı olumlu etkiler yaratacaktır.

**Anahtar Kelimeler:** Göz Sağlığı, Optisyenlik, Metafor.

## ABSTRACT

The research titled "University Students' Views and Metaphorical Perceptions on Eye Health and Optometry" aims to examine the knowledge, attitudes, and practices of university students regarding eye health and optometry. Utilizing semi-structured interviews and document analysis methodologies, the study delves into students' knowledge, awareness, and experiences concerning eye health and optometry in detail.

The findings of the study indicate a necessity to enhance the students' knowledge and access to optometry services. The enhancement of knowledge on eye health is closely linked to students' lifestyles, academic burdens, and exposure to digital screens. This carries significant implications for both their individual health and wellness, and their academic achievement and productivity.

Access to optometry services is crucial to optimize students' eye health and overall well-being. Students express a desire for these services to be more accessible, transparent, and student-friendly. This underscores the responsibility of universities and health service providers to present optometry services to students in a more effective and comprehensible manner.

In conclusion, this research underscores the need for adopting comprehensive and holistic strategies to augment the consciousness and practices of university students regarding eye health and optometry services. This will not only elevate students' individual and academic achievements, life quality, and overall wellness but will also have broad positive impacts across society.

**Keywords:** Eye Health, Optometry, Metaphor



## ERİŞKİN YOĞUNBAKIMDA HEMŞİRELERİN HASTALARLA ETKİLEŞİMİ

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### ÖZET

**Giriş ve Amaç:** Hemşireler hastaların iletişim gereksinimlerini karşılamada hemşireler diğer sağlık ekibi üyelerine göre daha etkindir. Yoğun bakımda yatan hastalarda iletişim ve etkileşim çok daha önemli bir konu haline gelmektedir. Çünkü yoğun bakım gibi servislerde tedavi gören bilinci kapalı hastalarla da uygun iletişim teknikleri kurulmalıdır. Hemşireler bakım verdikleri süreçte profesyonel hasta-hemşire ilişkisini geliştirebilmesi için öncelikle hasta ve hemşire arasındaki etkileşimin değerlendirilmesi gerekir. Bu değerlendirme sonucuna göre yapılan iyileştirme çabaları hem bakımın kalitesini yükseltecek hem de hastalarından aldıkları bakımdan memnuniyetlerini arttıracaktır. Bu nedenle bu çalışma, hemşirelerin hemşire-hasta etkileşimini değerlendirmek ve buna yönelik görüş ve düşüncelerinin incelemek amacıyla planlanmıştır.

**Materyal ve Method:** Araştırmanın örneklemini 2023 yılında bir Devlet Hastanesinde yoğun bakım servislerinde çalışan 12 hemşire oluşturmuştur. Bu çalışmada fenomenolojik desen nitel veri toplama yöntemi kullanılmıştır. Araştırma verileri, “Yarı Yapılandırılmış Görüşme Formu” kullanılarak toplandı. Nitel veriler, bilgisayar ortamında araştırmacı tarafından yazılı hale getirildikten sonra içerik analizi yapılarak çözümlenmiştir.

**Bulgular:** Araştırmaya katılan hemşireler 26-40 yaş aralığındadır. Hemşirelerin çoğu yoğun bakımda 4-11 yıl arasında çalışmıştır. Hemşirelerin çoğu mesleğinden ve yoğun bakımda çalışmaktan memnun olduğunu ifade etmiştir. Hemşirelerin çoğu yapılan uygulamalarda hastalarından çok etkilendiklerini, yapılan uygulamalarda onay almadıklarını, hastayla sözsüz iletişim kurmadıklarını, göz teması kurmadıklarını, hastaları dinlemediklerini ifade etmişlerdir. Hemşirelerden alınan yanıtlardan oluşan üst temalar; “etkileşimin anlamı” , “ sorunlar ve öneriler”, “ hasta katılımı” ve “etik” şeklinde oluşturulmuştur.

**Sonuç ve Öneriler:** Hemşirelerin yoğun bakım gibi servislerde hastalarından etkilendikleri ve iletişimlerinin bu etkilere bağlı olduğu ortaya çıkmıştır. Hemşirelerin sözsüz iletişim tekniklerini geliştirmesinin, bakım odaklı hasta hemşire etkileşimine katkıda bulunacağı düşünülmektedir.

**Anahtar Kelimeler:** Hemşire, İletişim, Hasta-Hemşire Etkileşimi.

## SAĞLIK BİLİMLERİ FAKÜLTESİ ÖĞRENCİLERİNİN YAPAY ZEKA KAYGISI

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### ÖZET

**Giriş ve Amaç:** Günümüzde teknolojik gelişmelerin olumlu etkileri pek ok alanda olduğu gibi sağlık alanında da kullanılmaktadır. Ancak hayatımızda önemli bir yere sahip olan teknolojinin gelecekte insan emeğinin yerini alacağı kaygısı özellikle sağlık alanında çalışan grubu önemli ölçüde etkileyebilmektedir. Sağlık çalışanlarının özellikle yapay zeka gibi hızla gelişen teknolojiye kaygı ve endişe duymadan uyum göstermesi önemli bir durum olarak değerlendirilmektedir. Bu nedenle bu çalışmada sağlık bilimleri fakültesinde öğrenim gören hemşirelik ve ebelik öğrencilerinin yapay zeka kaygı düzeylerinin incelenmesi amaçlanmıştır.

**Materyal ve Method:** Tanımlayıcı, kesitsel türdeki çalışma bir sağlık bilimleri fakültesinde 153 ebelik ve hemşirelik öğrencisi ile gerçekleştirilmiştir. Araştırmanın verilerini toplamak için Tanımlayıcı Soru Formu ve Terzi'nin (2020) Türkçeye uyarladığı Yapay Zeka Kaygısı Ölçeği ile toplanmıştır. Bu çalışmada ölçeğin Cronbach  $\alpha$  değeri .93'dür. Verilerin değerlendirilmesinde uygun istatistiksel yöntemler kullanılmıştır.

**Bulgular:** Öğrencilerin yapay zeka kaygı düzeyleri ortalaması ( $\bar{x}=2.50\pm 1.15$ ) ölçek ortalamasının altındadır. Öğrencilerin yapay zeka kaygı düzeylerinin düşük olduğu belirlenmiştir ve öğrencilerinin çoğunun yasal ve etik açıdan yaşanabilecek problemlerle ilişkili kaygı yaşanabileceğini ifade etmişlerdir.

**Sonuç ve öneriler:** Araştırmaya katılan öğrencilerin yapay zeka kaygı düzeylerinin ortalamasının düşük olduğu belirlenmiştir. Bu sonuca göre sağlık alanında öğrenim gören öğrencilerin alandaki gelişmelere ve teknolojiye kolay uyum sağlayacağı düşünülebilir. Öğrencilerin eğitimlerinde teknoloji ve gelişim konularında konulara yer verilmesi ve bu konudaki özgüvenlerinin geliştirilmesi için uygulama alanlarında da kullanılan teknolojik gelişimlere uyum sağlamalarının desteklenmesi önerilebilir.

**Anahtar Kelimeler:** Öğrenci, yapay zeka, yapay zeka kaygısı

## KREDİ VE YURTLAR KURUMUNA BAĞLI YURTLARDA KALAN ÜNİVERSİTE ÖĞRENCİLERİNİN SAĞLIKLI YAŞAM BİÇİM DAVRANIŞLARININ İNCELENMESİ

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### Özet

**Amaç:** Bu araştırma Kredi ve Yurtlar Kurumu'na bağlı yurtlarda kalan üniversite öğrencilerinin sağlıklı yaşam biçim davranışlarının incelenmesi amacıyla yapılmıştır.

**Materyal ve Metot:** Tanımlayıcı tipte olan bu araştırma, Mart-Haziran 2023 tarihleri arasında yapılmıştır. Çalışmanın evrenini Türkiye'nin Güneydoğu Anadolu bölgesinde yer alan bir üniversitenin Kredi Yurtlar Kurumunda kalan öğrenciler oluşturmuştur (N=1285). Evreni bilinen örneklem hesaplama yöntemi ile  $\alpha = .05$ , %95 güven düzeyi minimum 296 bireye ulaşılması gerektiği belirlenmiş fakat araştırmaya katılmaya gönüllü 332 öğrenci ile yüz yüze görüşülerek tamamlanmıştır. Verilerin analizinde sayı, ortalama, yüzde dağılımları ve normal dağılım gösteren verilerde parametrik testleri (Student t testi, ANOVA) kullanılmıştır.

**Bulgular:** Öğrencilerin %68.4'ü kadın, %31.6'sı erkektir. Öğrencilerin sağlıklı yaşam biçimi davranışları ölçek toplam puan ortalaması ( $119.71 \pm 17.46$ ), en yüksek puan manevi gelişim ( $22.00 \pm 3.90$ ), en düşük puanın fiziksel aktivite ( $18.09 \pm 4.19$ ) alt ölçeğinden alındığı belirlendi. Sağlıklı Yaşam Biçimi Davranışları Ölçeği Sağlık Sorumluluk Alt Boyutu ile düzenli spor faaliyetlerine katılma, yurt arkadaşları ile sağlıklı ilişkiler kurma durumu; Beslenme alt boyutu ile yurt yemekleri dışında fastfood ile beslenme durumu; Fiziksel Aktivite alt boyutu ile cinsiyet, sigara ve alkol kullanma durumu; Kişilerarası İlişkiler alt boyutu ile yurt ortak alanlarını hijyenik bulma durumu; Stres Yönetimi alt boyutu ile düzenli spor faaliyetlerine katılma durumu arasında istatistiksel olarak önemli fark saptanmıştır ( $p < 0.05$ ).

**Sonuç:** Kredi yurtlar kurumuna bağlı yurtlarda kalan öğrencilerin sağlıklı yaşam biçimi davranışları orta düzeyde bulunmuştur. Çalışmada cinsiyet, sigara ve alkol kullanımı, yurt ortak alanlarını hijyenik bulma, yurt yemekleri dışında fastfood beslenme, düzenli spor faaliyetlerine katılım, yurt arkadaşları ile sağlıklı ilişkiler kurma öğrencilerin sağlıklı yaşam biçimi davranışlarını etkilediği sonucuna varılmıştır.

**Anahtar Kelimeler:** Sağlıklı Yaşam Biçimi Davranışları, Üniversite Öğrencileri, Sağlıklı Yaşam

## EXAMINATION OF HEALTHY LIFESTYLE BEHAVIORS OF UNIVERSITY STUDENTS STAYING IN DORMITORIES AFFILIATED WITH THE CREDIT AND DORMITORIES INSTITUTION

### ABSTRACT

**Objective:** This study was conducted to examine the healthy lifestyle behaviors of university students staying in dormitories affiliated with the Credit and Dormitories Institution.

**Material and Method:** This descriptive study was conducted between March and June 2023. The population of the study consisted of students staying at the Credit Dormitories Institution of a university located in the Southeastern Anatolia region of Turkey (N=1285). With the known sample calculation method,  $\alpha = .05$ , 95% confidence level, a minimum of 296 individuals should be reached, but the study was completed by face-to-face interviews with 332 students who volunteered to participate in the study. In the analysis of the data, number, mean, percentage distributions, and parametric tests (Student t-test, ANOVA) were used for normally distributed data.

**Results:** 68.4% of the students were female and 31.6% were male. The mean total score of the healthy lifestyle behaviors scale ( $119.71 \pm 17.46$ ), the highest score was obtained from spiritual development ( $22.00 \pm 3.90$ ), and the lowest score was obtained from physical activity ( $18.09 \pm 4.19$ ) subsc. There was a statistically significant difference ( $p < 0.05$ ) between the Health Responsibility subscale of the Healthy Lifestyle Behaviors Scale and participation in regular sports activities and healthy relationships with dormitory mates; between the Nutrition subscale and eating fast food other than dormitory meals; between the Physical Activity subscale and gender, smoking and alcohol use; between the Interpersonal Relations subscale and finding the common areas of the dormitory hygienic; between the Stress Management subscale and participation in regular sports activities.

**Conclusion:** The healthy lifestyle behaviors of students staying in dormitories affiliated with the credit and dormitories institution were found to be at a moderate level. In the study, it was concluded that gender, smoking and alcohol use, finding the common areas of the dormitory hygienic, eating fast food other than dormitory meals, participating in regular sports activities, and establishing healthy relationships with dormitory mates affect students' healthy lifestyle behaviors.

**Key Words:** Healthy Lifestyle Behaviors, University Students, Healthy Living

## **VOLEYBOLCULARA UYGULANAN PROPRIOSEPTİF NÖROMÜSKÜLER FASILİTASYON GERME EGZERSİZLERİNİN ANAEROBİK GÜÇ ESNEKLİK VE MOTORİK ADAPTASYONLAR ÜZERİNE RANDOMİZE KONTROLLÜ ÇALIŞMA**

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### **ÖZET**

Genç erkek voleybolculara uygulanan proprioseptif nöromüsküler fasilitasyon germe (PNF) egzersizlerinin anaerobik güç, esneklik ve motorik adaptasyonlar üzerine etkilerinin araştırıldığı bu çalışmaya; özel bir spor kulübünde aktif olarak voleybol oynayan 15-17 yaş arasında toplam 18 sporcu birey dahil edilmiştir. Çalışmaya dahil olan bütün bireylerden çalışma öncesinde, yaş, boy uzunluğu, vücut ağırlığı ölçümleri kayıt altına alınmıştır. Araştırma öncesinde bireylere çalışmanın amacı, içeriği ve uygulanacak egzersizler ile ilgili bilgiler verilmiş ve iki hafta boyunca deneysel sürece uyum çalışmaları yaptırılmıştır. Çalışmaya katılan grupların random olarak dağılımları deney grubu ile kontrol grubu şeklinde ikiye ayrıldı. Deney grubuna voleybol antrenmanlarına ek olarak otuz dakika PNF germe egzersiz protokolü uygulandı. Kontrol grubu yalnızca teknik ve taktik antrenmana aynı deneysel süreç boyunca devam etmiştir. Sporcuların voleybol antrenmanlarında uyguladıkları program voleybola özgü seçilen antrenman dirillerinden hazırlandı. PNF egzersizleri özel ısınmadan sonra yaptırılmıştır. Elde edilen verilerin istatistiksel analizleri SPSS 22.0 programından yararlanılmıştır. Çalışma bulgularına göre; anaerobik güç, denge ve motorik özellikler değerlendirildiğinde deney grubu lehine anlamlılık tespit edilmiştir ( $p<0.05$ ). Sonuç olarak, bu çalışma germe tekniklerinin uygulanmasının, genç voleybolcuların anaerobik güçlerini artırdığı ve denge performanslarını geliştirdiği yönünde anlamlı veriler sunmaktadır

**Anahtar Kelimeler :** Germe, voleybol, egzersiz, antrenman

## HEMŞİRELİK ALANINDA BİLİŞİM UYGULAMALARI

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### ÖZET

Günümüzde teknolojinin hızla gelişmesi, sağlık sektöründe de önemli değişikliklere neden olmaktadır. Hemşirelik, hasta bakımı ve sağlık hizmetlerinin kalitesini artırmak için bilişim uygulamalarını etkin bir şekilde kullanmaktadır. Bu uygulamalar, hasta takibi, kayıt tutma, iletişim ve eğitim gibi alanlarda önemli avantajlar sunmaktadır. Hemşirelikteki bilişim uygulamalarının başında elektronik sağlık kayıtları gelmektedir. ESK, hastaların tıbbi geçmişlerini dijital ortamda saklamak ve paylaşmak için kullanılan bir sistemdir. Bu sayede hemşireler, hastaların tedavi süreçlerini daha etkili bir şekilde takip edebilir, doğru ve güncel bilgilere anında erişebilirler. Bilişim uygulamalarının bir diğer önemli alanı ise telehemşireliktir. Telehemşirelik, uzaktan iletişim teknolojilerini kullanarak hastaların sağlık durumlarını değerlendirmek ve takip etmek için kullanılır. Hemşireler, video görüşmeler, sesli aramalar veya yazılı iletişim araçları üzerinden hastalarla etkileşimde bulunabilir. Bu sayede, uzak bölgelerdeki hastalara daha etkin bir şekilde hizmet verilebilir ve acil durumlarda hızlı müdahale sağlanabilir. Sanal gerçeklik (VR) ve artırılmış gerçeklik (AR) gibi teknolojiler, hemşirelerin gerçek hayattaki durumları simüle etmelerine ve bu ortamlarda pratik yapmalarına olanak tanır. Bu sayede, acil durumlara hazırlıklı olmaları ve yeni tedavi yöntemlerini öğrenmeleri kolaylaşır. Hemşirelik uygulamalarında veri analitiği ve yapay zeka, hastaların tedavi süreçlerini optimize etmek için kullanılır. Büyük veri analizi, hastalık paternlerini belirlemede ve tedavi sonuçlarını değerlendirmede yardımcı olabilir. Ayrıca, yapay zeka destekli karar verme sistemleri, hemşirelere hızlı ve doğru kararlar almalarında yardımcı olabilir. Sonuç olarak, hemşirelik alanındaki bilişim uygulamaları, sağlık hizmetlerinde verimliliği artırarak hastaların daha iyi bir bakım almasına olanak tanımaktadır. Bu teknolojik gelişmeler, hemşirelerin işlerini daha etkili bir şekilde yönetmelerine ve sağlık sektöründe dijital dönüşümü hızlandırmalarına yardımcı olmaktadır.

**Anahtar Kelimeler:** Bilişim, Hemşirelik, Teknoloji, Sağlık

## HEMŞİRELİK VE İNOVASYON

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### ÖZET

Hemşirelik, sağlık sektöründe öncü bir rol oynayan ve sürekli değişen ihtiyaçlara hızlı bir şekilde uyum sağlaması gereken bir meslek dalıdır. Bu bağlamda, inovasyon hemşirelik pratiğini şekillendiren ve hasta bakımını dönüştüren önemli bir etkidir. Hemşireler, geleneksel yöntemleri sürdürmelerinin yanı sıra, teknoloji, süreç iyileştirmeleri ve yeni bakım modelleri gibi inovasyonları benimsemek suretiyle daha etkili ve kişiye özel hizmetler sunma konusunda öncü bir rol üstlenmektedirler. Hemşirelik, inovasyonu sadece teknolojik gelişmelerle sınırlamaz; aynı zamanda yaratıcı bakım modelleri üzerinde de çalışır. Örneğin, evde bakım hizmetleri, hasta merkezli bakım ve toplum odaklı bakım gibi yeni yaklaşımlar, hemşirelerin hasta ihtiyaçlarına daha duyarlı ve özelleştirilmiş çözümler geliştirmelerine olanak tanır. Hemşirelikte inovasyon sadece klinik uygulamalarla sınırlı değildir; aynı zamanda eğitim ve profesyonel gelişim alanlarını da kapsar. Hemşireler, sürekli eğitim programları, simülasyonlar ve dijital öğrenme platformları aracılığıyla güncel kalmak ve yeni pratikleri benimsemek için fırsatlar ararlar. Bu, mesleklerini sürekli olarak geliştirmelerine ve sağlık hizmetlerindeki en son yenilikleri takip etmelerine yardımcı olur. Hemşirelikteki inovasyonun bir diğer boyutu da veri analitiği ve yapay zeka uygulamalarıdır. Büyük veri analizi, hastaların tedavi süreçlerini değerlendirmede ve kişiye özel bakım planları oluşturmada kullanılabilir. Yapay zeka destekli karar verme sistemleri, hemşirelere daha hızlı ve daha doğru kararlar almalarında yardımcı olabilir. Sonuç olarak, hemşirelik ve inovasyon birbirini tamamlayan unsurlardır. Hemşireler, sürekli değişen sağlık ortamında başarılı olabilmek için yenilikçi düşünme, teknolojik gelişmeleri benimseme ve yaratıcı çözümler üretme becerilerini geliştirmelidirler. Bu yaklaşım, hemşirelik pratiğini ileriye taşıırken hastaların bakım kalitesini artırabilir ve sağlık sistemlerinin sürdürülebilirliğine katkıda bulunabilir.



**Anahtar Kelimeler:** İnovasyon, Yenilik, Sağlık, Hemşirelik

## **S700 ÇELİĞİNİN VE HARDOX 450 ÇELİKLERİNİN, ROBOTİK KAYNAK TEKNOLOJİSİYLE, ER 110S-G TEL İLE BİRLEŞTİRİLMESİ VE KAYNAK KABİLİYETLERİNİN İNCELENMESİ**

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### **ÖZET**

Bu çalışmada, Robot kaynağı yöntemi ile, AWS A5.28 normuna göre ER 110S-G kaynak teli ve koruyucu gaz koşulları modifiye edilerek Hardox450 çeliği ve S700 çeliğinin kaynak yapılarak mekanik ve makro yapısal özellikleri incelenmiştir. Robot kaynağı sistemlerinde birleştirilen parçaların, çekme, çentik, sertlik değerleri yanı sıra mikro ve makro yapıları incelenmiştir.

Öncelikle, 2 şer adet 4x150x350 mm Hardox450 çeliği ve 8x150x350 boyutlarında s700 çeliği talaşlı işlem uygulanarak boy kısımlarından 45° lik kaynak ağız açıklığı verilmiştir. İkişerli gruplar haline getirilen parçalar, ER 110S-G aynak teli Hb 212 karışım gazları korumasında, Robot kaynağı sistemlerinde çoklu paso ile kaynaklı birleştirilerek, plakalar H1 ve H2 ve olarak adlandırılmıştır. Birleştirilen parçaların, çekme, çentik, sertlik değerleri yanı sıra mikro ve makro yapıları incelenmiştir.

**Anahtar Kelimeler:** Kaynak, Masif tel, Hardox450, S700 , Robotlu kaynaklı imalat

## PRICE ESTIMATION PROGRAM FOR SECOND-HAND VEHICLES WITH MACHINE LEARNING

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### ABSTRACT

Nowadays, the second-hand market in the automobile industry is highly sought-after by users. Of course, price is the determining factor in this market. This study aims to estimate the vehicle prices in this market, which is very popular with customers, through machine learning and applications developed with different regression techniques. In this context, a data set containing the characteristics of second-hand vehicles of a brand offered for sale in the UK was studied for machine learning. The data in this dataset was processed using the Python language. After the data in the data set was first read and visualized, it was suitable for machine learning with various arrangements. Predictions were made with three different algorithms, and the results were compared. The algorithm that makes predictions with the slightest margin of error has been determined, and the algorithms have been programmed with an interface for users.

**Keywords:** Artificial intelligence, machine learning, Python, dataset, data visualization, regression, algorithm, automobile.

## PRICE ESTIMATION PROGRAM FOR SECOND-HAND VEHICLES WITH MACHINE LEARNING

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### ABSTRACT

Nowadays, the second-hand market in the automobile industry is highly sought-after by users. Of course, price is the determining factor in this market. This study aims to estimate the vehicle prices in this market, which is very popular with customers, through machine learning and applications developed with different regression techniques. In this context, a data set containing the characteristics of second-hand vehicles of a brand offered for sale in the UK was studied for machine learning. The data in this dataset was processed using the Python language. After the data in the data set was first read and visualized, it was suitable for machine learning with various arrangements. Predictions were made with three different algorithms, and the results were compared. The algorithm that makes predictions with the slightest margin of error has been determined, and the algorithms have been programmed with an interface for users.

**Keywords:** Artificial intelligence, machine learning, Python, dataset, data visualization, regression, algorithm, automobile.

## DERİ KONFEKSİYON SEKTÖRÜNDE SÜRDÜRÜLEBİLİRLİK VE GERİ DÖNÜŞÜM OLANAKLARI

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### ÖZET

Dünya tarihindeki önemli değişimler, sanayileşmenin, nüfus artışının, teknolojik gelişmelerin ve küreselleşmenin etkilerini, bu süreçlerin üretim ve tüketimi nasıl artırdığını açıklamaktadır. Ancak, bu artış doğa, çevre, hayvanlar ve bitkiler gibi değerli unsurları değersiz metalar haline getirmiştir. Özellikle hızlı tüketim kültürü, sınırlı kaynakları ve ekosistemi olumsuz yönde etkilemiştir.

Mevcut dünya düzeninde kaynakların hızla tükenmesi, doğanın yok olması, insan sağlığının bozulması ve bu durumların ekonomik, ekolojik ve sosyal sorunlara yol açtığı bilinmektedir. Üretim süreçlerinde su ve kimyasal madde kullanımının fazlalığı, kaynakların israfı ve atıkların çevreye bırakılması hava, su, toprak gibi hayati kaynaklara zarar vermektedir. Ekonomik kalkınmanın insan yaşamına kolaylıklar sağlaması, küresel sorunları göz ardı etmek için yeterli bir sebep değildir.

Her sanayi dalında olduğu gibi deri konfeksiyon sektörünün de, insan ve çevre sağlığını gözeterek sürdürülebilir kalkınmayı benimsemesi gerekmektedir. Tüketicilerin sürdürülebilir moda gibi yaklaşımları, sektördeki faaliyetlerin çevre dostu olmasına da katkı sağlamaktadır. Deri ürünleri başka hiçbir sektöre benzemeyen bir özellik taşımaktadır. Bu özellik doğrudan, sektörün ham maddesi olan derinin kendine has dokusu ve bu dokuyu tüketilinceye kadar

sürdürebilmesidir. Yapısındaki doğal liflerle üretilmesi, uzun ömürlü olması ve geri dönüşüm olanaklarının sağlanması gibi unsurlar sektördeki sürdürülebilirlik açısından çok önemlidir.

Bu çalışmanın amacı, deri konfeksiyon sektöründe sürdürülebilirlik konseptini ele almak ve sektördeki faaliyetlerin ekolojik açıdan incelenmesini sağlamaktır. Araştırma, üreticilerde, tüketicilerde ve araştırmacılarda farkındalık oluşturmayı, sürdürülebilir moda dikkat çekmeyi ve sürdürülebilir kalkınmaya katkı sağlamayı amaçlamaktadır. Sürdürülebilirlik, deri konfeksiyon sektöründe değerlendirilerek, doğal kaynakların etkili kullanımı, atık yönetimi ve çevre dostu üretim gibi unsurlar açısından incelenmiştir.

**Anahtar Kelimeler:** Deri Konfeksiyon, Sürdürülebilirlik, Geri Dönüşüm

## AYAKKABI MALZEMELERİNİN AYAK SAĞLIĞI ÜZERİNDEKİ ETKİLERİ

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### ÖZET

Ayakların vücudun temel dayanak noktaları olarak sürekli hareket halinde olmaları ve onların gün boyunca üzerlerinde taşıdığı yük düşünüldüğünde, ayak sağlığının büyük bir öneme sahip olduğu anlaşılmaktadır. Ayaklarda oluşan herhangi bir rahatsızlık veya yaralanma, sadece acı verici olmakla kalmaz, aynı zamanda günlük aktiviteleri kısıtlar ve normal hareketleri zorlaştırabilir. Bu nedenle, ayak sağlığına gereken özeni göstermek, yaşam kalitesini artırmak ve genel sağlığı korumak açısından kritik bir öneme sahiptir. Bu bağlamda, doğru ayakkabı seçimi, ayak sağlığını korumanın temel faktörlerinden biridir.

Bu çalışmanın amacı, ayakkabı malzemelerinin ayak sağlığı üzerindeki etkilerini araştırmak ve bu etkileri anlamaktır. Ayakkabı malzemelerinin seçimi, ayak sağlığını doğrudan etkileyebilir, bu nedenle bu çalışma, farklı malzemelerin ayak sağlığına olan etkilerini inceleyerek bilgi sağlamayı amaçlamaktadır. Ayakkabı malzemeleri ve ayak sağlığı arasındaki ilişkiyi anlamak, doğru ayakkabı seçimi konusunda bilinç oluşturarak bireylerin sağlıklı ayaklar için daha doğru kararlar almalarına katkıda bulunabilir.

**Anahtar Kelimeler:** Ayakkabı Malzemeleri, Ayak Sağlığı, Ayakkabı Seçimi

## RPA AND AI: CHALLENGES AND OPPORTUNITIES

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### ABSTRACT

With the developing technology, Robotic Process Automation (RPA) and Artificial Intelligence (AI) are two important technologies that are rapidly becoming widespread and creating a great impact on the business world and the business processes of companies. RPA is used to automate repetitive and rule-based tasks, and its main goal is to reduce errors and speed up business processes by minimizing human intervention. The use of RPA is especially common in areas such as finance, accounting, customer service, and human resources. Artificial intelligence stands out as a technology equipped with learning and decision-making capabilities. Various techniques such as deep learning, natural language processing, image recognition, and predictions are very powerful in analyzing and understanding data. When RPA and AI are combined with their ability to automate business processes and handle complexity, AI can handle complexity while RPA automates business processes. For example, an RPA bot automates data entry of invoices, while AI can analyze this data. Since integrating these technologies has the potential to give companies a competitive advantage by accelerating the transformation of business processes, the necessity for companies to invest in these technologies and adopt this transformation is becoming increasingly important. This study, focusing on the advantages and challenges provided by the collaboration of RPA and artificial intelligence, will discuss how it has changed the business world, how business processes are better optimized, and its challenges and opportunities.

**Keywords:** Robotic Process Automation (RPA), Artificial Intelligence (AI), Automation of Processes



## ROBOTİK SÜREÇ OTOMASYONUNA BAĞLI VERİMLİLİK ARTIŞI VE YAPAY ZEKA İLE ROBOTİK SÜREÇ OTOMASYONU SÜREÇLERİNİN DÖNÜŞÜMÜ: VAKIF KATILIM BANKASI ÖRNEĞİ

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### ÖZET

Günümüzde teknolojinin hızla evrim geçirmesiyle birlikte, hayatı kolaylaştıran çözümler giderek artmaktadır. Özellikle Yapay Zekanın (YZ) gelişimiyle birlikte Robotik Süreç Otomasyonu (RSO), etki alanını sürekli olarak genişleterek, geleceğin en önemli ve dönüştürücü teknolojilerinden biri olarak öne çıkmaktadır. RSO, temel olarak insan eylemlerini taklit edebilen ve uygulamaları yüksek hassasiyetle işlemek için kullanıcı ara yüzünü veya entegrasyonları kullanan insanlar tarafından manuel gerçekleştirilen, tekrarlanan ve kurallara dayalı görevleri otomatikleştirebilen bir yazılımdır. YZ ve RSO'nun birlikte kullanılması durumunda YZ, karmaşık görevleri anlayabilir ve öğrenebilirken, RSO tekrarlayan işleri hızlı ve düzenli bir şekilde yapar. Bu birleşim, iş süreçlerini daha verimli ve hatasız hale getirir. Bu çalışmada RSO'nun iş süreçlerine sağladığı faydaların ortaya konması ve YZ'nin iş süreçleri üzerindeki potansiyelini ve etkilerini incelemeyi amaçlanmaktadır. Çalışmanın amacına uygun olarak Vakıf Katılım Bankası örneği kullanılarak yüksek verimlilik ve iş gücü tasarrufu elde edilen RSO projeleri üzerinden iş süreçlerinin nasıl dönüştürüldüğü, bu projelerin iş yükü kazanımı ve çalışma performansı ele alınmıştır. Çalışma bulgularına göre, RSO'nun kurumlara sadece maliyet avantajı sağlamakla kalmayıp aynı zamanda personel kaynaklarını daha stratejik

bir şekilde yönetme fırsatı sunduğu belirlenmiştir. Bu nedenle, kurumlar RSO kullanarak operasyonel verimliliklerini artırabilir, maliyetleri düşürebilir ve aynı zamanda müşterilere daha hızlı ve etkili hizmet sunarak rekabet avantajı elde edebilirler.

**Anahtar Kelimeler:** Robotik Süreç Otomasyonu, Verimlilik, Maliyet Tasarrufu, Yapay Zeka

## **PRODUCTIVITY INCREASE DUE TO ROBOTIC PROCESS AUTOMATION AND TRANSFORMATION OF ROBOTIC PROCESS AUTOMATION PROCESSES WITH ARTIFICIAL INTELLIGENCE: THE CASE OF VAKIF PARTICIPATION BANK**

### **ABSTRACT**

Today, with the rapid evolution of technology, solutions that make life easier are increasing. Especially with the development of Artificial Intelligence (AI), Robotic Process Automation (RPA) stands out as one of the most important and transformative technologies of the future by continuously expanding its sphere of influence. RPA is software that can mimic human actions and automate repetitive and rules-based tasks performed manually by humans using the user interface or integrations to process applications with high precision. If AI and RPA used together, AI can understand and learn complex tasks, while RPA performs repetitive tasks quickly and regularly. This combination makes business processes more efficient and error-free. This study aims to reveal the benefits of RPA to business processes and to examine the potential and effects of AI on business processes. In accordance with the purpose of the study, how business processes transformed through RPA projects that achieve high efficiency and labor savings, workload gain and work performance of these projects discussed using the example of Vakıf Participation Bank. According to the findings of the study, it has been determined that RPA not only provides institutions with a cost advantage but also offers the opportunity to manage personnel resources more strategically. Therefore, by using RPA, organizations can increase their operational efficiency, reduce costs, and gain a competitive advantage by providing faster and more effective service to customers.

**Keywords:** Robotic Process Automation (RPA), Efficiency, Cost Saving, Artificial Intelligence (AI)

## USING METAHEURISTIC METHODS AND COMPARISON OF ALGORITHMS IN REAL-WORLD PROBLEMS

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### ABSTRACT

Design problems in mechanical engineering arise from different types of objectives and varying levels of difficulty, such as geometric, kinematic conditions and equality or inequalities and often non-linear constraints on material resistance. A special type of algorithm called metaheuristics is used to solve such problems. These algorithms aim to find a good enough solution for optimization problems, especially when information is insufficient or computer capacity is limited. In this study, well-known metaheuristic algorithms (Firefly Algorithm, Gray Wolf Optimization, Particle Swarm Optimization and Pathfinder Algorithm) in the literature were used to solve mechanical engineering design problems. These algorithms were tested with real-world problems (Four Stage Gearbox, Gas Transmission Compressor Design, Gear Train Design, Himmelblau's Function, Hydrostatic Thrust Bearing Design, Multiple Disc Clutch Brake Design, Optimal Design of Industrial Refrigeration System and Planetary Gear Train Design Optimization) in two different scenarios depending on the number of population, and according to the results, performances of the metaheuristic algorithms were compared with each other.

**Keywords:** Optimization, metaheuristics, real-world problems, engineering design.

## SOLVING REAL-WORLD PROBLEMS WITH METAHEURISTIC METHODS AND PERFORMANCE COMPARISON OF ALGORITHMS IN THE LITERATURE

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### ABSTRACT

The goal of optimization is to achieve the “best” design according to a set of prior conditions or constraints. These include maximizing factors such as productivity, power, reliability, longevity, efficiency and availability. Metaheuristic algorithms, one of the optimization techniques, have gained increasing importance in engineering design in recent years due to their simplicity and rapidity in finding solutions. This has led to the proliferation of these metaheuristics and an increased tendency to develop new algorithms. Moreover, metaheuristic algorithms are widely used to solve different optimization problems in many application areas. In this study, a research was conducted on addressing real-world problems (Robot Gripper Problem, Pressure Vessel Design Problem, Rolling Element Bearing Problem, Step-Cone Pulley Problem, Tension Compression Spring Design Problem, Three-Bar Truss Beam Design Problem, Weight Minimization of Speed Reducer Problem and Welded Beam Design Problem) in the field of mechanical engineering with metaheuristic algorithms (Ant Colony Optimization, Artificial Bee Colony, Salp Swarm Algorithm and Sine Cosine Algorithm) and performing performance analyzes of these algorithms. In experimental studies, two different scenarios were gradually determined according to various numbers of population parameter. According to the results obtained, it was decided which method is the most suitable for this type of problems.

**Keywords:** Optimization, Metaheuristics, Real-world Problems, Engineering Problems.

## DESIGNING LATTICE-STRUCTURED EXPERIMENTAL SPECIMENS VIA AUTOMATED PARAMETER ITERATIONS USING NTOPCL AND PYTHON PROGRAMMING LANGUAGE

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### ABSTRACT

This study focuses on the automated generation and simulation of compression test samples made from lattice structures using the automation features of nTopology, an implicit modeling software. The research is vital for selecting lattice structures with lightweight and robust designs, which have significant potential applications in engineering. The study involves the automatic creation of 48 distinct samples with varying cell sizes, beam thicknesses, and types of lattice structures that influence porosity. This process was carried out using nTopCL and a custom Python script specifically designed for this workflow. Parameters such as the percentage of weight savings per unit volume, stress, strain, and mass of the samples were examined in detail.

Significant variations were observed among the samples. The lightest sample was found to have a Simple Cubic lattice structure, while the most durable was identified as IsoTruss. Conversely, the heaviest sample was of the Weaire-Phelan structure, and the least durable was Diamond. These findings demonstrate the significant impact of the type and geometric dimensions of the lattice structure on the mechanical properties of the samples. According to the analysis results, 20 samples are predicted to break, whereas 28 will undergo only elastic deformation.

This study provides valuable insights into understanding the mechanical behavior of lattice structures under compression and can be fundamental in customizing these structures for potential engineering applications. The findings specifically point to certain lattice types for applications requiring lightweight and high durability, offering guidance for further research in this field.

**Keywords :** Automation, Lattice Structures, nTopCL, nTopology, Python

## AĞ SİMÜLASYON ARAÇLARININ KAPSAMLI BİR KARŞILAŞTIRMASI

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### ÖZET

Bilgisayar ağları günlük hayatımızda katlanarak büyümektedir ve yaygın bir kullanım alanına sahiptir. Ağ mühendislerine olan talep ise bu gelişmelere paralel olarak artış göstermektedir. Bilgisayar ağları uygulamalarında geliştirilen algoritmalar, protokoller, tasarımlar için uygun bir ağ simülasyon ortamı veya araçlarının öğrenilmesi ve kullanımı önem arz etmektedir. Her ağ aracının kendisine özgü özellikleri olmakta ve bunların genel olarak karşılaştırmalı sunumu faydalı bir çalışma olacaktır. Ağ protokollerinin kontrolü ve doğrulanması için kullanılan simülasyon araçları, ağ tasarımı ve analizi süreçlerini kolaylaştırmaya yardımcı olmaktadır. Ayrıca, ağ simülasyon araçları, yeni protokollerin test edilmesi ve mevcut protokollerin kontrollü bir şekilde değiştirilmesi için tasarımcılara olanak sağlamaktadır. Bu makale çalışmasında ağ simülasyon ve modelleme araçlarının temel özellikleri, avantajları ve dezavantajları açıklanarak karşılaştırmaları yapılmıştır. Yapılan çalışmanın sonunda genel karşılaştırma tablosu oluşturulmuş ve temel özellikler bakımından ağ simülatörlerinin artı ve eksi yönleri belirtilmiştir.

**Anahtar Kelimeler:** Ağ Simülatörleri, NS-2, NS-3, GNS-3, NetSim, MATLAB, Microsoft Visio, OPNET-Riverbed.

## A COMPREHENSIVE COMPARISON OF NETWORK SIMULATION TOOLS

### ABSTRACT

Computer networks are growing exponentially in our daily lives and are widely used. The demand for network engineers is increasing in parallel with these developments. It is important to learn and use a suitable network simulation environment or tools for algorithms, protocols and designs developed in computer network applications. Each network tool has its own characteristics, and a general comparative presentation of these will be a useful study. Simulation tools used to control and verify network protocols help facilitate network design and analysis processes. Additionally, network simulation tools enable designers to test new protocols and modify existing protocols in a controlled manner. In this article, the basic features, advantages and disadvantages of network simulation and modeling tools are explained and compared. At the end of the study, a general comparison table was created and the pros and cons of network simulators in terms of basic features were stated.

**Anahtar Kelimeler:** Network Simulators, NS-2, NS-3, GNS-3, NetSim, MATLAB, Microsoft Visio, OPNET-Riverbed.

## AYRIK OLAY SİMÜLASYON YAKLAŞIMLARININ KARŞILAŞTIRILMASI

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### ÖZET

Ayrık olay simülasyonu, gerçek dünya sistemlerini matematiksel modellerle analiz etmek ve taklit etmek amacıyla kullanılan etkili bir yöntemdir. Genellikle bilgisayar yazılımları aracılığıyla gerçekleştirilen bu simülasyonlar, bilgisayar ağları, endüstriyel uygulamalar, ulaşım sistemleri, sağlık hizmetleri gibi daha pek çok alanda kullanılmaktadır. Ayrık olay simülasyonları, gerçek dünya durumlarının matematiksel olarak modellemesini sağlar ve bu modeller aracılığıyla farklı stratejilerin, kararların ve değişikliklerin potansiyel sonuçlarını öngörmeye yardımcı olur. Böylece, maliyetleri azaltma, kaynakları daha etkin kullanma veya süreçlerin verimliliğini artırma gibi hedeflere yönelik çözümler geliştirilebilir. Herhangi bir simülasyonu gerçekleştirmek için genel kabul görmüş yöntemler vardır. Bilgisayar simülasyonlarının birçoğunda kullanılan ayrık olay yapılarında aktivite tarama, proses etkileşimi ve olay çizelgeleme yaklaşımları esas alınarak kodlama işlemleri gerçekleştirilmektedir. Her yaklaşımın kendisine özgü özellikleri ve durumları vardır. Yapılan çalışmada ayrık olay simülasyon yaklaşımlarının karşılaştırılması gerçekleştirilmiştir. Karşılaştırma genel bir çerçevede olması amacıyla genel amaçlı ve nesne yönelimli bir programlama dilinde gerçekleştirilmiştir. Bu yöntemlerin özelliklerinin bilinmesi ve değerlendirilmesi sonucunda yapılacak olan uygulamada tercih edilmesi sağlıklı bir yaklaşım olacaktır. Simülasyon yaklaşımlarının işlem hızları, kullandıkları bellek miktarı ile farklı işlemci ve RAM düzeylerindeki davranışları incelenmiştir. Bilgisayarda hazırlanan senaryo üzerinde ayrık olay simülasyon yaklaşımları çalıştırılmış ve sonuçlar her bir parametre için analiz edilmiştir.



**Anahtar Kelimeler:** Ayırık Olay Simülasyonu, Aktivite Tarama, Proses Etkileşimi, Olay Çizelgeleme

## COMPARISON OF DISCRETE EVENT SIMULATION APPROACHES

### ABSTRACT

Discrete event simulation is an effective method for analyzing and imitating real-world systems with mathematical models. These simulations, which are generally carried out through computer software, are used in many areas, such as computer networks, industrial applications, transportation systems, and healthcare services. Discrete event simulations are used to understand the operation of systems, optimize decision-making processes, increase efficiency, and reduce risks. Discrete event simulations provide mathematical modeling of real-world situations and help predict the potential consequences of different strategies, decisions, and changes through these models. Thus, solutions can be developed for goals such as reducing costs, using resources more effectively, or increasing the efficiency of processes. There are generally accepted methods for performing any simulation. Coding processes are carried out based on activity scanning, process interaction, and event scheduling approaches in discrete event structures used in most computer simulations. Each approach has its own characteristics and situations. The comparison was performed in a general-purpose and object-oriented programming language to provide a general framework. It would be a healthy approach to choose these methods in the application as a result of knowing and evaluating their features. The processing speeds of the simulation approaches, the amount of memory they use, and their behavior at different processor and RAM levels were examined. Discrete event simulation approaches were run on the scenario prepared on the computer and the results were analyzed for each parameter.

**Keywords:** Discrete Event Simulation, Activity Scanning, Process Interaction, Event Scheduling

## MERSİN İLİNİN MUT İLÇESİNDEKİ LİSE ÖĞRENCİLERİNİN REKREATİF AKTİVİTELERE KATILIM ZORLUKLARI

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### ÖZET

Araştırmamızda Mut ilçesinde öğrenim gören lise öğrencilerinin rekreatif faaliyetlere katılım zorluklarını belirlemek amacı ile yapılmıştır. Araştırmada kullanılan boş zaman engelleri ölçeğinin 18 maddeden ve 6 alt boyuttan oluşmaktadır. Türkçe'ye uyarlanmasını ise Gürbüz ve Karaküçük (2007) yapmıştır. Araştırmamızdaki katılımcıların demografik bilgilerinin normal dağılım gösterip göstermediklerini Kolmogorov Smirnov testi ile ikili olan karşılaştırmalar için Mann-Whitney U testi ve çoklu karşılaştırmalar için ise Kruskal Wallis varyans analizi yapılmıştır. Yapılan analizler SPSS 22 paket programı kullanılmıştır. Araştırmamızın sonucunda: Boş zaman engelleri ölçeğinin alt boyutları arasındaki farklılık incelediğimizde ölçeğimizin alt boyutları arasında pozitif yönde bir korelasyona bağlı olarak aralarında anlamlı bir farklılık olduğu tespit edilmiştir ( $p<0.05$ ). Katılımcıların yaşlarının boş zaman engelleri ölçeğinin alt boyutlarından bireysel psikoloji, bilgi eksikliği, tesis, zaman ve ilgi eksikliği alt boyutları ile aralarında herhangi bir anlamlı farklılık bulunmadığı sadece arkadaş eksikliği alt boyutu ile yaş değişeni arasında pozitif yönde bir ilişkinin olduğu tespit edilmiştir ( $p<0.05$ ).

**Anahtar Kelimeler:** Rekreasyon, Aktivite, Lise.

## PARTICIPATION DIFFICULTIES OF HIGH SCHOOL STUDENTS IN RECREATIONAL ACTIVITIES IN MUT DISTRICT OF MERSİN PROVINCE

### ABSTRACT

In our research, it was aimed to determine the difficulties of high school students studying in Mut district to participate in recreational activities. The leisure time barriers scale used in the study consists of 18 items and 6 sub-dimensions. Its adaptation to Turkish was done by Gürbüz

and Karaküçük (2007). Kolmogorov Smirnov test, Mann-Whitney U test for pairwise comparisons and Kruskal Wallis analysis of variance for multiple comparisons were used to determine whether the demographic information of the participants in our study showed normal distribution. SPSS 22 package program was used for the analysis. Results of our research: When we examined the difference between the sub-dimensions of the leisure time barriers scale, it was determined that there was a significant difference between the sub-dimensions of our scale due to a positive correlation ( $p<0.05$ ). It was determined that there was no significant difference between the age of the participants and the sub-dimensions of the leisure time barriers scale such as individual psychology, lack of information, lack of facilities, lack of time and lack of interest, but there was a positive correlation between the lack of friends sub-dimension and the age variable ( $p<0.05$ ).

**Keywords:** Keywords: Recreation, Activity, High School.

## **An Empirical Mode Decomposition Based Method for Action Potential Detection in Neural Raw Data**

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### **Abstract:**

Information in the nervous system is coded as firing patterns of electrical signals called action potential or spike so an essential step in analysis of neural mechanism is detection of action potentials embedded in the neural data. There are several methods proposed in the literature for such a purpose. In this paper a novel method based on empirical mode decomposition (EMD) has been developed. EMD is a decomposition method that extracts oscillations with different frequency range in a waveform. The method is adaptive and no a-priori knowledge about data or parameter adjusting is needed in it. The results for simulated data indicate that proposed method is comparable with wavelet based methods for spike detection. For neural signals with signal-to-noise ratio near 3 proposed methods is capable to detect more than 95% of action potentials accurately.

**Keywords:** EMD, neural data processing, spike detection, wavelet decomposition

## **The Origin, Diffusion and a Comparison of Ordinary Differential Equations Numerical Solutions Used by SIR Model in Order to Predict SARS-CoV-2 in Nordic Countries**

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### **Abstract:**

SARS-CoV-2 virus is currently one of the most infectious pathogens for humans. It started in China at the end of 2019 and now it is spread in all over the world. The origin and diffusion of the SARS-CoV-2 epidemic, is analysed based on the discussion of viral phylogeny theory. With the aim of understanding the spread of infection in the affected countries, it is crucial to modelize the spread of the virus and simulate its activity. In this paper, the prediction of coronavirus outbreak is done by using SIR model without vital dynamics, applying different numerical technique solving ordinary differential equations (ODEs). We find out that ABM and MRT methods perform better than other techniques and that the activity of the virus will decrease in April but it never cease (for some time the activity will remain low) and the next cycle will start in the middle July 2020 for Norway and Denmark, and October 2020 for Sweden, and September for Finland.

**Keywords:** Forecasting, ordinary differential equations, SARS-CoV-2 epidemic, SIR model

## Tuberculosis Modelling Using Bio-PEPA Approach

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### Abstract:

Modelling is a widely used tool to facilitate the evaluation of disease management. The interest of epidemiological models lies in their ability to explore hypothetical scenarios and provide decision makers with evidence to anticipate the consequences of disease incursion and impact of intervention strategies.

All models are, by nature, simplification of more complex systems. Models that involve diseases can be classified into different categories depending on how they treat the variability, time, space, and structure of the population. Approaches may be different from simple deterministic mathematical models, to complex stochastic simulations spatially explicit.

Thus, epidemiological modelling is now a necessity for epidemiological investigations, surveillance, testing hypotheses and generating follow-up activities necessary to perform complete and appropriate analysis.

The state of the art presented in the following, allows us to position itself to the most appropriate approaches in the epidemiological study.

**Keywords:** Bio-PEPA, Cellular automata, Epidemiological modelling, multi agent system, ordinary differential equations, PEPA, Process Algebra, Tuberculosis.

## Possible Role of Polyamine on Tumor Spread after Surgical Trauma

Kuniyasu Soda

### Abstract:

Surgical trauma seems to facilitate metastatic spread, although the underlying mechanisms are not known. Increased concentrations of polyamines (spermine and spermidine) in the blood seem to have associated with the enhanced malignant potential of cancer cells and decrease in anti-tumor immunity of cancer patients. In addition to de novo synthesis in rapidly growing cells such as normal regenerating cells and cancer cells, cells can take up polyamines from extra-cellular sources. We have shown that increased polyamine concentration results in decreases in cytokine production and expression of adhesion molecules involved in anti-tumor immunity, such as CD11a. And, immune cells in an environment with increased polyamine levels lose anti-tumor immune functions, such as lymphokine activated killer cell (LAK) activities. Because blood polyamine levels are increased in post-surgical patients, polyamine seems to have roles on post-traumatic tumor spread.

**Keywords:** Immune function, LAK, Polyamine, Surgical trauma

## **Identifying Teachers' Perception of Integrity in School-Based Assessment Practice: A Case Study**

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### **Abstract:**

This case study aims to identify teachers' perception as regards integrity in School-Based Assessment (PBS) practice. This descriptive study involved 9 teachers from 4 secondary schools in 3 districts in the state of Perak. The respondents had undergone an integrity in PBS Practice interview using a focused group discussion method. The overall findings showed that the teachers believed that integrity in PBS practice could be achieved by adjusting the teaching methods align with learning objectives and the students' characteristics. Many teachers, parents and student did not understand the best practice of PBS. This would affect the integrity in PBS practice. Teachers did not emphasis the principles and ethics. Their integrity as an innovative public servant may also be affected with the frequently changing assessment system, lack of training and no prior action research. The analysis of findings showed that the teachers viewed that organizational integrity involving the integrity of PBS was difficult to be implemented based on the expectations determined by Malaysia Ministry of Education (KPM). A few elements which assisted in the achievement of PBS integrity were the training, students' understanding, the parents' understanding of PBS, environment (involving human resources such as support and appreciation and non-human resources such as technology infrastructure readiness and media). The implications of this study show that teachers, as the PBS implementers, have a strong influence on the integrity of PBS. However, the transformation of behavior involving PBS integrity among teachers requires the stabilisation of support and infrastructure in order to enable the teachers to implement PBS in an ethical manner.

**Keywords:** Assessment integrity, integrity, perception, school-based assessment.



## Effect of T6 and Re-Aging Heat Treatment on Mechanical Properties of 7055 Aluminum Alloy

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### Abstract:

Heat treatable aluminum alloys such as 7075 and 7055, because of high strength and low density, are used widely in aircraft industry. For best mechanical properties, T6 heat treatment has recommended for this regards, but this temper treatment is sensitive to corrosion induced and Stress Corrosion Cracking (SCC) damage. For improving this property, the over-aging treatment (T7) applies to this alloy, but it decreases the mechanical properties up to 30 percent. Hence, to increase the mechanical properties, without any remarkable decrease in SCC resistant, Retrogression and Re-Aging (RRA) heat treatment is used. This treatment performs in a relatively short time. In this paper, the RRA heat treatment was applied to 7055 aluminum alloy and then effect of RRA time on the mechanical properties of 7055 has been investigated. The results show that the 40-minute time is suitable time for retrogression of 7055 aluminum alloy and ultimate strength increases up to 625MPa.

**Keywords:** 7055 Aluminum alloy, Mechanical properties, SCC resistance, Heat Treatment.

## **Determination of Material Properties for Biodegradable Polylactic Acid Plastic Used in 3D Printers**

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Republik

### **Abstract:**

Within Rapid Prototyping technologies are used many types of materials. Many of them are recyclable but there are still as plastic like, so practically they do not degrade in the landfill. Polylactic acid (PLA) is one of the special plastic materials, which are biodegradable and available for 3D printing within Fused Deposition Modeling (FDM) technology. The question is, if the mechanical properties of produced models are comparable to similar technical plastic materials which are usual for prototype production. Presented paper shows the experiments results for tensile strength measurements for specimens prepared with different 3D printer settings and model orientation. Paper contains also the comparison of tensile strength values with values measured on specimens produced by conventional technologies as injection moulding.

**Keywords:** 3D printing, biodegradable plastic, fused deposition modeling, PLA plastic, rapid prototyping.

## **Research of Concentratibility of Low Quality Bauxite Raw Materials**

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### **Abstract:**

Processing of high-silicon bauxite on the base of the traditional clinkering method is related to high power consumption and capital investments, which makes production of alumina from those ores non-competitive in terms of basic economic showings. For these reasons, development of technological solutions enabling to process bauxites with various chemical and mineralogical structures efficiently with low level of thermal power consumption is important. Flow sheet of the studies on washability of ores from the Timanskoe and the Severo-Onezhskoe deposits is on the base of the flotation method.

### **Keywords:**

Low-quality bauxite, resource-saving technology, optimization, aluminum, conditioning of composition, separation characteristics.

## The Effect of Molybdate on Corrosion Behaviour of AISI 316Ti Stainless Steel in Chloride Environment

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### Abstract:

The effect of molybdate addition to chloride environment on resistance of AISI 316Ti stainless steel to pitting corrosion was studied. Potentiodynamic polarisation tests were performed in 1 M and 0.1 M chloride acidified solutions with various additions of sodium molybdate at room temperature. The presented results compare the effect of molybdate anions on quality of passive film (expressed by the pitting potential) in both chloride solutions. The pitting potential increases with the increase inhibitor concentration. The inhibitive effect of molybdate ions is stronger in chloride solution of lower aggressiveness (0.1M).

**Keywords:** AISI 316Ti steel, molybdate inhibitor, pitting corrosion, pitting potential, potentiodynamic polarization.

## Effect of UV Radiation to Change the Properties of the Composite PA+GF

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### Abstract:

The development of composite materials and the related design and manufacturing technologies is one of the most important advances in the history of materials. Composites are multifunctional materials having unprecedented mechanical and physical properties that can be tailored to meet the requirements of a particular application. Some composites also exhibit great resistance to high-temperature corrosion, oxidation, and wear. Polymers are widely used indoors and outdoors, therefore they are exposed to a chemical environment which may include atmospheric oxygen, acidic fumes, acidic rain, moisture heat and thermal shock, ultra-violet light, high energy radiation, etc. Different polymers are affected differently by these factors even though the amorphous polymers are more sensitive. Ageing is also important and it is defined as the process of deterioration of engineering materials resulting from the combined effects of atmospheric radiation, heat, oxygen, water, microorganisms and other atmospheric factors.

**Keywords:** Composites with glass fibres, mechanical properties, polyamides, UV degradation.

## Surface Activation of Carbon Nanotubes Generating a Chemical Interaction in Epoxy Nanocomposite

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### Abstract:

Carbon nanotubes (CNTs) are known for having high elastic properties with high surface area that promote them as good candidates for reinforcing polymeric matrices. In composite materials, CNTs lack chemical bonding with the surrounding matrix which decreases the possibility of better stress transfer between the components. In this work, a chemical treatment for activating the surface of the multi-wall carbon nanotubes (MWCNT) was applied and the effect of this functionalization on the elastic properties of the epoxy nanocomposites was studied. Functional amino-groups were added to the surface of the CNTs and it was evaluated to be about 34% of the total weight of the CNTs. Elastic modulus was found to increase by about 40% of the neat epoxy resin at CNTs' weight fraction of 0.5%. The elastic modulus was found to decrease after reaching a certain concentration of CNTs which was found to be 1% wt. The scanning electron microscopic pictures showed the effect of the CNTs on the crack propagation through the sample by forming stress concentrated spots at the nanocomposite samples.

**Keywords:** Carbon nanotubes functionalization, crack propagation, elastic modulus, epoxy nanocomposites.

## **Aging Effect on Mechanical Behavior of Duplex Stainless Steel**

Jungho Moon, Tae Kwon Ha

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### **Abstract:**

Effect of alloying on the microstructure and mechanical properties of heat-resisting duplex stainless steel (DSS) for Mg production was investigated in this study. 25Cr-8Ni based DSS's were cast into rectangular ingots of which the dimension was 350×350×100 mm<sup>3</sup>. Nitrogen and Yttrium were added in the range within 0.3 in weight percent. Phase equilibrium was calculated using the FactSage®, thermodynamic software. Hot exposure, high temperature tensile and compression tests were conducted on the ingots at 1230oC, which is operation temperature employed for Mg production by Silico-thermic reduction. The steel with N and Y showed much higher strength than 310S alloy in both tensile and compression tests. By thermal exposition at 1230oC for 200 hrs, hardness of DSS containing N and Y was found to increase. Hot workability of the heat-resisting DSS was evaluated by employing hot rolling at 1230 oC. Hot shortness was observed in the ingot with N and found to disappear after addition of Y.

**Keywords:** Duplex Stainless Steel, alloying elements, eutectic carbides, microstructure, aging treatment.

## **Precious and Rare Metals in Overburden Carbonaceous Rocks: Methods of Extraction**

Tatyana Alexandrova, Alexandr Alexandrov, Nadezhda Nikolaeva

### **Abstract:**

A problem of complex mineral resources development is urgent and priority, it is aimed at realization of the processes of their ecologically safe development, one of its components is revealing the influence of the forms of element compounds in raw materials and in the processing products. In view of depletion of the precious metal reserves at the traditional deposits in the XXI century the large-size open cast deposits, localized in black shale strata begin to play the leading role. Carbonaceous (black) shales carry a heightened metallogenic potential. Black shales with high content of carbon are widely distributed within the scope of Bureinsky massif. According to academician Hanchuk`s data black shales of Sutirskaya series contain generally PGEs native form. The presence of high absorptive towards carbonaceous matter gold and PGEs compounds in crude ore results in decrease of valuable components extraction because of their sorption into dissipated carbonaceous matter.

**Keywords:** Carbonaceous rocks, bitumens, precious metals, concentration, extraction.



## **Dry Relaxation Shrinkage Prediction of Bordeaux Fiber Using a Feed Forward Neural**

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Yuriria, Gto. México

### **Abstract:**

The knitted fabric suffers a deformation in its dimensions due to stretching and tension factors, transverse and longitudinal respectively, during the process in rectilinear knitting machines so it performs a dry relaxation shrinkage procedure and thermal action of prefixed to obtain stable conditions in the knitting. This paper presents a dry relaxation shrinkage prediction of Bordeaux fiber using a feed forward neural network and linear regression models. Six operational alternatives of shrinkage were predicted. A comparison of the results was performed finding neural network models with higher levels of explanation of the variability and prediction. The presence of different reposes is included. The models were obtained through a neural toolbox of Matlab and Minitab software with real data in a knitting company of Southern Guanajuato. The results allow predicting dry relaxation shrinkage of each alternative operation.

**Keywords:** Neural network, dry relaxation, knitting, linear regression.

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## **The Experimental and Numerical Analysis of Trip Steel Wire Drawing Processes Drawn with Different Partial Reductions**

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Technology, Al. Armii Krajowej 19, 42-200 Czestochowa, Poland

### **Abstract:**

The strain intensity and redundant strains, dependent in multistage TRIP wire drawing processes from values used single partial reductions, should influence on the intensity of transformation the retained austenite into martensite and thereby on mechanical properties of drawn wires. The numerical analysis of drawing processes with use of Drawing 2D programme, for steel wires made from TRIP steel with 0,29% has been shown in the work. The change of strain intensity  $\varepsilon_c$  and the values of redundant strain  $\varepsilon_{xy}$ , has been determined for particular draws in dependence of used single partial reductions.

**Keywords:** Steel wire, TRIP steel, drawing processes, fem modelling.

## Prediction of Solidification Behavior of Al Alloy in a Cube Mold Cavity

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### Abstract:

This paper focuses on the mathematical modeling for solidification of Al alloy in a cube mold cavity to study the solidification behavior of casting process. The parametric investigation of solidification process inside the cavity was performed by using computational solidification/melting model coupled with Volume of fluid (VOF) model. The implicit filling algorithm is used in this study to understand the overall process from the filling stage to solidification in a model metal casting process. The model is validated with past studied at same conditions. The solidification process is analyzed by including the effect of pouring velocity as well as natural convection from the wall and geometry of the cavity. These studies show the possibility of various defects during solidification process.

**Keywords:** Buoyancy driven flow, natural convection driven flow, residual flow, secondary flow, volume of fluid.

## **Influence of High Temperature and Humidity on Polymer Composites Used in Relining of Sewage**

Parastou Kharazmi, Folke Björk

### **Abstract:**

Some of the main causes for degradation of polymeric materials are thermal aging, hydrolysis, oxidation or chemical degradation by acids, alkalis or water. The first part of this paper provides a brief summary of advances in technology, methods and specification of composite materials for relining as a rehabilitation technique for sewage systems. The second part summarizes an investigation on frequently used composite materials for relining in Sweden, the rubber filled epoxy composite and reinforced polyester composite when they were immersed in deionized water or in dry conditions, and elevated temperatures up to 80°C in the laboratory. The tests were conducted by visual inspection, microscopy, Dynamic Mechanical Analysis (DMA), Differential Scanning Calorimetry (DSC) as well as mechanical testing, three point bending and tensile testing.

**Keywords:** Composite, epoxy, polyester, relining, sewage.

## **Anticorrosive Polyurethane Clear Coat with Self-Cleaning Character**

**Nihit Madireddi, P. A. Mahanwar**

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P. A. Mahanwar is Professor in Department of Polymer and Surface Engineering, Institute of Chemical Technology, Mumbai, India

### **Abstract:**

We have aimed to produce a self-cleaning transparent polymer coating with polyurethane (PU) matrix as the latter is highly solvent, chemical and weather resistant having good mechanical properties. Nano-silica modified by 1H, 1H, 2H, 2Hperfluorooctyltriethoxysilane was incorporated into the PU matrix for attaining self-cleaning ability through hydrophobicity. The modification was confirmed by particle size analysis and scanning electron microscopy (SEM). Thermo-gravimetric (TGA) studies were carried to ascertain the grafting of silane onto the silica. Several coating formulations were prepared by varying the silica loading content and compared to a commercial equivalent. The effect of dispersion and the morphology of the coated films were assessed by SEM analysis. All coating standardized tests like solvent resistance, adhesion, flexibility, acid, alkali, gloss etc. have been performed as per ASTM standards. Water contact angle studies were conducted to analyze the hydrophobic character of the coating. In addition, the coatings were also subjected to salt spray and accelerated weather testing to analyze the durability of the coating.

**Keywords:** FAS, nano-silica, PU clear coat, self-cleaning.

## Effects of Coupling Agent on the Properties of Durian Skin Fibre Filled Polypropylene Composite

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### Abstract:

Durian skin is a newly explores natural fibre potentially reinforced polyolefin for diverse applications. In this work, investigation on the effect of coupling agent, maleic anhydride polypropylene (MAPP) on the mechanical, morphological, and thermal properties of polypropylene (PP) reinforced with durian skin fibre (DSF) was conducted. The presence of 30 wt% DSF significantly reduced the tensile strength of PP-DSF composite. Interestingly, even though the same trend goes to PP-DSF with the presence of MAPP, the reduction is only about 4% relative to unreinforced PP and 18% higher than PP-DSF without MAPP (untreated composite or UTC). The used of MAPP in treated composite (TC) also increased the tensile modulus, flexural properties and degradation temperature. The enhanced mechanical properties are consistent with good interfacial interaction as evidenced under scanning electron microscopy.

**Keywords:** Durian skin fiber, coupling agent, mechanical properties, thermogravimetry analysis.

## **Response Surface Methodology for Optimum Hardness of TiN on Steel Substrate**

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### **Abstract:**

Hard coatings are widely used in cutting and forming tool industries. Titanium Nitride (TiN) possesses good hardness, strength, and corrosion resistance. The coating properties are influenced by many process parameters. The coatings were deposited on steel substrate by changing the process parameters such as substrate temperature, nitrogen flow rate and target power in a D.C planer magnetron sputtering. The structure of coatings were analysed using XRD. The hardness of coatings was found using Micro hardness tester. From the experimental data, a regression model was developed and the optimum response was determined using Response Surface Methodology (RSM).

**Keywords:** Hardness, RSM, sputtering, TiN XRD.

## The Effects and Interactions of Synthesis Parameters on Properties of Mg Substituted Hydroxyapatite

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PEC University of Technology, India

### Abstract:

In this study, the effects and interactions of reaction time and capping agent assistance during sol-gel synthesis of magnesium substituted hydroxyapatite nanopowder (MgHA) on hydroxyapatite (HA) to  $\beta$ -tricalcium phosphate ( $\beta$ -TCP) ratio, Ca/P ratio and mean crystallite size was examined experimentally as well as through statistical analysis. MgHA nanopowders were synthesized by sol-gel technique at room temperature using aqueous solution of calcium nitrate tetrahydrate, magnesium nitrate hexahydrate and potassium dihydrogen phosphate as starting materials. The reaction time for sol-gel synthesis was varied between 15 to 60 minutes. Two process routes were followed with and without addition of triethanolamine (TEA) in the solutions. The elemental compositions of as-synthesized powders were determined using X-ray fluorescence (XRF) spectroscopy. The functional groups present in the as-synthesized MgHA nanopowders were established through Fourier Transform Infrared Spectroscopy (FTIR). The amounts of phases present, Ca/P ratio and mean crystallite sizes of MgHA nanopowders were determined using X-ray diffraction (XRD). The HA content in biphasic mixture of HA and  $\beta$ -TCP and Ca/P ratio in as-synthesized MgHA nanopowders increased effectively with reaction time of sols ( $p < 0.0001$ , two way ANOVA), however, these were independent of TEA addition ( $p > 0.15$ , two way ANOVA). The MgHA nanopowders synthesized with TEA assistance exhibited 14 nm lower crystallite size ( $p < 0.018$ , 2 sample t-test) compared to the powder synthesized without TEA assistance.

**Keywords:** Capping agent, hydroxyapatite, regression analysis, sol-gel, 2- sample t-test, two-way ANOVA.



## **Experimental Investigation on Mechanical Properties of Rice Husk Filled Jute Reinforced Composites**

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### **Abstract:**

This paper describes the development of new class of epoxy based rice husk filled jute reinforced composites. Rice husk flour is added in 0%, 1%, 3%, 5% by weight. Epoxy resin and triethylenetetramine (T.E.T.A) is used as matrix and hardener respectively. It investigates the mechanical properties of the composites and a comparison is done for monolithic jute composite and the filled ones. The specimens are prepared according to the ASTM standards and experimentation is carried out using INSTRON 8801. The result shows that with the increase of filler percentage the tensile properties increases but compressive and flexural properties decreases.

**Keywords:** Jute, mechanical characterization, natural fiber, rice husk.

## Satellite Rainfall Prediction Techniques - A State of the Art Review

S. Sarumathi, N. Shanthi, S. Vidhya

### Abstract:

In the present world, predicting rainfall is considered to be an essential and also a challenging task. Normally, the climate and rainfall are presumed to have non-linear as well as intricate phenomena. For predicting accurate rainfall, we necessitate advanced computer modeling and simulation. When there is an enhanced understanding of the spatial and temporal distribution of precipitation then it becomes enrichment to applications such as hydrologic, climatic and ecological. Conversely, there may be some kind of challenges occur in the community due to some application which results in the absence of consistent precipitation observation in remote and also emerging region. This survey paper provides a multifarious collection of methodologies which are epitomized by various researchers for predicting the rainfall. It also gives information about some technique to forecast rainfall, which is appropriate to all methods like numerical, traditional and statistical.

**Keywords:** Satellite Image, Segmentation, Feature Extraction, Classification, Clustering, Precipitation Estimation.

## Material Parameter Identification of Modified AbdelKarim-Ohno Model

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### Abstract:

The key role in phenomenological modelling of cyclic plasticity is good understanding of stress-strain behaviour of given material. There are many models describing behaviour of materials using numerous parameters and constants. Combination of individual parameters in those material models significantly determines whether observed and predicted results are in compliance. Parameter identification techniques such as random gradient, genetic algorithm and sensitivity analysis are used for identification of parameters using numerical modelling and simulation. In this paper genetic algorithm and sensitivity analysis are used to study effect of 4 parameters of modified AbdelKarim-Ohno cyclic plasticity model. Results predicted by Finite Element (FE) simulation are compared with experimental data from biaxial ratcheting test with semi-elliptical loading path.

**Keywords:** Genetic algorithm, sensitivity analysis, inverse approach, finite element method, cyclic plasticity, ratcheting.

## “Friction Surfaces” of Airport Emergency Plan

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### **Abstract:**

This article focuses on the issue of airport emergency plans, which are documents describing reactions to events with impact on aviation safety or aviation security. The article specifically focuses on the use and creation of emergency plans, where could be found a number of disagreements between different stakeholders, for which the airport emergency plan applies. Those are the friction surfaces of interfaces, which is necessary to identify and ensure them smooth process to avoid dangerous situations or delay.

**Keywords:** Airport emergency plan, aviation safety, aviation security, comprehensive management system, friction surfaces of airport emergency plan, interfaces of processes.

## **Parametric Investigation of Aircraft Door's Emergency Power Assist System (EPAS)**

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### **Abstract:**

Fluid viscous damping systems are well suited for many air vehicles subjected to shock and vibration. These damping system work with the principle of viscous fluid throttling through the orifice to create huge pressure difference between compression and rebound chamber and obtain the required damping force. One application of such systems is its use in aircraft door system to counteract the door's velocity and safely stop it. In exigency situations like crash or emergency landing where the door doesn't open easily, possibly due to unusually tilting of fuselage or some obstacles or intrusion of debris obstruction to move the parts of the door, such system can be combined with other systems to provide needed force to forcefully open the door and also securely stop it simultaneously within the required time i.e. less than 8 seconds. In the present study, a hydraulic system called snubber along with other systems like actuator, gas bottle assembly which together known as emergency power assist system (EPAS) is designed, built and experimentally studied to check the magnitude of angular velocity, damping force and time required to effectively open the door. Whenever needed, the gas pressure from the bottle is released to actuate the actuator and at the same time pull the snubber's piston to operate the emergency opening of the door. Such EPAS installed in the suspension arm of the aircraft door is studied explicitly changing parameters like orifice size, oil level, oil viscosity and bypass valve gap and its spring of the snubber at varying temperature to generate the optimum design case. Comparative analysis of the EPAS at several cases is done and conclusions are made. It is found that during emergency condition, the system opening time and angular velocity, when snubber with 0.3mm piston and shaft orifice and bypass valve gap of 0.5 mm with its original spring is used, shows significant improvement over the old ones.

**Keywords:** Aircraft Door Damper, Bypass Valve, Emergency Power Assist System, Hydraulic Damper, Oil viscosity.

## Acoustic Behavior of Polymer Foam Composite of Shorea leprosula after UV-Irradiation Exposure

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### Abstract:

This study was developed to compare the behavior and the ability of polymer foam composites towards sound absorption test of Shorea leprosula wood (SL) of acid hydrolysis treatment with particle size  $<355\mu\text{m}$ . Three different weight ratio of polyol to wood particle has been selected which are 10wt%, 15wt% and 20wt%. The acid hydrolysis treatment is to optimize the surface interaction of wood particle with polymer foam matrix. In addition, the acoustic characteristic of sound absorption coefficient ( $\alpha$ ) was determined. Further treatment is to expose the polymer composite in UV irradiation by using UV-Weatherometer. Polymer foam composite of untreated Shorea leprosula particle (SL-B) with respective percentage loading shows uniform pore structure as compared with treated wood particle (SL-A). As the filler percentage loading in polymer foam increases, the  $\alpha$  value approaching 1 for both samples. Furthermore, SL-A shows better  $\alpha$  value at 3500-4500 frequency absorption level (Hz), meanwhile  $\alpha$  value for SL-B is maximum at 4000-5000 Hz. The frequencies absorption level for both SL-B and SL-A after UV exposure was increased with the increasing of exposure time from 0-1000 hours. It is therefore, concluded that the  $\alpha$  for each sound absorbing material, with or without acid hydrolysis treatment of wood particles and it's percentages loading in polymer matrix effect the sound absorption behavior.

**Keywords:** Polymer foam composite, sound absorption coefficient, UV-irradiation, wood.

## Modeling and Simulation of Axial Fan Using CFD

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### Abstract:

Axial flow fans, while incapable of developing high pressures, they are well suitable for handling large volumes of air at relatively low pressures. In general, they are low in cost and possess good efficiency, and can have blades of airfoil shape. Axial flow fans show good efficiencies, and can operate at high static pressures if such operation is necessary. Our objective is to model and analyze the flow through AXIAL FANS using CFD Software and draw inference from the obtained results, so as to get maximum efficiency. The performance of an axial fan was simulated using CFD and the effect of variation of different parameters such as the blade number, noise level, velocity, temperature and pressure distribution on the blade surface was studied. This paper aims to present a final 3D CAD model of axial flow fan. Adapting this model to the available components in the market, the first optimization was done. After this step, CFX flow solver is used to do the necessary numerical analyses on the aerodynamic performance of this model. This analysis results in a final optimization of the proposed 3D model which is presented in this article.

**Keywords:** ANSYS CFX, Axial Fan, Computational Fluid Dynamics (CFD), Optimization.

## A Modified Decoupled Semi-Analytical Approach Based On SBFEM for Solving 2D Elastodynamic Problems

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Semnan University, Semnan, Iran

### Abstract:

In this paper, a new trend for improvement in semianalytical method based on scale boundaries in order to solve the 2D elastodynamic problems is provided. In this regard, only the boundaries of the problem domain discretization are by specific subparametric elements. Mapping functions are used as a class of higher order Lagrange polynomials, special shape functions, Gauss-Lobatto-Legendre numerical integration, and the integral form of the weighted residual method, the matrix is diagonal coefficients in the equations of elastodynamic issues. Differences between study conducted and prior research in this paper is in geometry production procedure of the interpolation function and integration of the different is selected. Validity and accuracy of the present method are fully demonstrated through two benchmark problems which are successfully modeled using a few numbers of DOFs. The numerical results agree very well with the analytical solutions and the results from other numerical methods.

**Keywords:** 2D Elastodynamic Problems, Lagrange Polynomials, G-L-Lquadrature, Decoupled SBFEM.



## Numerical Investigation of Nanofluid Based Thermosyphon System

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### Abstract:

A thermosyphon system is a heat transfer loop which operates on the basis of gravity and buoyancy forces. It guarantees a good reliability and low maintenance cost as it does not involve any mechanical pump. Therefore, it can be used in many industrial applications such as refrigeration and air conditioning, electronic cooling, nuclear reactors, geothermal heat extraction, etc. But flow instabilities and loop configuration are the major problems in this system. Several previous researchers studied that stabilities can be suppressed by using nanofluids as loop fluid. In the present study a rectangular thermosyphon loop with end heat exchangers are considered for the study. This configuration is more appropriate for many practical applications such as solar water heater, geothermal heat extraction, etc. In the present work, steady-state analysis is carried out on thermosyphon loop with parallel flow coaxial heat exchangers at heat source and heat sink. In this loop nanofluid is considered as the loop fluid and water is considered as the external fluid in both hot and cold heat exchangers. For this analysis onedimensional homogeneous model is developed. In this model, conservation equations like conservation of mass, momentum, energy are discretized using finite difference method. A computer code is written in MATLAB to simulate the flow in thermosyphon loop. A comparison in terms of heat transfer is made between water and nanofluid as working fluids in the loop.

**Keywords:** Heat exchanger, Heat transfer, Nanofluid, Thermosyphon loop.

## **Prediction of Scour Profile Caused by Submerged Three-Dimensional Wall Jets**

Abdullah Al Faruque, Ram Balachandar

### **Abstract:**

Series of laboratory tests were carried out to study the extent of scour caused by a three-dimensional wall jets exiting from a square cross-section nozzle and into a non-cohesive sand beds. Previous observations have indicated that the effect of the tail water depth was significant for densimetric Froude number greater than ten. However, the present results indicate that the cut off value could be lower depending on the value of grain size-to-nozzle width ratio. Numbers of equations are drawn out for a better scaling of numerous scour parameters. Also suggested the empirical prediction of scour to predict the scour centre line profile and plan view of scour profile at any particular time.

**Keywords:** Densimetric Froude Number, Jets, Nozzle, Sand, Scour, Tailwater, Time.

## Numerical Investigation of the Effect of Number of Waves on Heat Transfer in a Wavy Wall Enclosure

Ali Reza Tahavvor, Saeed Hosseini, Afshin Karimzadeh Fard

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### Abstract:

In this paper the effect of wall waviness of side walls in a two-dimensional wavy enclosure is numerically investigated. Two vertical wavy walls and straight top wall are kept isothermal and the bottom wall temperature is higher and spatially varying with cosinusoidal temperature distribution. A computational code based on Finite-volume approach is used to solve governing equations and SIMPLE method is used for pressure velocity coupling. Test is performed for several different numbers of undulations. The Prandtl number was kept constant and the Ra number denotes that the flow is laminar. Temperature and velocity fields are determined. Therefore, according to the obtained results a correlation is proposed for average Nusselt number as a function of number of side wall waves. The results indicate that the Nusselt number is highly affected by number of waves and increasing it decreases the wavy walls Nusselt number; although the Nusselt number is not highly affected by surface waviness when the number of undulations is below one.

**Keywords:** Cavity, natural convection, Nusselt number, wavy wall.

## Correlational Analysis between Brain Dominances and Multiple Intelligences

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Teaching Learning Centre, Indian Institute of Technology Madras, Chennai, India

### Abstract:

Aim of this research study is to investigate and establish the characteristics of brain dominances (BD) and multiple intelligences (MI). This experimentation has been conducted for the sample size of 552 undergraduate computer-engineering students. In addition, mathematical formulation has been established to exhibit the relation between thinking and intelligence, and its correlation has been analyzed. Correlation analysis has been statistically measured using Pearson's coefficient. Analysis of the results proves that there is a strong relational existence between thinking and intelligence. This research is carried to improve the didactic methods in engineering learning and also to improve e-learning strategies.

**Keywords:** Thinking style assessment, correlational analysis, mathematical model, data analysis, dynamic equilibrium.

## **Awareness of Students and Teachers towards AIDS and AIDS Education**

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### **Abstract:**

600 school-going adolescents and 100 teachers from 16 schools of Dhemaji and Lakhimpur district of Assam, India were surveyed to assess and compare their awareness regarding AIDS and AIDS Education. An awareness test was administered containing 38 items for adolescents and 40 items for teachers in the test. Observations revealed that the majority of school-going adolescents are poor in their HIV/AIDS and AIDS education awareness. It shows that the school-going adolescents of Dhemaji district are better in HIV/AIDS and AIDS education awareness than the school-going adolescents of Lakhimpur district while comparing the gender, settlement, stream and district wise variables.

**Keywords:** Awareness, HIV, AIDS, AIDS education.

## **Application of Single Subject Experimental Designs in Adapted Physical Activity Research: A Descriptive Analysis**

Jiabei Zhang, Ying Qi

Western Michigan University, Kalamazoo, Michigan, USA

### **Abstract:**

The purpose of this study was to develop a descriptive profile of the adapted physical activity research using single subject experimental designs. All research articles using single subject experimental designs published in the journal of Adapted Physical Activity Quarterly from 1984 to 2013 were employed as the data source. Each of the articles was coded in a subcategory of seven categories: (a) the size of sample; (b) the age of participants; (c) the type of disabilities; (d) the type of data analysis; (e) the type of designs, (f) the independent variable, and (g) the dependent variable. Frequencies, percentages, and trend inspection were used to analyze the data and develop a profile. The profile developed characterizes a small portion of research articles used single subject designs, in which most researchers used a small sample size, recruited children as subjects, emphasized learning and behavior impairments, selected visual inspection with descriptive statistics, preferred a multiple baseline design, focused on effects of therapy, inclusion, and strategy, and measured desired behaviors more often, with a decreasing trend over years.

**Keywords:** Adapted physical activity research, single subject experimental designs.

## The Classification Performance in Parametric and Nonparametric Discriminant Analysis for a Class- Unbalanced Data of Diabetes Risk Groups

Lily Ingrisawang, Tasanee Nacharoen

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### Abstract:

The problems arising from unbalanced data sets generally appear in real world applications. Due to unequal class distribution, many researchers have found that the performance of existing classifiers tends to be biased towards the majority class. The k-nearest neighbors' nonparametric discriminant analysis is a method that was proposed for classifying unbalanced classes with good performance. In this study, the methods of discriminant analysis are of interest in investigating misclassification error rates for classimbalanced data of three diabetes risk groups. The purpose of this study was to compare the classification performance between parametric discriminant analysis and nonparametric discriminant analysis in a three-class classification of class-imbalanced data of diabetes risk groups. Data from a project maintaining healthy conditions for 599 employees of a government hospital in Bangkok were obtained for the classification problem. The employees were divided into three diabetes risk groups: non-risk (90%), risk (5%), and diabetic (5%). The original data including the variables of diabetes risk group, age, gender, blood glucose, and BMI were analyzed and bootstrapped for 50 and 100 samples, 599 observations per sample, for additional estimation of the misclassification error rate. Each data set was explored for the departure of multivariate normality and the equality of covariance matrices of the three risk groups. Both the original data and the bootstrap samples showed nonnormality and unequal covariance matrices. The parametric linear discriminant function, quadratic discriminant function, and the nonparametric k-nearest neighbors' discriminant function were performed over 50 and 100 bootstrap samples and applied to the original data. Searching the optimal classification rule, the choices of prior probabilities were set up for both equal proportions (0.33: 0.33: 0.33) and unequal proportions of (0.90:0.05:0.05), (0.80: 0.10: 0.10) and (0.70, 0.15, 0.15). The results from 50 and 100 bootstrap samples indicated that the k-nearest neighbors approach when  $k=3$  or  $k=4$  and the defined prior probabilities of non-risk: risk: diabetic as 0.90: 0.05:0.05 or 0.80:0.10:0.10 gave the smallest error rate of misclassification. The k-nearest neighbors approach would be suggested for classifying a three-class-imbalanced data of diabetes risk groups.

**Keywords:** Bootstrap, diabetes risk groups, error rate, k-nearest neighbors.

## Validation of an Acuity Measurement Tool for Maternity Services

Cherryl Lowe

CEO of Trend Care Systems Pty Ltd, Brisbane, Australia

### Abstract:

**Background** - The TrendCare Patient Dependency System is currently used by a large number of maternity Services across Australia, New Zealand and Singapore. In 2012, 2013 and 2014 validation studies were initiated in all three countries to validate the acuity tools used for women in labour, and postnatal mothers and babies. This paper will present the findings of the validation study. **Aim** - The aim of this study was to; identify if the care hours provided by the TrendCare acuity system was an accurate reflection of the care required by women and babies; obtain evidence of changes required to acuity indicators and/or category timings to ensure the TrendCare acuity system remains reliable and valid across a range of maternity care models in three countries. **Method** - A non-experimental action research methodology was used across maternity services in four District Health Boards in New Zealand, a large tertiary and a large secondary maternity service in Singapore and a large public maternity service in Australia. Standardised data collection forms and timing devices were used to collect midwife contact times, with women and babies included in the study. Rejection processes excluded samples when care was not completed/rationed, and contact timing forms were incomplete. The variances between actual timed midwife/mother/baby contact and the TrendCare acuity category times were identified and investigated. **Results** - Thirty two (88.9%) of the 36 TrendCare acuity category timings, fell within the variance tolerance levels when compared to the actual timings recorded for midwifery care. Four (11.1%) TrendCare categories provided less minutes of care than the actual timings and exceeded the variance tolerance level. These were all night shift category timings. Nine postnatal categories were not able to be compared as the sample size for these categories was statistically insignificant. 100% of labour ward TrendCare categories matched actual timings for midwifery care, all falling within the variance tolerance levels. The actual time provided by core midwifery staff to assist lead maternity carer (LMC) midwives in New Zealand labour wards showed a significant deviation to previous studies. The findings of the study demonstrated the need for additional time allocations in TrendCare to accommodate an increased level of assistance given to LMC midwives. **Conclusion** - The results demonstrated the importance of regularly validating the TrendCare category timings with actual timings of the care hours provided. It was evident from the findings that variances to models of care and length of stay in maternity units have increased midwifery workloads on the night shift. The level of assistance provided by the core labour ward staff to the LMC midwife has increased substantially. **Outcomes** - As a consequence of this study, changes were made to the night duty TrendCare maternity categories, additional acuity indicators were developed and times for assisting LMC midwives in labour ward increased. The updated TrendCare version was delivered to maternity services in 2014.

**Keywords:** Maternity, acuity, midwifery research, midwifery workloads.



## **A Comprehensive Method of Fault Detection and Isolation Based On Testability Modeling Data**

Junyou Shi, Weiwei Cui

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### **Abstract:**

Testability modeling is a commonly used method in testability design and analysis of system. A dependency matrix will be obtained from testability modeling, and we will give a quantitative evaluation about fault detection and isolation. Based on the dependency matrix, we can obtain the diagnosis tree. The tree provides the procedures of the fault detection and isolation. But the dependency matrix usually includes built-in test (BIT) and manual test in fact. BIT runs the test automatically and is not limited by the procedures. The method above cannot give a more efficient diagnosis and use the advantages of the BIT. A Comprehensive method of fault detection and isolation is proposed. This method combines the advantages of the BIT and Manual test by splitting the matrix. The result of the case study shows that the method is effective.

**Keywords:** BIT, fault detection, fault isolation, testability modeling.

## **Yawning and Cortisol as a Potential Biomarker for Early Detection of Multiple Sclerosis**

Simon B. N. Thompson

Hôpital Universitaire Amiens, and Jules Verne Université de Picardie, France

### **Abstract:**

Cortisol is essential to the regulation of the immune system and yawning is a pathological symptom of multiple sclerosis (MS). Electromyography activity (EMG) in the jaw muscles typically rises when the muscles are moved and with yawning is highly correlated with cortisol levels in healthy people. Saliva samples from 59 participants were collected at the start and after yawning, or at the end of the presentation of yawning-provoking stimuli, in the absence of a yawn, together with EMG data and questionnaire data: Hospital Anxiety and Depression Scale, Yawning Susceptibility Scale, General Health Questionnaire, demographic, health details. Exclusion criteria: chronic fatigue, diabetes, fibromyalgia, heart condition, high blood pressure, hormone replacement therapy, multiple sclerosis, stroke. Significant differences were found between the saliva cortisol samples for the yawners,  $t(23) = -4.263$ ,  $p = 0.000$ , as compared with the non-yawners between rest and post-stimuli, which was nonsignificant. Significant evidence was found to support the Thompson Cortisol Hypothesis suggesting that rises in cortisol levels are associated with yawning. Further research is exploring the use of cortisol as an early diagnostic tool for MS. Ethics approval granted and professional code of conduct, confidentiality, and safety issues are approved therein.

**Keywords:** Cortisol, Multiple Sclerosis, Yawning, Thompson's Cortisol Hypothesis.

## **An Application of Self-Health Risk Assessment among Populations Living in the Vicinity of a Fiber-Cement Roofing Factory**

Phayong Thepaksorn

Trang Research Center for Occupational Health, Thailand

### **Abstract:**

The objective of this study was to assess whether living in proximity to a roofing fiber cement factory in southern Thailand was associated with physical, mental, social, and spiritual health domains measured in a self-reported health risk assessment (HRA) questionnaire. A cross-sectional study was conducted among community members divided into two groups: near population (living within 0-2km of factory) and far population (living within 2-5km of factory) (N=198). A greater proportion of those living far from the factory (65.34%) reported physical health problems than the near group (51.04%) ( $p=0.032$ ). This study has demonstrated that the near population group had higher proportion of participants with positive ratings on mental assessment (30.34%) and social health impacts (28.42%) than far population group (10.59% and 16.67%, respectively) ( $p < 0.001$ ). The near population group (29.79%) had similar proportion of participants with positive ratings in spiritual health impacts compared with far population group (27.08%). Among females, but not males, this study demonstrated that a higher proportion of the near population had a positive summative score for the self-HRA, which included all four health domain, compared to the far population ( $p < 0.001$  for females;  $p = 0.154$  for males). In conclusion, this self-HRA of physical, mental, social, and spiritual health domains reflected the risk perceptions of populations living in the vicinity of the roofing fiber cement factory. This type of tool can bring attention to population concerns and complaints in the factory's surrounding community. Our findings may contribute to future development of self-HRA for HIA development procedure in Thailand.

**Keywords:** Cement dust, health impact assessment, risk assessment, walk-through survey.

## **Predictors of Non-Alcoholic Fatty Liver Disease in Egyptian Obese Adolescents**

Moushira Zaki, Wafaa Ezzat, Yasser Elhosary, Omnia Saleh

National Research Centre, Medical Research Division, Egypt

### **Abstract:**

Nonalcoholic fatty liver disease (NAFLD) has increased in conjunction with obesity. The accuracy of risk factors for detecting NAFLD in obese adolescents has not undergone a formal evaluation. The aim of this study was to evaluate predictors of NAFLD among Egyptian female obese adolescents. The study included 162 obese female adolescents. All were subjected to anthropometry, biochemical analysis and abdominal ultrasonographic assessment. Metabolic syndrome (MS) was diagnosed according to the IDF criteria. Significant association between presence of MS and NAFLD was observed. Obese adolescents with NAFLD had significantly higher levels of ALT, triglycerides, fasting glucose, insulin, blood pressure and HOMA-IR, whereas decreased HDL-C levels as compared with obese cases without NAFLD. Receiver–operating characteristic (ROC) curve analysis shows that ALT is a sensitive predictor for NAFLD, confirming that ALT can be used as a marker of NAFLD.

**Keywords:** Adolescents, Egyptians, obesity.

## Differential Sensitivity of Nitrogen-Fixing, Filamentous Cyanobacterial Species to an Organochlorine Insecticide - 6, 7, 8, 9, 10, 10-Hexachloro-1, 5, 5a, 6, 9, 9a-Hexahydro-6, 9-Methano-2, 4, 3-Benzodioxathiepine-3-Oxide

Nirmal J.I. Kumar, Anubhuti A. Bora, Manmeet K. Amb

Institute of Science and Technology for Advanced Studies and Research (ISTAR), INDIA

### Abstract:

Application of pesticides in the paddy fields has deleterious effects on non-target organisms including cyanobacteria which are photosynthesizing and nitrogen fixing micro-organisms contributing significantly towards soil fertility and crop yield. Pesticide contamination in the paddy fields has manifested into a serious global environmental concern. To study the effect of one such pesticide, three cyanobacterial strains; *Anabaena fertilissima*, *Aulosira fertilissima* and *Westiellopsis prolifica* were selected for their stress responses to an Organochlorine insecticide - 6, 7, 8, 9, 10, 10-hexachloro-1, 5, 5a, 6, 9, 9a-hexahydro-6, 9-methano-2, 4, 3-benzodioxathiepine-3-oxide, with reference to their photosynthetic pigments-chlorophyll-a and carotenoids as well as accessory pigments-phycoobiliproteins (phycocyanin, allophycocyanin and phycoerythrin), stress induced biochemical metabolites like carbohydrates, proteins, amino acids, phenols and enzymes-nitrate reductase, glutamine synthetase and succinate dehydrogenase. All the three cyanobacterial strains were adversely affected by the insecticide doses and inhibition was dose dependent. Reduction in photosynthetic and accessory pigments, metabolites, nitrogen fixing and respiratory enzymes of the test organisms were accompanied with an initial increase in their total protein at lower Organochlorine doses. On the other hand, increased amount of phenols in all the insecticide treated concentrations was indicative of stressed activities of the organisms.

**Keywords:** biochemical metabolites, endosulfan, enzymes, pigments

## **An Evaluation of Pesticide Stress Induced Proteins in three Cyanobacterial Species- Anabaena Fertilissima, Aulosira Fertilissima and Westiellopsis Prolifica using SDS- PAGE**

Nirmal Kumar, Rita N. Kumar, Anubhuti Bora, Manmeet Kaur Amb

ISTAR, INDIA

### **Abstract:**

The whole-cell protein-profiling technique was evaluated for studying differences in banding pattern of three different species of Cyanobacteria i.e. *Anabaena fertilissima*, *Aulosira fertilissima* and *Westiellopsis prolifica* under the influence of four different pesticides-2,4-D (Ethyl Ester of 2,4-Dichloro Phenoxy Acetic Acid), Pencycuron (N-[(4-chlorophenyl)methyl]-N-cyclopentyl- N'-phenylurea), Endosulfan (6,7,8,9,10,10hexachloro- 1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepine-3- oxide) and Tebuconazole (1-(4-Chlorophenyl)-4,4-dimethyl-3-(1,2,4- triazol-1-ylmethyl)pentan-3-ol). Whole-cell extracts were obtained by sonication treatment (Sonifier cell disruptor -Branson Digital Sonifier S-450D, USA) and were analyzed by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). SDS-PAGE analyses of the total protein profile of *Anabaena fertilissima*, *Aulosira fertilissima* and *Westiellopsis prolifica* showed a linear decrease in the protein content with increasing pesticide stress when administered to different concentrations of 2, 4-D, Pencycuron, Endosulfan and Tebuconazole. The results indicate that different stressors exert specific effects on cyanobacterial protein synthesis.

**Keywords:** Cyanobacteria, pesticide, SDS-PAGE

## Computational Identification of MicroRNAs and their Targets in two Species of Evergreen Spruce Tree (*Picea*)

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### Abstract:

MicroRNAs (miRNAs) are small, non-coding and regulatory RNAs about 20 to 24 nucleotides long. Their conserved nature among the various organisms makes them a good source of new miRNAs discovery by comparative genomics approach. The study resulted in 21 miRNAs of 20 pre-miRNAs belonging to 16 families (miR156, 157, 158, 164, 165, 168, 169, 172, 319, 390, 393, 394, 395, 400, 472 and 861) in evergreen spruce tree (*Picea*). The miRNA families; miR 157, 158, 164, 165, 168, 169, 319, 390, 393, 394, 400, 472 and 861 are reported for the first time in the *Picea*. All 20 miRNA precursors form stable minimum free energy stem-loop structure as their orthologues form in *Arabidopsis* and the mature miRNA reside in the stem portion of the stem loop structure. Sixteen (16) miRNAs are from *Picea glauca* and five (5) belong to *Picea sitchensis*. Their targets consist of transcription factors, growth related, stressed related and hypothetical proteins.

**Keywords:** BLAST, Comparative Genomics, Micro-RNAs, Spruce

## **A New Approach In Protein Folding Studies Revealed The Potential Site For Nucleation Center**

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### **Abstract:**

A new approach to predict the 3D structures of proteins by combining the knowledge-based method and Molecular Dynamics Simulation is presented on the chicken villin headpiece subdomain (HP-36). Comparative modeling is employed as the knowledge-based method to predict the core region (Ala9-Asn28) of the protein while the remaining residues are built as extended regions (Met1-Lys8; Leu29-Phe36) which then further refined using Molecular Dynamics Simulation for 120 ns. Since the core region is built based on a high sequence identity to the template (65%) resulting in RMSD of 1.39 Å from the native, it is believed that this well-developed core region can act as a 'nucleation center' for subsequent rapid downhill folding. Results also demonstrate that the formation of the non-native contact which tends to hamper folding rate can be avoided. The best 3D model that exhibits most of the native characteristics is identified using clustering method which then further ranked based on the conformational free energies. It is found that the backbone RMSD of the best model compared to the NMR-MDavg is 1.01 Å and 3.53 Å, for the core region and the complete protein, respectively. In addition to this, the conformational free energy of the best model is lower by 5.85 kcal/mol as compared to the NMR-MDavg. This structure prediction protocol is shown to be effective in predicting the 3D structure of small globular protein with a considerable accuracy in much shorter time compared to the conventional Molecular Dynamics simulation alone.

**Keywords:** 3D model, Chicken villin headpiece subdomain, Molecular dynamic simulation NMR-MDavg, RMSD.



## **Detection of Oxidative Stress Induced by Mobile Phone Radiation in Tissues of Mice using 8-Oxo-7, 8-Dihydro-2'-Deoxyguanosine as a Biomarker**

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armouk University-Irbid-JORDAN

### **Abstract:**

We investigated oxidative DNA damage caused by radio frequency radiation using 8-oxo-7, 8-dihydro-2'- deoxyguanosine (8-oxodG) generated in mice tissues after exposure to 900 MHz mobile phone radio frequency in three independent experiments. The RF was generated by a Global System for Mobile Communication (GSM) signal generator. The radio frequency field was adjusted to 25 V/m. The whole body specific absorption rate (SAR) was 1.0 W/kg. Animals were exposed to this field for 30 min daily for 30 days. 24 h post-exposure, blood serum, brain and spleen were removed and DNA was isolated. Enzyme-linked immunosorbent assay (ELISA) was used to measure 8-oxodG concentration. All animals survived the whole experimental period. The body weight of animals did not change significantly at the end of the experiment. No statistically significant differences observed in the levels of oxidative stress. Our results are not in favor of the hypothesis that 900 MHz RF induces oxidative damage.

**Keywords:** Mice, Mobile phone radiation, oxidative stress, 8-oxo-7, 8-dihydro-2'-deoxyguanosine

## Microbial Oil Production by Isolated Oleaginous Yeast *Torulaspota globosa* YU5/2

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### Abstract:

Microbial oil was produced by soil isolated oleaginous yeast YU5/2 in flask-batch fermentation. The yeast was identified by molecular genetics technique based on sequence analysis of the variable D1/D2 domain of the large subunit (26S) ribosomal DNA and it was identified as *Torulaspota globosa*. *T. globosa* YU5/2 supported maximum values of 0.520 g/L/d, 0.472 g lipid/g cells, 4.16 g/L, and 0.156 g/L/d for volumetric lipid production rate, and specific yield of lipid, lipid concentration, and specific rate of lipid production respectively, when culture was performed in nitrogen-limiting medium supplemented with 80g/L glucose. Among the carbon sources tested, maximum cell yield coefficient ( $Y_{X/S}$ , g/L), maximum specific yield of lipid ( $Y_{P/X}$ , g lipid/g cells) and volumetric lipid production rate (QP, g/L/d) were found of 0.728, 0.237, and 0.619, respectively, using sweet potato tubers hydrolysates as carbon source.

**Keywords:** Microbial oil, oleaginous yeast, *Torulaspota globosa* YU5/2, sweet potato tubers, kinetic parameters.

## **High-Intensity Nanosecond Pulsed Electric Field effects on Early Physiological Development in *Arabidopsis thaliana***

Wisuwat Songnuan, Phumin Kirawanich

Mahidol University, Thailand

### **Abstract:**

The influences of pulsed electric fields on early physiological development in *Arabidopsis thaliana* were studied. Inside a 4-mm electroporation cuvette, pre-germination seeds were subjected to high-intensity, nanosecond electrical pulses generated using laboratory-assembled pulsed electric field system. The field strength was varied from 5 to 20 kV.cm<sup>-1</sup> and the pulse width and the pulse number were maintained at 10 ns and 100, respectively, corresponding to the specific treatment energy from 300 J.kg<sup>-1</sup> to 4.5 kJ.kg<sup>-1</sup>. Statistical analyses on the average leaf area 5 and 15 days following pulsed electric field treatment showed that the effects appear significant the second week after treatments with a maximum increase of 80% compared to the control ( $P < 0.01$ ).

**Keywords:** *Arabidopsis thaliana*, full-wave analysis, leaf area, high-intensity nanosecond pulsed electric fields

## **Micro-aerobic, Anaerobic and Two-stage Condition for Ethanol Production by enterobacter aerogenes from Biodiesel-derived Crude Glycerol**

Kanokrat Saisaard, Irini Angelidaki, Poonsuk Prasertsan

### **Abstract:**

The microbial production of ethanol from biodiesel-derived crude glycerol by *Enterobacter aerogenes* TISTR1468, under micro-aerobic and anaerobic conditions, was investigated. The experimental results showed that micro-aerobic conditions were more favorable for cellular growth (4.0 g/L DCW), ethanol production (20.7 g/L) as well as the ethanol yield (0.47 g/g glycerol) than anaerobic conditions (1.2 g/L DCW, 6.3 g/L ethanol and 0.72 g/g glycerol, respectively). Crude glycerol (100 g/L) was consumed completely with the rate of 1.80 g/L/h. Two-stage fermentation (combination of micro-aerobic and anaerobic condition) exhibited higher ethanol production (24.5 g/L) than using one-stage fermentation (either micro-aerobic or anaerobic condition). The two-stage configuration, exhibited slightly higher crude glycerol consumption rate (1.81 g/L/h), as well as ethanol yield (0.56 g/g) than the one-stage configuration. Therefore, two-stage process was selected for ethanol production from *E. aerogenes* TISTR1468 in scale-up studies.

**Keywords:** crude glycerol, ethanol, micro-aerobic, two-stage, *Enterobacter aerogenes*

## Using Malolactic Fermentation with Acid- And Ethanol- Adapted *Oenococcus Oeni* Strain to Improve the Quality of Wine from Champs Bourcin Grape in Sapa - Lao Cai

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### Abstract:

Champs Bourcin black grape originated from Aquitaine, France and planted in Sapa, Lao cai province, exhibited high total acidity (11.72 g/L). After 9 days of alcoholic fermentation at 25°C using *Saccharomyces cerevisiae* UP30Y5 strain, the ethanol concentration of wine was 11.5% v/v, however the sharp sour taste of wine has been found. The malolactic fermentation (MLF) was carried out by *Oenococcus oeni* ATCCBAA-1163 strain which had been preadapted to acid (pH 3-4) and ethanol (8-12% v/v) conditions. We obtained the highest viability (83.2%) upon malolactic fermentation after 5 days at 22°C with early stationary phase *O. oeni* cells preadapted to pH 3.5 and 8% v/v ethanol in MRS medium. The malic acid content in wine was decreased from 5.82 g/L to 0.02 g/L after MLF (21 days at 22°C). The sensory quality of wine was significantly improved.

**Keywords:** Champs Bourcin grape, malolactic fermentation, pre-adaptation, *Oenococcus oeni*

## **A New Edit Distance Method for Finding Similarity in Dna Sequence**

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### **Abstract:**

The P-Bigram method is a string comparison methods base on an internal two characters-based similarity measure. The edit distance between two strings is the minimal number of elementary editing operations required to transform one string into the other. The elementary editing operations include deletion, insertion, substitution two characters. In this paper, we address the P-Bigram method to sole the similarity problem in DNA sequence. This method provided an efficient algorithm that locates all minimum operation in a string. We have been implemented algorithm and found that our program calculated that smaller distance than one string. We develop PBigram edit distance and show that edit distance or the similarity and implementation using dynamic programming. The performance of the proposed approach is evaluated using number edit and percentage similarity measures.

**Keywords:** Edit distance, String Matching, String Similarity

## Characterization of the O.ul-mS952 Intron:A Potential Molecular Marker to Distinguish Between Ophiostoma Ulmi and Ophiostoma Novo-Ulmi Subsp. Americana

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### Abstract:

The full length mitochondrial small subunit ribosomal (mt-rns) gene has been characterized for *Ophiostoma novo-ulmi* subspecies *americana*. The gene was also characterized for *Ophiostoma ulmi* and a group II intron was noted in the mt-rns gene of *O. ulmi*. The insertion in the mt-rns gene is at position S952 and it is a group IIB1 intron that encodes a double motif LAGLIDADG homing endonuclease from an open reading frame located within a loop of domain III. Secondary structure models for the mt-rns RNA of *O. novo-ulmi* subsp. *americana* and *O. ulmi* were generated to place the intron within the context of the ribosomal RNA. The *in vivo* splicing of the O.ul-mS952 group II intron was confirmed with reverse transcription-PCR. A survey of 182 strains of Dutch Elm Diseases causing agents showed that the mS952 intron was absent in what is considered to be the more aggressive species *O. novo-ulmi* but present in strains of the less aggressive *O. ulmi*. This observation suggests that the O.ul-mS952 intron can be used as a PCR-based molecular marker to discriminate between *O. ulmi* and *O. novo-ulmi* subsp. *americana*.

**Keywords:** Dutch Elm Disease, group II introns, mtDNA, species identification

## Sex Differences in Thyroid Gland Structure of Rabbits

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### Abstract:

The aim of the present investigation was to compare sex differences in thyroid gland structure of rabbits. Five adult male and five adult female (3.1-3.5 kg body weight) New Zealand white rabbits were used in the experiment. Results showed that at light microscopic level, there was no sex difference in microscopic appearance of the thyroid glands. At electron microscopic level, however, the mitochondria and the microvilli of the follicular cells are more numerous and the Golgi complex is also more extensive in male rabbits in comparison to females. Results obtained from micrometric measurements showed that the volume density of the follicles is higher in males than in females, but the differences are not statistically significant. The volume density of epithelium and the height of follicular cells are significantly greater in males than in females and reverse is true about the volume density of interstitium ( $p < 0.05$ ). The volume density of colloid is also greater in females ( $66 \pm 6$ ) than in males ( $60 \pm 7$ ) but the differences are not statistically significant. It was concluded that sex has limited effects on histomorphometric properties of thyroid gland in rabbits.

**Keywords:** Rabbit, Thyroid Gland, Sex difference, Electron microscope



## **Evaluation of Protein Digestibility in Canola Meals between Caecectomised and Intact Adult Cockerels**

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Animal Science Research Institute, Karaj-I.R. Iran.

### **Abstract:**

The experiment was conducted to evaluate digestibility quantities of protein in Canola Meals (CMs) between caecectomised and intact adult Rhode Island Red (RIR) cockerels with using conventional addition method (CAM) for 7 d: a 4-d adaptation and a 3-d experiment period on the basis of a completely randomized design with 4 replicates. Results indicated that caecectomy decreased ( $P<0.05$ ) apparent and true digestibility quantities of protein for CMs, except for CMs 2 and 3. The mean apparent and true digestibility quantities for all CMs in caecectomised (80.5 and 81.4%, respectively) were (3.1 and 3.3%, respectively) less ( $P<0.05$ ) than intact cockerels (83.6 and 84.7%, respectively). Therefore, the caecectomy method increases accuracy of the digestibility measurements of protein for this meal in bioassays based on excreta collection in adult cockerels.

**Keywords:** Adult cockerels, caecectomy, canola meals, proteindigestibility.

## Effect of L-Arginine on Neuromuscular Transmission of the Chick Biventer Cervicis Muscle

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### Abstract:

In this study, the effect of L-arginine was examined at the neuromuscular junction of the chick biventer cervicis muscle. L-Arginine at 500  $\mu\text{g}/\text{ml}$ , decreased twitch response to electrical stimulation, and produced rightward shift of the dose-response curve for acetylcholine or carbachol. L-Arginine at 1000 $\mu\text{g}/\text{ml}$  produced a strong shift to the right of the dose-response curve for acetylcholine or carbachol with a reduction in the efficacy. The inhibitory effect of L-arginine on the twitch response was blocked by caffeine (200 $\mu\text{g}/\text{ml}$ ). NO levels were also measured in the chick biventer cervicis muscle homogenates, using spectrophotometric method for the direct detection of NO, nitrite and nitrate. Total nitrite (nitrite + nitrate) was measured by a spectrophotometer at 540 nm after the conversion of nitrate to nitrite by copperized cadmium granules. NO levels were found to be significantly increased in concentrations 500 and 1000 $\mu\text{g}/\text{ml}$  of L-arginine in comparison with the control group ( $p < 0.001$ ). These findings indicate a possible role of increased NO levels in the suppressive action of L-arginine on the twitch response. In addition, the results indicate that the post-junctional antagonistic action of L-arginine is probably the result of impaired sarcoplasmic reticulum (SR)  $\text{Ca}^{2+}$  releases.

**Keywords:** Chick, L-Arginine, Nitric Oxide, Skeletal muscle.

## **The Relationship between Sheep Management and Lamb Mortality**

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Kafr EL-Sheikh, University, Egypt.

### **Abstract:**

This study was carried out to investigate lamb mortalities relating to ewes' breed and some managerial factors on 250 pregnant ewes (190-Rahmani, 30-Ossimi and 30-Romanov) at Mehallet Mousa, Animal Production Research Station, Kafr El- Sheikh Province, Egypt. These animals divided into five groups according to the managerial factors used. The results revealed that the lamb mortality was higher in Ossimi breed and lower in Romanov one. In addition, the highest lamb mortality occurred among lambs for unsupplemented ewes, for those had body condition score two and for lambs which born outdoor. Moreover, the lamb survivability was increased by the parity of ewes. From this study it can be concluded that the lamb mortality depends on ewes' body condition score, parity, lambing system (indoor or outdoor), nutrition during pregnancy period and selected breed. In addition, the most important period for lamb survival is the first week of age.

**Keywords:** lamb mortality, sheep breeds, sheep management, sheep parity.

## Effect of Stocking Density on Monosex Nile Tilapia Growth during Pond Culture in India

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\*\*University of Calcutta, Kolkata, West Bengal, India.

### Abstract:

Stocking density is considered one of the important factors affecting fish growth. But, information related to impact of stocking density on growth performance of monosex tilapia population under the ecological conditions of Gangetic plains in West Bengal, India is limited. The aim of our study was to compare the growth potential of monosex tilapia at various stocking densities and to determine an ideal stocking density for culture of all-male monosex fish. The males were isolated by examination of genital papilla region and were stocked separately in 0.01 ha earthen ponds at different stocking densities (5000, 10000, 15000, 20000, 25000 and 30000 fingerlings/ha). It was found that the highest weight, length, daily weight gain, growth rate and protein content were observed for the 20000 fish/ha density class. Thus, culture of monosex tilapia at a density of 20000 fish/ha can be considered ideal for augmented production of the fish under Indian context.

**Keywords:** Growth potential, Nile tilapia, Pond culture, Stocking density.

## Pragati Node Popularity (PNP) Approach to Identify Congestion Hot Spots in MPLS

E. Ramaraj, A. Padmapriya

### Abstract:

In large Internet backbones, Service Providers typically have to explicitly manage the traffic flows in order to optimize the use of network resources. This process is often referred to as Traffic Engineering (TE). Common objectives of traffic engineering include balance traffic distribution across the network and avoiding congestion hot spots. Raj P H and SVK Raja designed the Bayesian network approach to identify congestion hot spots in MPLS. In this approach for every node in the network the Conditional Probability Distribution (CPD) is specified. Based on the CPD the congestion hot spots are identified. Then the traffic can be distributed so that no link in the network is either over utilized or under utilized. Although the Bayesian network approach has been implemented in operational networks, it has a number of well known scaling issues. This paper proposes a new approach, which we call the Pragati (means Progress) Node Popularity (PNP) approach to identify the congestion hot spots with the network topology alone. In the new Pragati Node Popularity approach, IP routing runs natively over the physical topology rather than depending on the CPD of each node as in Bayesian network. We first illustrate our approach with a simple network, then present a formal analysis of the Pragati Node Popularity approach. Our PNP approach shows that for any given network of Bayesian approach, it exactly identifies the same result with minimum efforts. We further extend the result to a more generic one: for any network topology and even though the network is loopy. A theoretical insight of our result is that the optimal routing is always shortest path routing with respect to some considerations of hot spots in the networks.

**Keywords:** Conditional Probability Distribution, Congestion hotspots, Operational Networks, Traffic Engineering.

## **Improvement of Semen Quality in Holstein Bulls during Heat Stress by Supplementing Omega-3 Fatty Acids**

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İslamic Azad University, Science and Research Branch, Tehran, Iran.

### **Abstract:**

The aim of current study was to investigate the changes in the quality parameters of Holstein bull semen during the heat stress and the effect of feeding a source of omega-3 fatty acids in this period. Samples were obtained from 19 Holstein bulls during the expected time of heat stress in Iran (June to September 2009). Control group (n=10) were fed a standard concentrate feed while treatment group (n=9) had this feed top dressed with 100 g of an omega-3 enriched nutraceutical. Semen quality was assessed on ejaculates collected after 1, 5, 9 and 12 weeks of supplementation. Computer-assisted assessment of sperm motility, viability (eosin-nigrosin) and hypo-osmotic swelling test (HOST) were conducted. Heat stress affected sperm quality parameters by week 5 and 9 ( $p < 0.05$ ). Supplementation has significantly increased total motility, progressive motility, HOST and average path velocity in the fresh semen of bulls ( $P < 0.05$ ).

**Keywords:** Bull, heat stress, omega-3 fatty acids, spermatozoa.

## The Relationship between Excreta Viscosity and TMEn in SBM

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### Abstract:

The experiment was performed to study the relationship between excreta viscosity and Nitrogen-corrected true metabolisable energy quantities of soybean meals using conventional addition method (CAM) in adult cockerels for 7 d: a 3-d preexperiment and a 4-d experiment period. Results indicated that differences between the excreta viscosity values were ( $P<0.01$ ) significant for SBMs. The excreta viscosity values were less ( $P<0.01$ ) for SBMs 6, 2, 8, 1 and 3 than other SBMs. The mean TMEn (kcal/kg) values were significant ( $P<0.01$ ) between SBMs. The most TMEn values were ( $P<0.01$ ) for SBMs 6, 2, 8 and 1, also the lowest TMEn values were ( $P<0.01$ ) for SBMs 3, 7, 4, 9 and 5. There was a reverse linear relationship between the values of excreta viscosity and TMEn in SBMs. In conclusion, there was a reverse linear relationship between the values of excreta viscosity and TMEn in SBMs probably due to their various soluble NSPs.

**Keywords:** soybean meals (SBMs), Nitrogen-corrected true metabolisable energy (TMEn), viscosity

## Anticoagulatory Role of an Ergot Mesylate: Hydergine

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### Abstract:

Thrombosis can be life threatening, necessitating therefore its instant treatment. Hydergine, a nootropic agent is used as a cognition enhancer in stroke patients but relatively little is known about its anti-thrombolytic effect. To investigate this aspect, *in vivo* and *ex vivo* experiments were designed and conducted. Three groups of rats were injected 1.5mg, 3.0mg and 4.5mg hydergine intraperitoneally with and without prior exposure to fresh plasma. Positive and negative controls were run in parallel. Animals were sacrificed after 1.5hrs and BT, CT, PT, INR, APTT, plasma calcium levels were estimated. For *ex vivo* analyses, each 1ml blood aspirated was exposed to 0.1mg, 0.2mg, 0.3mg dose of hydergine with parallel controls. Parameters analyzed were as above. Statistical analysis was through one-way ANOVA. Dunken-s and Tukey-s tests provided intra-group variance. BT, CT, PT, INR and APTT increased while calcium levels dropped significantly ( $P<0.05$ ). *Ex vivo*, CT, PT and APTT were elevated while plasma calcium levels lowered significantly ( $P<0.05$ ). Our study suggests that hydergine may act as a thrombolytic agent but warrants further studies to elucidate this role of ergot mesylates.

**Keywords:** Hydergine, Coagulation assays, plasma calcium, ergot mesylates, thrombosis.



## **The Effect of Selective Cyclooxygenase (COX) Inhibitors on Japanese Medaka (*Oryzias latipes*) Reproduction Parameters**

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### **Abstract:**

Our results showed that treatment with both cyclooxygenase (COX1 or COX2) inhibitors impair reproduction parameters of the medaka. Resveratrol (COX1 inhibitor) caused an decrease in the number of spawning females at the first week of feeding fish with experimental diets. In the group treated with NS- 398 (COX2 inhibitor) we found the lowest sperm velocity parameters and decreased linearity of movement. The ovaries of the medaka fed feed supplemented with Resveratrol or NS-398 were confirmed to have a lower share of matured oocytes however during the experiment (four weeks) the number of eggs spawned by females was similar. Both inhibitors in fish diet (20 mg/kg body weight/day) caused a decrease in the embryo survival. Our results revealed that for the medaka female reproduction, activity of both COX enzymes might be necessary whereas males reproduction competence, as expressed by sperm motility parameters, might be related to COX2 activity.

**Keywords:** COX inhibitors, medaka, reproduction parameters

## Perceptions of Health Status and Lifestyle Health Behaviors of Poor People in Mauritius

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### Abstract:

In Mauritius, much emphasis is put on measures to combat the high prevalence of non-communicable diseases (NCDs). Health promotion campaigns for the adoption of healthy behaviors and screening programs are done regularly by local authorities and NCD surveys are carried out at intervals. However, the health behaviors of the poor have not been investigated so far. This study aims to give an insight on the perceptions of health status and lifestyle health behaviors of poor people in Mauritius. A cross-sectional study among 83 persons benefiting from social aid in a selected urban district was carried out. Results showed that 51.8% of respondents perceived that they had good health status. 57.8% had no known NCD whilst 25.3% had hypertension, followed by diabetes (16.9%), asthma (9.6%) and heart disease (7.2%). They had low smoking (10.8%) and alcohol consumption (6.0%) as well as high physical activity prevalence (54.2%). These results were significantly different from the NCD survey carried out in the general population. Consumption of vegetables in the study was high. Overweight and obesity trends were however similar to the NCD survey report 2009. These findings contrast with other international studies showing poor people having poor perceptions of health status and unhealthy behavioral choices. Whether these positive health behaviors of poor people in Mauritius arise out of choice or whether it is because the alternative behavior is too costly remains to be investigated further.

**Keywords:** Health behavior, non-communicable diseases, poor people.

## Spreading Dynamics of a Viral Infection in a Complex Network

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### Abstract:

We report a computational study of the spreading dynamics of a viral infection in a complex (scale-free) network. The final epidemic size distribution (FESD) was found to be unimodal or bimodal depending on the value of the basic reproductive number  $R_0$ . The FESDs occurred on time-scales long enough for intermediate-time epidemic size distributions (IESDs) to be important for control measures. The usefulness of  $R_0$  for deciding on the timeliness and intensity of control measures was found to be limited by the multimodal nature of the IESDs and by its inability to inform on the speed at which the infection spreads through the population. A reduction of the transmission probability at the hubs of the scale-free network decreased the occurrence of the larger-sized epidemic events of the multimodal distributions. For effective epidemic control, an early reduction in transmission at the index cell and its neighbors was essential.

**Keywords:** Basic reproductive number, epidemic control, scalefree network, viral infection.

## Chase Trainer Exercise Program in Athlete with Unilateral Patellofemoral Pain Syndrome (PFPS)

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Lee Ai Choo is a Senior Lecturer at Universiti Pendidikan Sultan Idris, Malaysia.

### Abstract:

We investigated the effects of modified preprogrammed training mode Chase Trainer from Balance Trainer (BT3, HurLab, Tampere, Finland) on athlete who experienced unilateral Patellofemoral Pain Syndrome (PFPS). Twenty-seven athletes with mean age =  $14.23 \pm 1.31$  years, height =  $164.89 \pm 7.85$  cm, weight =  $56.94 \pm 9.28$  kg were randomly assigned to two groups: experiment (EG; n = 14) and injured (IG; n = 13). EG performed a series of Chase Trainer program which required them to shift their body weight at different directions, speeds and angle of leaning twice a week for duration of 8 weeks. The static postural control and perceived pain level measures were taken at baseline, after 6 weeks and 8 weeks of training. There was no significant difference in any of tested variables between EG and IG before and after 6-week the intervention period. However, after 8-week of training, the postural control (eyes open) and perceived pain level of EG improved compared to IG ( $p < 0.05$ ). The postural control with eyes closed of EG improved ( $p < 0.05$ ) but the values were not significantly different compared to IG after training. The results suggest that using Chase Trainer exercise program it is possible to improve individual postural control and decreased perceived pain level in athlete with unilateral Patellofemoral Pain Syndrome (PFPS).

**Keywords:** Patellofemoral Pain Syndrome, perceived pain level, postural control.

## **Analysis of Metallothionein Gene MT1A (rs11076161) and MT2A (rs10636) Polymorphisms as a Molecular Marker in Type 2 Diabetes Mellitus among Malay Population**

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### **Abstract:**

Type 2 diabetes mellitus (T2DM) is a complex metabolic disorder that characterized by the presence of high glucose in blood that cause from insulin resistance and insufficiency due to deterioration  $\beta$ -cell Langerhans functions. T2DM is commonly caused by the combination of inherited genetic variations as well as our own lifestyle. Metallothionein (MT) is a known cysteine-rich protein responsible in helping zinc homeostasis which is important in insulin signaling and secretion as well as protection our body from reactive oxygen species (ROS). MT scavenged ROS and free radicals in our body happen to be one of the reasons of T2DM and its complications. The objective of this study was to investigate the association of MT1A and MT2A polymorphisms between T2DM and control subjects among Malay populations. This study involved 150 T2DM and 120 Healthy individuals of Malay ethnic with mixed genders. The genomic DNA was extracted from buccal cells and amplified for MT1A and MT2A loci; the 347bp and 238bp banding patterns were respectively produced by mean of the Polymerase Chain Reaction (PCR). The PCR products were digested with Mlucl and Tsp451 restriction enzymes respectively and producing fragments lengths of (158/189/347bp) and (103/135/238bp) respectively. The ANOVA test was conducted and it shown that there was a significant difference between diabetic and control subjects for age, BMI, WHR, SBP, FPG, HBA1C, LDL, TG, TC and family history with ( $P < 0.05$ ). While the HDL, CVD risk ratio and DBP does not show any significant difference with ( $P > 0.05$ ). The genotype frequency for AA, AG and GG of MT1A polymorphisms was 72.7%, 22.7% and 4.7% in cases and 15%, 55% and 30% in control respectively. As for MT2A, genotype frequency of GG, GC and CC was 42.7%, 27.3% and 30% in case and 5%, 40% and 55% for control respectively. Both polymorphisms show significant difference between two investigated groups with ( $P = 0.000$ ). The Post hoc test was conducted and shows a significant difference between the genotypes within each polymorphism ( $P = 0.000$ ). The MT1A and MT2A polymorphisms were believed to be the reliable molecular markers to distinguish the T2DM subjects from healthy individuals in Malay populations.

**Keywords:** Type 2 Diabetes Mellitus (T2DM), Metallothionein (MT), MT1A (rs11076161), MT2A (rs10636), Malay, Genetic Polymorphism.

## Effect of On-Demand Cueing on Freezing of Gait in Parkinson's Patients

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### Abstract:

Gait disturbance, particularly freezing of gait (FOG), is a phenomenon that is common in Parkinson's patients and significantly contributes to a loss of function and independence. Walking performance and number of freezing episodes have been known to respond favorably to sensory cues of different modalities. However, a topic that has so far barely been touched is how to resolve freezing episodes via sensory cues once they have appeared. In this study, we analyze the effect of five different sensory cues on the duration of freezing episodes: (1) vibratory alert, (2) auditory alert, (3) vibratory rhythm, (4) auditory rhythm, (5) visual cue in form of parallel lines projected to the floor. The motivation for this study is to investigate the possibility of the design of a gait assistive device for Parkinson's patients. Test subjects were 7 Parkinson's patients regularly suffering from FOG. The patients had to repeatedly walk a pre-defined course and cues were triggered always 2 s after freezing onset. The effect was analyzed via experimental measurements and patient interviews. The measurements showed that all 5 sensory cues led to a decrease of the average duration of freezing: baseline (7.9s), vibratory alert (7.1s), auditory alert (6.7s), auditory rhythm (6.4s), vibratory rhythm (6.3s), and visual cue (5.3s). Nevertheless, interestingly, patients subjectively evaluated the audio alert and vibratory signals to have a significantly better effect for reducing their freezing duration than the visual cue.

**Keywords:** Auditory cueing, freezing of gait, gait assistance, Parkinson's disease, vibratory cueing, visual cueing

## Effect of Cold, Warm or Contrast Therapy on Controlling Knee Osteoarthritis Associated Problems

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### Abstract:

Osteoarthritis (OA) is the most prevalent and far common debilitating form of arthritis which can be defined as a degenerative condition affecting synovial joint. Patients suffering from osteoarthritis often complain of dull ache pain on movement. Physical agents can fight the painful process when correctly indicated and used such as heat or cold therapy Aim. This study was carried out to: Compare the effect of cold, warm and contrast therapy on controlling knee osteoarthritis associated problems. Setting: The study was carried out in orthopedic outpatient clinics of Menoufia University and teaching Hospitals, Egypt. Sample: A convenient sample of 60 adult patients with unilateral knee osteoarthritis. Tools: three tools were utilized to collect the data. Tool I : An interviewing questionnaire. It comprised of three parts covering sociodemographic data, medical data and adverse effects of the treatment protocol. Tool II : Knee Injury and Osteoarthritis Outcome Score (KOOS) It consists of five main parts. Tool III : 0-10 Numeric pain rating scale. Results: revealed that the total knee symptoms score was decreased from moderate symptoms pre intervention to mild symptoms after warm and contrast method of therapy, but the contrast therapy had significant effect in reducing the knee symptoms and pain than the other symptoms. Conclusions: all of the three methods of therapy resulted in improvement in all knee symptoms and pain but the most appropriate protocol of treatment to relive symptoms and pain was contrast therapy.

**Keywords:** Knee Osteoarthritis, Cold, Warm and Contrast Therapy.

## **Chemotherapy Safety Protocol for Oncology Nurses: It's Effect on Their Protective Measures Practices**

Magda M. Mohsen, Manal E. Fareed

### **Abstract:**

**Background:** Widespread use of chemotherapeutic drugs in the treatment of cancer has led to higher health hazards among employees who handle and administer such drugs, so nurses should know how to protect themselves, their patients and their work environment against toxic effects of chemotherapy. **Aim of this study** was carried out to examine the effect of chemotherapy safety protocol for oncology nurses on their protective measure practices. **Design:** A quasi experimental research design was utilized. **Setting:** The study was carried out in oncology department of Menoufia university hospital and Tanta oncology treatment center. **Sample:** A convenience sample of forty five nurses in Tanta oncology treatment center and eighteen nurses in Menoufiya oncology department. **Tools:** I. an interviewing questionnaire that covering sociodemographic data, assessment of unit and nurses' knowledge about chemotherapy. II: Observational check list to assess nurses' actual practices of handling and administration of chemotherapy. A base line data were assessed before implementing Chemotherapy Safety protocol, then Chemotherapy Safety protocol was implemented, and after 2 months they were assessed again. **Results:** revealed that 88.9% of study group I and 55.6% of study group II improved to good total knowledge scores after educating on the safety protocol, also 95.6% of study group I and 88.9% of study group II had good total practice score after educating on the safety protocol. Moreover less than half of group I (44.4%) reported that heavy workload is the most barriers for them, while the majority of group II (94.4%) had many barriers for adhering to the safety protocol such as they didn't know the protocol, the heavy work load and inadequate equipment. **Conclusions:** Safety protocol for Oncology Nurses seemed to have positive effect on improving nurses' knowledge and practice. **Recommendation:** chemotherapy safety protocol should be instituted for all oncology nurses who are working in any oncology unit and/ or center to enhance compliance, and this protocol should be done at frequent intervals.

**Keywords:** Chemotherapy Safety protocol, Effect, protective measure practice.



## **FITTER - A Framework for Integrating Activity Tracking Technologies into Electric Recreation for Children and Adolescents**

R. Altamimi, G. Skinner, K. Nesbitt

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### **Abstract:**

Encouraging physical activity amongst children and adolescents is becoming an increasingly relevant issue in modern society. Studies have shown that involving children and adolescents in physical activity is essential for their physical, mental and social development. However, with technology playing an increasingly important role in reducing physical work it is becoming more critical to incorporate adequate physical activities into our lives. One way to overcome this problem is to harness technology so that it promotes physical activities, for example, by motivating children and adolescents to exercise more. This paper describes a promising solution to the question of how to increase levels of physical activity in children and adolescents by combining gaming technologies with exercise tracking goals. This research describes a framework called FITTER (Framework for Integrating activity Tracking Technologies for Electronic Recreation) that combines video game play with more traditional, non-computer physical activities.

**Keywords:** Exergames, Home-based eHealth, Human-computer Interaction, Natural User Interfaces, Wearable Health Informatics.

## Consumption Pattern and Dietary Practices of Pregnant Women in Odeda Local Government Area of Ogun State

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Federal University of Agriculture, Abeokuta, Nigeria

### Abstract:

The importance of maternal nutritional practices during pregnancy cannot be overemphasized. This paper assessed the consumption pattern and dietary practices of 50 pregnant women selected using purposive sampling technique from three health care centres (Primary Health Care Centre, Obantoko; Primary Health Care Centre Alabata; and the General Hospital, Odeda) in Odeda Local Government Area of Ogun State, Nigeria. Structured questionnaire was used to elicit information on socioeconomic status, consumption pattern and dietary practices. Data were analyzed using the Statistical Package for Social Sciences (SPSS, 17). The results indicated that about 58% of the pregnant women were below the age of 30 while 42% were ages 28-40 years. Only 16% had tertiary education while (38%) had secondary education, 52% earn income through petty trading. On food intake, 52% got their energy source from rice on a daily basis, followed by pap (38%) and eko (34%). For protein intake, 36% consumed bean cake on a daily basis while 66% consumed *moinmoin* 2-3 times a week. Orange (48%) and Green Leafy vegetable (40%) accounted for the mostly consumed fruit and vegetable on daily basis. In terms of animal origin, fish (76%), meat (58%) and eggs (30%) were consumed daily, while chicken and snail were consumed occasionally by 54% and 42%, respectively. Forty-six percent (46%) of the pregnant women eat more than three times daily; while 60% of the women eat outside their homes with 42% respondents eat out lunch and only two percent least eaten out dinner. It is important to increase in awareness campaign to sensitize the pregnant women on the importance of good nutrition especially fruits, vegetables and dairy products.

**Keywords:** Consumption Pattern, Dietary Practices, Pregnant, Women, Nigeria.

## **Biomechanics Analysis When Delivering Baby**

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### **Abstract:**

Plenty of analyses based on Biomechanics were carried out on many jobs in manufactures or services. Now Biomechanics analysis is being applied on mothers who are giving birth. The analysis conducted in terms of normal condition of the birth process without Gyn Bed (Obstetric Bed). The aim of analysis is to study whether it is risky or not when choosing the position of mother's postures when delivering the baby. This investigation was applied on two positions that generally appear in common birth process. Results will show the analysis of both positions to support the birth process based on the Biomechanics analysis (Ergonomic approaches).

**Keywords:** Biomechanics analysis, Birth process, Position of postures analysis, Ergonomic approaches.

## Maximum Power Point Tracking Based on Estimated Power for PV Energy Conversion System

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### Abstract:

In this paper, a method for maximum power point tracking of a photovoltaic energy conversion system is presented. This method is based on using the difference between the power from the solar panel and an estimated power value to control the DC-DC converter of the photovoltaic system. The difference is continuously compared with a preset error permitted value. If the power difference is more than the error, the estimated power is multiplied by a factor and the operation is repeated until the difference is less or equal to the threshold error. The difference in power will be used to trigger a DC-DC boost converter in order to raise the voltage to where the maximum power point is achieved. The proposed method was experimentally verified through a PV energy conversion system driven by the OPAL-RT real time controller. The method was tested on varying radiation conditions and load requirements, and the Photovoltaic Panel was operated at its maximum power in different conditions of irradiation.

**Keywords:** Control system, power error, solar panel, MPPT.

## Effect of Collector Aspect Ratio on the Thermal Performance of Wavy Finned Absorber Solar Air Heater

Abhishek Priyam, Prabha Chand

### Abstract:

A theoretical investigation on the effect of collector aspect ratio on the thermal performance of wavy finned absorber solar air heaters has been performed. For the constant collector area, the various performance parameters have been calculated for plane and wavy finned solar air heaters. It has been found that the performance of wavy finned solar air heater improved with the increase in the collector aspect ratio. The performance of wavy finned solar air heater has been found 30 percent higher than those of plane solar air heater. The obtained results for wavy fin solar air heaters are compared with the available experimental data of most common type solar air heaters.

**Keywords:** Wavy fin, aspect ratio, solar air heater, thermal efficiency, collector efficiency factor, temperature rise.

## Similitude for Thermal Scale-up of a Multiphase Thermolysis Reactor in the Cu-Cl Cycle of a Hydrogen Production

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### Abstract:

The thermochemical copper-chlorine (Cu-Cl) cycle is considered as a sustainable and efficient technology for a hydrogen production, when linked with clean-energy systems such as nuclear reactors or solar thermal plants. In the Cu-Cl cycle, water is decomposed thermally into hydrogen and oxygen through a series of intermediate reactions. This paper investigates the thermal scale up analysis of the three phase oxygen production reactor in the Cu-Cl cycle, where the reaction is endothermic and the temperature is about 530 °C. The paper focuses on examining the size and number of oxygen reactors required to provide enough heat input for different rates of hydrogen production. The type of the multiphase reactor used in this paper is the continuous stirred tank reactor (CSTR) that is heated by a half pipe jacket. The thermal resistance of each section in the jacketed reactor system is studied to examine its effect on the heat balance of the reactor. It is found that the dominant contribution to the system thermal resistance is from the reactor wall. In the analysis, the Cu-Cl cycle is assumed to be driven by a nuclear reactor where two types of nuclear reactors are examined as the heat source to the oxygen reactor. These types are the CANDU Super Critical Water Reactor (CANDU-SCWR) and High Temperature Gas Reactor (HTGR). It is concluded that a better heat transfer rate has to be provided for CANDU-SCWR by 3-4 times than HTGR. The effect of the reactor aspect ratio is also examined in this paper and is found that increasing the aspect ratio decreases the number of reactors and the rate of decrease in the number of reactors decreases by increasing the aspect ratio. Finally, a comparison between the results of heat balance and existing results of mass balance is performed and is found that the size of the oxygen reactor is dominated by the heat balance rather than the material balance.

**Keywords:** Clean energy, Cu-Cl cycle, heat transfer, sustainable energy.

## Enhancement of Thermal Performance of Latent Heat Solar Storage System

Rishindra M. Sarviya, Ashish Agrawal

### Abstract:

Solar energy is available abundantly in the world, but it is not continuous and its intensity also varies with time. Due to above reason the acceptability and reliability of solar based thermal system is lower than conventional systems. A properly designed heat storage system increases the reliability of solar thermal systems by bridging the gap between the energy demand and availability. In the present work, two dimensional numerical simulation of the melting of heat storage material is presented in the horizontal annulus of double pipe latent heat storage system. Longitudinal fins were used as a thermal conductivity enhancement. Paraffin wax was used as a heat-storage or phase change material (PCM). Constant wall temperature is applied to heat transfer tube. Presented two-dimensional numerical analysis shows the movement of melting front in the finned cylindrical annulus for analyzing the thermal behavior of the system during melting.

**Keywords:** Latent heat, numerical study, phase change material, solar energy.

## Intelligent Maximum Power Point Tracking Using Fuzzy Logic for Solar Photovoltaic Systems Under Non-Uniform Irradiation Conditions

P. Selvam, S. Senthil Kumar

### Abstract:

Maximum Power Point Tracking (MPPT) has played a vital role to enhance the efficiency of solar photovoltaic (PV) power generation under varying atmospheric temperature and solar irradiation. However, it is hard to track the maximum power point using conventional linear controllers due to the natural inheritance of nonlinear I-V and P-V characteristics of solar PV systems. Fuzzy Logic Controller (FLC) is suitable for nonlinear system control applications and eliminating oscillations, circuit complexities present in the conventional perturb and observation and incremental conductance methods respectively. Hence, in this paper, FLC is proposed for tracking exact MPPT of solar PV power generation system under varying solar irradiation conditions. The effectiveness of the proposed FLC-based MPPT controller is validated through simulation and analysis using MATLAB/Simulink.

**Keywords:** Fuzzy logic controller, maximum power point tracking, photovoltaic.



## **Technical Analysis of Combined Solar Water Heating Systems for Cold Climate Regions**

**Hossein Lotfizadeh, André McDonald, Amit Kumar**

**University of Alberta, Canada**

### **Abstract:**

Renewable energy resources, which can supplement space and water heating for residential buildings, can have a noticeable impact on natural gas consumption and air pollution. This study considers a technical analysis of a combined solar water heating system with evacuated tube solar collectors for different solar coverage, ranging from 20% to 100% of the total roof area of a typical residential building located in Edmonton, Alberta, Canada. The alternative heating systems were conventional (non-condensing) and condensing tankless water heaters and condensing boilers that were coupled to solar water heating systems. The performance of the alternative heating systems was compared to a traditional heating system, consisting of a conventional boiler, applied to houses of various gross floor areas. A comparison among the annual natural gas consumption, carbon dioxide (CO<sub>2</sub>) mitigation, and emissions for the various house sizes indicated that the combined solar heating system can reduce the natural gas consumption and CO<sub>2</sub> emissions, and increase CO<sub>2</sub> mitigation for all the systems that were studied. The results suggest that solar water heating systems are potentially beneficial for residential heating system applications in terms of energy savings and CO<sub>2</sub> mitigation.

**Keywords:** CO<sub>2</sub> emissions, CO<sub>2</sub> mitigation, natural gas consumption, solar water heating system, tankless water heater.

## **An Experimental Study on Evacuated Tube Solar Collector for Steam Generation in India**

Avadhesh Yadav, Anunaya Saraswat

### **Abstract:**

An evacuated tube solar collector is experimentally studied for steam generation. When the solar radiation falls on evacuated tubes, this energy is absorbed by the tubes and transferred to water with natural conduction and convection. A natural circulation of water occurs due to the inclination in tubes and header. In this experimental study, the efficiency of collector has been calculated. The result shows that the collector attains the maximum efficiency of 46.26% during 14:00 to 15:00h. Steam has been generated for two hours from 13:30 to 15:30 h on a winter day. Maximum solar intensity and maximum ambient temperatures are  $795\text{W/m}^2$  and  $19^\circ\text{C}$  respectively on this day.

**Keywords:** Evacuated tube, solar collector, hot water, steam generation.

## Coupling Heat and Mass Transfer for Hydrogen-Assisted Self-Ignition Behaviors of Propane-Air Mixtures in Catalytic Micro-Channels

Junjie Chen, Deguang Xu

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### Abstract:

Transient simulation of the hydrogen-assisted self-ignition of propane-air mixtures were carried out in platinum-coated micro-channels from ambient cold-start conditions, using a two-dimensional model with reduced-order reaction schemes, heat conduction in the solid walls, convection and surface radiation heat transfer. The self-ignition behavior of hydrogen-propane mixed fuel is analyzed and compared with the heated feed case. Simulations indicate that hydrogen can successfully cause self-ignition of propane-air mixtures in catalytic micro-channels with a 0.2 mm gap size, eliminating the need for startup devices. The minimum hydrogen composition for propane self-ignition is found to be in the range of 0.8-2.8% (on a molar basis), and increases with increasing wall thermal conductivity, and decreasing inlet velocity or propane composition. Higher propane-air ratio results in earlier ignition. The ignition characteristics of hydrogen-assisted propane qualitatively resemble the selectively inlet feed preheating mode. Transient response of the mixed hydrogen- propane fuel reveals sequential ignition of propane followed by hydrogen. Front-end propane ignition is observed in all cases. Low wall thermal conductivities cause earlier ignition of the mixed hydrogen-propane fuel, subsequently resulting in low exit temperatures. The transient-state behavior of this micro-scale system is described, and the startup time and minimization of hydrogen usage are discussed.

**Keywords:** Micro-combustion, Self-ignition, Hydrogen addition, Heat transfer, Catalytic combustion, Transient simulation.

## Real-Time Recognition of Dynamic Hand Postures on a Neuromorphic System

Qian Liu, Steve Furber

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### Abstract:

To explore how the brain may recognise objects in its general, accurate and energy-efficient manner, this paper proposes the use of a neuromorphic hardware system formed from a Dynamic Video Sensor (DVS) silicon retina in concert with the SpiNNaker real-time Spiking Neural Network (SNN) simulator. As a first step in the exploration on this platform a recognition system for dynamic hand postures is developed, enabling the study of the methods used in the visual pathways of the brain. Inspired by the behaviours of the primary visual cortex, Convolutional Neural Networks (CNNs) are modelled using both linear perceptrons and spiking Leaky Integrate-and-Fire (LIF) neurons. In this study's largest configuration using these approaches, a network of 74,210 neurons and 15,216,512 synapses is created and operated in real-time using 290 SpiNNaker processor cores in parallel and with 93.0% accuracy. A smaller network using only 1/10th of the resources is also created, again operating in real-time, and it is able to recognise the postures with an accuracy of around 86.4% - only 6.6% lower than the much larger system. The recognition rate of the smaller network developed on this neuromorphic system is sufficient for a successful hand posture recognition system, and demonstrates a much improved cost to performance trade-off in its approach.

**Keywords:** Spiking neural network (SNN), convolutional neural network (CNN), posture recognition, neuromorphic system.

## Optimal Planning of Dispatchable Distributed Generators for Power Loss Reduction in Unbalanced Distribution Networks

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### Abstract:

This paper proposes a novel heuristic algorithm that aims to determine the best size and location of distributed generators in unbalanced distribution networks. The proposed heuristic algorithm can deal with the planning cases where power loss is to be optimized without violating the system practical constraints. The distributed generation units in the proposed algorithm is modeled as voltage controlled node with the flexibility to be converted to constant power factor node in case of reactive power limit violation. The proposed algorithm is implemented in MATLAB and tested on the IEEE 37 -node feeder. The results obtained show the effectiveness of the proposed algorithm.

**Keywords:** Distributed generation, heuristic approach, Optimization, planning.

## Optimal Economic Load Dispatch Using Genetic Algorithms

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### Abstract:

In a practical power system, the power plants are not located at the same distance from the center of loads and their fuel costs are different. Also, under normal operating conditions, the generation capacity is more than the total load demand and losses. Thus, there are many options for scheduling generation. In an interconnected power system, the objective is to find the real and reactive power scheduling of each power plant in such a way as to minimize the operating cost. This means that the generator's real and reactive powers are allowed to vary within certain limits so as to meet a particular load demand with minimum fuel cost. This is called optimal power flow problem. In this paper, Economic Load Dispatch (ELD) of real power generation is considered. Economic Load Dispatch (ELD) is the scheduling of generators to minimize total operating cost of generator units subjected to equality constraint of power balance within the minimum and maximum operating limits of the generating units. In this paper, genetic algorithms are considered. ELD solutions are found by solving the conventional load flow equations while at the same time minimizing the fuel costs.

**Keywords:** ELD, Equality constraints, Genetic algorithms, Strings.

## Empirical Mode Decomposition Based Multiscale Analysis of Physiological Signal

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### Abstract:

We present a refined multiscale Shannon entropy for analyzing electroencephalogram (EEG), which reflects the underlying dynamics of EEG over multiple scales. The rationale behind this method is that neurological signals such as EEG possess distinct dynamics over different spectral modes. To deal with the nonlinear and nonstationary nature of EEG, the recently developed empirical mode decomposition (EMD) is incorporated, allowing a decomposition of EEG into its inherent spectral components, referred to as intrinsic mode functions (IMFs). By calculating the Shannon entropy of IMFs in a time-dependent manner and summing them over adaptive multiple scales, it results in an adaptive subscale entropy measure of EEG. Simulation and experimental results show that the proposed entropy properly reveals the dynamical changes over multiple scales.

**Keywords:** EEG, subscale entropy, Empirical mode decomposition, Intrinsic mode function.

## Experimental Implementation of Model Predictive Control for Permanent Magnet Synchronous Motor

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### Abstract:

Fast speed drives for Permanent Magnet Synchronous Motor (PMSM) is a crucial performance for the electric traction systems. In this paper, PMSM is derived with a Model-based Predictive Control (MPC) technique. Fast speed tracking is achieved through optimization of the DC source utilization using MPC. The technique is based on predicting the optimum voltage vector applied to the driver. Control technique is investigated by comparing to the cascaded PI control based on Space Vector Pulse Width Modulation (SVPWM). MPC and SVPWM-based FOC are implemented with the TMS320F2812 DSP and its power driver circuits. The designed MPC for a PMSM drive is experimentally validated on a laboratory test bench. The performances are compared with those obtained by a conventional PI-based system in order to highlight the improvements, especially regarding speed tracking response.

**Keywords:** Permanent magnet synchronous motor, mode predictive control, optimization of DC source utilization, cascaded PI control, space vector pulse width modulation, TMS320F2812 DSP.



## **Analysis of Direct Current Motor in LabVIEW**

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### **Abstract:**

DC motors have been widely used in the past centuries which are proudly known as the workhorse of industrial systems until the invention of the AC induction motors which makes a huge revolution in industries. Since then, the use of DC machines has been decreased due to enormous factors such as reliability, robustness and complexity but it lost its fame due to the losses. In this paper a new methodology is proposed to construct a DC motor through the simulation in LabVIEW to get an idea about its real time performances, if a change in parameter might have bigger improvement in losses and reliability.

**Keywords:** Direct Current motor, LabVIEW software, modelling and analysis, overall characteristics of Direct Current motor.

## Improvement of Voltage Profile of Grid Integrated Wind Distributed Generation by SVC

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### Abstract:

Due to the continuous increment of the load demand, identification of weaker buses, improvement of voltage profile and power losses in the context of the voltage stability problems has become one of the major concerns for the larger, complex, interconnected power systems. The objective of this paper is to review the impact of Flexible AC Transmission System (FACTS) controller in Wind generators connected electrical network for maintaining voltage stability. Wind energy could be the growing renewable energy due to several advantages. The influence of wind generators on power quality is a significant issue; non uniform power production causes variations in system voltage and frequency. Therefore, wind farm requires high reactive power compensation; the advances in high power semiconducting devices have led to the development of FACTS. The FACTS devices such as for example SVC inject reactive power into the system which helps in maintaining a better voltage profile. The performance is evaluated on an IEEE 14 bus system, two wind generators are connected at low voltage buses to meet the increased load demand and SVC devices are integrated at the buses with wind generators to keep voltage stability. Power flows, nodal voltage magnitudes and angles of the power network are obtained by iterative solutions using MIPOWER.

**Keywords:** Voltage Profile, FACTS Device, SVC, Distributed Generation.

## A Simple Adaptive Atomic Decomposition Voice Activity Detector Implemented by Matching Pursuit

Thomas Bryan, Veton Kepuska, Ivica Kostanic

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### Abstract:

A simple adaptive voice activity detector (VAD) is implemented using Gabor and gammatone atomic decomposition of speech for high Gaussian noise environments. Matching pursuit is used for atomic decomposition, and is shown to achieve optimal speech detection capability at high data compression rates for low signal to noise ratios. The most active dictionary elements found by matching pursuit are used for the signal reconstruction so that the algorithm adapts to the individual speakers dominant time-frequency characteristics. Speech has a high peak to average ratio enabling matching pursuit greedy heuristic of highest inner products to isolate high energy speech components in high noise environments. Gabor and gammatone atoms are both investigated with identical logarithmically spaced center frequencies, and similar bandwidths. The algorithm performs equally well for both Gabor and gammatone atoms with no significant statistical differences. The algorithm achieves 70% accuracy at a 0 dB SNR, 90% accuracy at a 5 dB SNR and 98% accuracy at a 20dB SNR using 30dB SNR as a reference for voice activity.

**Keywords:** Atomic Decomposition, Gabor, Gammatone, Matching Pursuit, Voice Activity Detection.

## Data-driven Multiscale Tsallis Complexity: Application to EEG Analysis

Young-Seok Choi

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### Abstract:

This work proposes a data-driven multiscale based quantitative measures to reveal the underlying complexity of electroencephalogram (EEG), applying to a rodent model of hypoxic-ischemic brain injury and recovery. Motivated by that real EEG recording is nonlinear and non-stationary over different frequencies or scales, there is a need of more suitable approach over the conventional single scale based tools for analyzing the EEG data. Here, we present a new framework of complexity measures considering changing dynamics over multiple oscillatory scales. The proposed multiscale complexity is obtained by calculating entropies of the probability distributions of the intrinsic mode functions extracted by the empirical mode decomposition (EMD) of EEG. To quantify EEG recording of a rat model of hypoxic-ischemic brain injury following cardiac arrest, the multiscale version of Tsallis entropy is examined. To validate the proposed complexity measure, actual EEG recordings from rats ( $n=9$ ) experiencing 7 min cardiac arrest followed by resuscitation were analyzed. Experimental results demonstrate that the use of the multiscale Tsallis entropy leads to better discrimination of the injury levels and improved correlations with the neurological deficit evaluation after 72 hours after cardiac arrest, thus suggesting an effective metric as a prognostic tool.

**Keywords:** Electroencephalogram (EEG), multiscale complexity, empirical mode decomposition, Tsallis entropy.

## Overview of Different Approaches Used in Optimal Operation Control of Hybrid Renewable Energy Systems

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### Abstract:

A hybrid energy system is a combination of renewable energy sources with back up, as well as a storage system used to respond to given load energy requirements. Given that the electrical output of each renewable source is fluctuating with changes in weather conditions, and since the load demand also varies with time; one of the main attributes of hybrid systems is to be able to respond to the load demand at any time by optimally controlling each energy source, storage and back-up system. The induced optimization problem is to compute the optimal operation control of the system with the aim of minimizing operation costs while efficiently and reliably responding to the load energy requirement. Current optimization research and development on hybrid systems are mainly focusing on the sizing aspect. Thus, the aim of this paper is to report on the state-of-the-art of optimal operation control of hybrid renewable energy systems. This paper also discusses different challenges encountered, as well as future developments that can help in improving the optimal operation control of hybrid renewable energy systems.

**Keywords:** Renewable energies, hybrid systems, optimization, operation control.

## A New IFO Estimation Scheme for Orthogonal Frequency Division Multiplexing Systems

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### Abstract:

We address a new integer frequency offset (IFO) estimation scheme with an aid of a pilot for orthogonal frequency division multiplexing systems. After correlating each continual pilot with a predetermined scattered pilot, the correlation value is again correlated to alleviate the influence of the timing offset. From numerical results, it is demonstrated that the influence of the timing offset on the IFO estimation is significantly decreased.

**Keywords:** Estimation, integer frequency offset, OFDM, timing offset.

## Improving Protein-Protein Interaction Prediction by Using Encoding Strategies and Random Indices

Essam Al-Daoud

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### Abstract:

A New features are extracted and compared to improve the prediction of protein-protein interactions. The basic idea is to select and use the best set of features from the Tensor matrices that are produced by the frequency vectors of the protein sequences. Three set of features are compared, the first set is based on the indices that are the most common in the interacting proteins, the second set is based on the indices that tend to be common in the interacting and non-interacting proteins, and the third set is constructed by using random indices. Moreover, three encoding strategies are compared; that are based on the amino asides polarity, structure, and chemical properties. The experimental results indicate that the highest accuracy can be obtained by using random indices with chemical properties encoding strategy and support vector machine.

**Keywords:** protein-protein interactions, random indices, encoding strategies, support vector machine.

## Temperature-dependent Structural Perturbation of Tuna Myoglobin

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### Abstract:

To unveil the mechanism of fast autooxidation of fish myoglobins, the effect of temperature on the structural change of tuna myoglobin was investigated. Purified myoglobin was subjected to preincubation at 5, 20, 50 and 40°C. Overall helical structural decay through thermal treatment up to 95°C was monitored by circular dichroism spectrometry, while the structural changes around the heme pocket was measured by ultraviolet/visible absorption spectrophotometry. As a result, no essential structural change of myoglobin was observed under 30°C, roughly equivalent to their body temperature, but the structure was clearly damaged at 40°C. The Soret band absorption hardly differed irrespective of preincubation temperature, suggesting that the structure around the heme pocket was not perturbed even after thermal treatment.

**Keywords:** denaturation, myoglobin, stability, tuna.



## **An Intelligent System for Knee and Ankle Rehabilitation**

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### **Abstract:**

The paper is concerned with the state examination as well as the problems during the post surgical (orthopedic) rehabilitation of the knee and ankle joint. An observation of the current appliances for a passive rehabilitation devices is presented. The major necessary and basic features of the intelligent rehabilitation devices are considered. An approach for a new intelligent appliance is suggested. The main advantages of the device are: both active as well as passive rehabilitation of the patient based on the human - patient reactions and a real time feedback. The basic components: controller; electrical motor; encoder, force – torque sensor are discussed in details. The main modes of operation of the device are considered.

**Keywords:** Ankle, knee, rehabilitation, computer control.

## **Design the Bowtie Antenna for the Detection of the Tumor in Microwave Tomography**

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### **Abstract:**

Early breast cancer detection is an emerging field of research as it can save the women infected by malignant tumors. Microwave breast imaging is based on the electrical property contrast between healthy and malignant tumor. This contrast can be detected by use of microwave energy with an array of antennas that illuminate the breast through coupling medium and by measuring the scattered fields. In this paper, author has been presented the design and simulation results of the bowtie antenna. This bowtie antenna is designed for the detection of breast cancer detection.

**Keywords:** Breast cancer detection, Microwave Imaging, Tomography.

## **On the Design of Shape Memory Alloy Locking Mechanism: A Novel Solution for Laparoscopic Ligation Process**

Reza Yousefian, Michael A. Kia, Mehrdad Hosseini Zadeh

Reza Yousefian is with the Electrical and Computer Engineering Department, Kettering University, USA.

Michael A. Kia is with the Department of surgery, Michigan State University

Mehrdad H. Zadeh is an assistant professor with the Electrical and Computer Engineering department, Kettering University

### **Abstract:**

The blood ducts must be occluded to avoid loss of blood from vessels in laparoscopic surgeries. This paper presents a locking mechanism to be used in a ligation laparoscopic procedure (LigLAP I), as an alternative solution for a stapling procedure. Currently, stapling devices are being used to occlude vessels. Using these devices may result in some problems, including injury of bile duct, taking up a great deal of space behind the vessel, and bile leak. In this new procedure, a two-layer suture occludes a vessel. A locking mechanism is also required to hold the suture. Since there is a limited space at the device tip, a Shape Memory Alloy (SMA) actuator is used in this mechanism. Suitability for cleanroom applications, small size, and silent performance are among the advantages of SMA actuators in biomedical applications. An experimental study is conducted to examine the function of the locking mechanism. To set up the experiment, a prototype of a locking mechanism is built using nitinol, which is a nickel-titanium shape memory alloy. The locking mechanism successfully locks a polymer suture for all runs of the experiment. In addition, the effects of various surface materials on the applied pulling forces are studied. Various materials are mounted at the mechanism tip to compare the maximum pulling forces applied to the suture for each material. The results show that the various surface materials on the device tip provide large differences in the applied pulling forces.

**Keywords:** Laparoscopic surgery, ligation process, locking mechanism, Shape Memory Alloy (SMA) actuator.

## Why We Are Taller in the Morning than Going to Bed at Night – An *in vivo* and *in vitro* Study

Harcharan Singh Ranu

### **Abstract:**

Intradiscal and intervertebral pressure transducers were developed. They were used to map the pressures in the nucleus and within the annulus of the human spinal segments. Their stressrelaxation were recorded over a period of time for nucleus pressure, applied load, and peripheral strain against time. The results show that for normal discs, pressures in the nucleus are viscoelastic in nature with the applied compressive load. Mechanical strains which develop around the periphery of the vertebral body are also viscoelastic with the applied compressive load. Applied compressive load against time also shows viscoelastic behavior. However, annulus does not respond viscoelastically with the applied load. It showed a linear response to compressive loading.

**Keywords:** Intradiscal pressure transducer (IDPT), intervertebral pressure transducer (IVPT), mechanical strains of vertebral bone, viscoelasticity of human spinal disc.

## **A User - Requirements Approach in Medical Devices Maintenance System Development: A Case Study from an Industry Perspective**

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### **Abstract:**

This paper is a part of research, in which the way the biomedical engineers follow in their work is analyzed. The goal of this paper is to present a method for specification of user requirements in the medical devices maintenance process. Data Gathering Methods, Research Model Phases and Descriptive Analysis is presented. These technology and verification rules can be implemented in Medical devices maintenance management process to the maintenance process.

**Keywords:** Quality Function Deployment (QFD), User - requirements approach.

## Characterization of Lubricity of Mucins at Polymeric Surfaces for Biomedical Applications

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### Abstract:

The lubricating properties of commercially available mucins originating from different animal organs, namely bovine submaxillary mucin (BSM) and porcine gastric mucin (PGM), have been characterized at polymeric surfaces for biomedical applications. Atomic force microscopy (AFM) and pin-on-disk tribometry have been employed for tribological studies at nanoscale and macroscale contacts, respectively. Polystyrene (PS) was employed to represent ‘rigid’ contacts, whereas poly(dimethylsiloxane) (PDMS) was employed to represent ‘soft contacts’. To understand the lubricating properties of mucins in correlation with the coverage on surfaces, adsorption properties of mucins onto the polymeric substrates have been characterized by means of optical waveguide light-mode spectroscopy (OWLS). Both mucins showed facile adsorption onto both polymeric substrates, but the lubricity was highly dependent upon the pH change between 2 and 7.

**Keywords:** Bovine submaxillary mucin (BSM), Porcine Gastric Mucin (PGM), lubricity, biomedical.

## **Influence of Microstructural Features on Wear Resistance of Biomedical Titanium Materials**

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### **Abstract:**

The field of biomedical materials plays an imperative requisite and a critical role in manufacturing a variety of biological artificial replacements in a modern world. Recently, titanium (Ti) materials are being used as biomaterials because of their superior corrosion resistance and tremendous specific strength, free- allergic problems and the greatest biocompatibility compared to other competing biomaterials such as stainless steel, Co-Cr alloys, ceramics, polymers, and composite materials. However, regardless of these excellent performance properties, Implantable Ti materials have poor shear strength and wear resistance which limited their applications as biomaterials. Even though the wear properties of Ti alloys has revealed some improvements, the crucial effectiveness of biomedical Ti alloys as wear components requires a comprehensive deep understanding of the wear reasons, mechanisms, and techniques that can be used to improve wear behavior. This review examines current information on the effect of thermal and thermomechanical processing of implantable Ti materials on the long-term prosthetic requirement which related with wear behavior. This paper focuses mainly on the evolution, evaluation and development of effective microstructural features that can improve wear properties of bio grade Ti materials using thermal and thermomechanical treatments.

**Keywords:** Wear Resistance, Heat Treatment, Thermomechanical Processing, Biomedical Titanium Materials.

## **MiRNAs as Regulators of Tumour Suppressor Expression**

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### **Abstract:**

Tumour suppressors are key participants in the prevention of cancer. Regulation of their expression through miRNAs is important for comprehensive translation inhibition of tumour suppressors and elucidation of carcinogenesis mechanisms. We studied the possibility of 1521 miRNAs to bind with 873 mRNAs of human tumour suppressors using RNAHybrid 2.1 and ERNAhybrid programmes. Only 978 miRNAs were found to be translational regulators of 812 mRNAs, and 61 mRNAs did not have any miRNA binding sites. Additionally, 45.9% of all miRNA binding sites were located in coding sequences (CDSs), 33.8% were located in 3' untranslated region (UTR), and 20.3% were located in the 5'UTR. MiRNAs binding with more than 50 target mRNAs and mRNAs binding with several miRNAs were selected. Hsa-miR-5096 had 15 perfectly complementary binding sites with mRNAs of 14 tumour suppressors. These newly identified miRNA binding sites can be used in the development of medicines (anti-sense therapies) for cancer treatment.

**Keywords:** Exonic miRNA, intergenic miRNA, intronic miRNA, tumor suppressor.



## Clinical Comparative Study Comparing Efficacy of Intrathecal Fentanyl and Magnesium as an Adjuvant to Hyperbaric Bupivacaine in Mild Pre-Eclamptic Patients Undergoing Caesarean Section

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### Abstract:

Adequate analgesia following caesarean section decreases morbidity, hastens ambulation, improves patient outcome and facilitates care of the newborn. Intrathecal magnesium, an NMDA antagonist, has been shown to prolong analgesia without significant side effects in healthy parturients. The aim of this study was to evaluate the onset and duration of sensory and motor block, hemodynamic effect, postoperative analgesia, and adverse effects of magnesium or fentanyl given intrathecally with hyperbaric 0.5% bupivacaine in patients with mild preeclampsia undergoing caesarean section. Sixty women with mild preeclampsia undergoing elective caesarean section were included in a prospective, double blind, controlled trial. Patients were randomly assigned to receive spinal anesthesia with 2 mL 0.5% hyperbaric bupivacaine with 12.5 µg fentanyl (group F) or 0.1 ml of 50% magnesium sulphate (50 mg) (group M) with 0.15ml preservative free distilled water. Onset, duration and recovery of sensory and motor block, time to maximum sensory block, duration of spinal anaesthesia and postoperative analgesic requirements were studied. Statistical comparison was carried out using the Chi-square or Fisher's exact tests and Independent Student's t-test where appropriate. The onset of both sensory and motor block was slower in the magnesium group. The duration of spinal anaesthesia (246 vs. 284) and motor block (186.3 vs. 210) were significantly longer in the magnesium group. Total analgesic top up requirement was less in group M. Hemodynamic parameters were similar in both the groups. Intrathecal magnesium caused minimal side effects. Since Fentanyl and other opioid congeners are not available throughout the country easily, magnesium with its easy availability and less side effect profile can be a cost effective alternative to fentanyl in managing pregnancy induced hypertension (PIH) patients given along with Bupivacaine intrathecally in caesarean section.

**Keywords:** Analgesia, magnesium, preeclampsia, spinal anaesthes

## Effect of Muscle Energy Technique on Anterior Pelvic Tilt in Lumbar Spondylosis Patients

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### Abstract:

**Background:** Muscle Energy Techniques (MET) have been widely used by manual therapists over the past years, but still limited research validated its use and there was limited evidence to substantiate the theories used to explain its effects. **Objective:** To investigate the effect of Muscle Energy Technique (MET) on anterior pelvic tilt in patients with lumbar spondylosis. **Design:** Randomized controlled trial. **Subjects:** Thirty patients with anterior pelvic tilt from both sexes were involved, aged between 35 to 50 years old and they were divided into MET and control groups with 15 patients in each. **Methods:** All patients received 3 sessions/week for 4 weeks where the study group received MET, Ultrasound and Infrared, and the control group received U.S and I.R only. Pelvic angle was measured by palpation meter, pain severity by the visual analogue scale and functional disabilities by the Oswestry disability index. **Results:** Both groups showed significant improvement in all measured variables. The MET group was significantly better than the control group in pelvic angle, pain severity, and functional disability as p-value were (0.001, 0.0001, 0.0001) respectively. **Conclusion and implication:** the study group fulfilled greater improvement in all measured variables than the control group which implies that application of MET in combination with U.S and I.R were more effective in improving pelvic tilting angle, pain severity and functional disabilities than using electrotherapy only.

**Keywords:** Anterior pelvic tilt, lumbar spondylosis, muscle energy technique exercise, palpation meter.

## The Oxidative Damage Marker for Sodium Formate Exposure on Lymphocytes

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### Abstract:

Sodium formate is the chemical substance used for food additive. Catalase is the important antioxidative enzyme in protecting the cell from oxidative damage by reactive oxygen species (ROS). The resultant level of oxidative stress in sodium formate-treated lymphocytes was investigated. The sodium formate concentrations of 0.05, 0.1, 0.2, 0.4 and 0.6 mg/mL were treated in human lymphocytes for 12 hours. After 12 treated hours, catalase activity change was measured in sodium formate-treated lymphocytes. The results showed that the sodium formate concentrations of 0.4 and 0.6 mg/mL significantly decreased catalase activities in lymphocytes ( $P < 0.05$ ). The change of catalase activity in sodium formate-treated lymphocytes may be the oxidative damage marker for detect sodium formate exposure in human.

**Keywords:** Sodium formate, catalase activity, oxidative damage marker, toxicity.

## Association of Overweight and Obesity with Breast Cancer

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### Abstract:

Breast cancer is in the top rate of cancer. We analyzed the prevalence of obesity and its association with breast cancer and finally we reviewed 25 article that 320 patient and 320 control which enrolled to our study. The distribution of breast cancer patients and controls with respect to their anthropometric indices in patients with higher weight, which was statistically significant ( $60.2 \pm 10.2$  kg) compared with control group ( $56.1 \pm 11.3$  kg). The body mass index of patients was ( $26.06 \pm 3.42$ ) and significantly higher than the control group ( $24.1 \pm 1.7$ ). Obesity leads to increased levels of adipose tissue in the body that can be stored toxins and carcinogens to produce a continuous supply. Due to the high level of fat and the role of estrogen in a woman which is endogenous estrogen of the tumor and regulates the activities of growth steroids, obesity has confirmed as a risk factor for breast cancer. Our study and other studies have shown that obesity is a risk factor for breast cancer. And it can be prevented with a weight loss intervention for breast cancer in the future.

**Keywords:** Breast cancer, review study, obesity, overweight.

## **Effects of Synchronous Music on Gymnastics' Motor Skills Performance among Undergraduate Female Students in Physical Education College**

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### **Abstract:**

The present study aimed to investigate the effect of synchronous music in Gymnastics' motor skill performance among undergraduate female students in physical education college at Basra University. The researcher used experimental design. 20 female students of physical education divided equally into two groups, (10) experimental group with music, (10) control group without music. All participants complete 6 weeks in testing. Data analysis based on T-test shows significant difference at ( $\alpha = 0.05$ ) in all skills level between experimental and control groups in favor of experimental group. Results of this study contribute to developing the role of synchronous music in improving gymnastic skills performance.

**Keywords:** Performance, motor skill, music, synchronous.

## **Influence of Bilateral and Unilateral Flatfoot on Pelvic Alignment**

Mohamed Taher Eldesoky, Enas Elsayed Abutaleb

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### **Abstract:**

**Background:** The change in foot posture can possibly generate changes in the pelvic alignment. There is still a lack of evidence about the effects of bilateral and unilateral flatfoot on possible changes in pelvic alignment. The purpose of this study was to investigate the effect of flatfoot on the sagittal and frontal planes of pelvic postures. **Materials and Methods:** 56 subjects, aged 18–40 years, were assigned into three groups: 20 healthy subjects, 19 subjects with bilateral flexible second-degree flat foot, and 17 subjects with unilateral flexible second-degree flat foot. 3D assessment of the pelvis using the formetric-II device was used to evaluate pelvic alignment in the frontal and sagittal planes by measuring pelvic inclination and pelvic tilt angles. **Results:** ANOVA test with LSD test were used for statistical analysis. Both Unilateral and bilateral second degree flatfoot produced significant ( $P<0.05$ ) pelvic anteversion, in comparison to the healthy subjects ( $P<0.05$ ). But the bilateral flatfoot subjects seemed to have more anteversion than the unilateral subjects. Unilateral flatfoot caused a significant ( $P<0.05$ ) lateral pelvic tilt in the direction of the affected side in comparison to the healthy and bilateral flatfoot subjects. **Conclusion:** The bilateral and unilateral second degree flatfoot changes pelvic alignment. Both of them lead to increases of pelvic anteversion while the unilateral one caused lateral pelvic tilt toward the affected side. Thus, foot posture should be considered when assessing patients with pelvic misalignment and disorders.

**Keywords:** Bilateral flatfoot, foot posture, pelvic alignment, unilateral flatfoot.

## **Protective Effect of Thymoquinone against Nephrotoxicity Induced by Cadmium in Rats**

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### **Abstract:**

The present study investigated the protective effect of thymoquinone (TQ), against cadmium-induced kidney injury in rats. Cadmium chloride (1.2 mg Cd/kg/day, s.c.), was given for nine weeks. TQ treatment (40 mg/kg/day, p.o.) started on the same day of cadmium administration and continued for nine weeks. TQ significantly decreased serum creatinine, renal malondialdehyde and nitric oxide, and significantly increased renal reduced glutathione in rats received cadmium. Histopathological examination showed that TQ markedly minimized renal tissue damage induced by cadmium. Immunohistochemical analysis revealed that TQ markedly decreased the cadmium-induced expression of inducible nitric oxide synthase, tumor necrosis factor- $\alpha$ , cyclooxygenase-2, and caspase-3 in renal tissue. It was concluded that TQ significantly protected against cadmium nephrotoxicity in rats, through its antioxidant, antiinflammatory, and antiapoptotic actions.

**Keywords:** Thymoquinone, cadmium, kidney, rats.

## Body Composition Analysis of University Students by Anthropometry and Bioelectrical Impedance Analysis

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### Abstract:

**Background:** Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and 35.8 million (2.3%) of global DALYs are caused by overweight or obesity. Obesity is acknowledged as one of the burning public health problems reducing life expectancy and quality of life. The body composition analysis of the university population is essential in assessing the nutritional status, as well as the risk of developing diseases associated with abnormal body fat content so as to make nutritional recommendations. **Objectives:** The main aim was to determine the prevalence of obesity and overweight in University students using Anthropometric analysis and BIA methods. **Material and Methods:** In this cross-sectional study, 283 university students participated. The body composition analysis was undertaken by using mainly: i) Anthropometric Measurement: Height, Weight, BMI, waist circumference, hip circumference and skin fold thickness, ii) Bio-electrical impedance was used for analysis of body fat mass, fat percent and visceral fat which was measured by Tanita SC-330P Professional Body Composition Analyzer. The data so collected were compiled in MS Excel and analyzed for males and females using SPSS 16. **Results and Discussion:** The mean age of the male (n=153) studied subjects was  $25.37 \pm 2.39$  years and females (n=130) was  $22.53 \pm 2.31$ . The data of BIA revealed very high mean fat per cent of the female subjects i.e.  $30.3 \pm 6.5$  per cent whereas mean fat per cent of the male subjects was  $15.60 \pm 6.02$  per cent indicating a normal body fat range. The findings showed high visceral fat of both males ( $12.92 \pm 3.02$ ) and females ( $16.86 \pm 4.98$ ). BMI, BF% and WHR were higher among females, and BMI was higher among males. The most evident correlation was verified between BF% and WHR for female students ( $r=0.902$ ;  $p<0.001$ ). The correlation of BFM and BF% with thickness of triceps, sub scapular and abdominal skin folds and BMI was significant ( $P<0.001$ ). **Conclusion:** The studied data made it obvious that there is a need to initiate lifestyle changing strategies especially for adult females and encourage them to improve their dietary intake to prevent incidence of noncommunicable diseases due to obesity and high fat percentage.

**Keywords:** Anthropometry, bioelectrical impedance, body fat percentage, obesity.



## Phthalate Exposure among Roma Population in Slovakia

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### Abstract:

Phthalates are ubiquitous environmental pollutants well known because of their endocrine disrupting activity in human organism. The aim of our study was, by biological monitoring, investigate exposure to phthalates of Roma ethnicity group i.e. children and adults from 5 families (n=29, average age  $11.8 \pm 7.6$  years) living in western Slovakia. Additionally, we analysed some associations between anthropometric measures, questionnaire data i.e. socio-economic status, eating and drinking habits, practise of personal care products and household conditions in comparison with concentrations of phthalate metabolites. We used for analysis of urine samples high performance liquid chromatography and tandem mass spectrometry (HPLC-MS/MS) to determine concentrations of phthalate metabolites monoethyl phthalate (MEP), mono-n-butyl phthalate (MnBP), mono-iso-butyl phthalate (MiBP), mono(2-ethyl-5-hydroxyhexyl) phthalate (5OH-MEHP), mono(2-ethyl-5-oxohexyl) phthalate (5oxo-MEHP) and mono(2-ethylhexyl) phthalate (MEHP). Our results indicate that ethnicity, lower socioeconomic status and different housing conditions in Roma population can affect urinary concentration of phthalate metabolites.

**Keywords:** Biomonitoring, ethnicity, human exposure, phthalate metabolites.

## Relevance of the Variation in the Angulation of Palatal Throat Form to the Orientation of the Occlusal Plane: A Cephalometric Study

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### Abstract:

The posterior reference for the ala tragal line is a cause of confusion, with different authors suggesting different locations as to the superior, middle or inferior part of the tragus. This study was conducted on 200 subjects to evaluate if any correlation exists between the variation of angulation of palatal throat form and the relative parallelism of occlusal plane to ala-tragal line at different tragal levels. A custom made Occlusal Plane Analyzer was used to check the parallelism between the ala-tragal line and occlusal plane. A lateral cephalogram was shot for each subject to measure the angulation of the palatal throat form. Fisher's exact test was used to evaluate the correlation between the angulation of the palatal throat form and the relative parallelism of occlusal plane to the ala tragal line. Also, a classification was formulated for the palatal throat form, based on confidence interval. From the results of the study, the inferior part, middle part and superior part of the tragus were seen as the reference points in 49.5%, 32% and 18.5% of the subjects respectively. Class I palatal throat form (41degree-50 degree), Class II palatal throat form (below 41 degree) and Class III palatal throat form (above 50 degree) were seen in 42%, 43% and 15% of the subjects respectively. It was also concluded that there is no significant correlation between the variation in the angulations of the palatal throat form and the relative parallelism of occlusal plane to the ala-tragal line.

**Keywords:** Ala-tragal line, occlusal plane, palatal throat form, cephalometry.

## Neurogenic Potential of *Clitoria ternatea* Aqueous Root Extract–A Basis for Enhancing Learning and Memory

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### Abstract:

The neurogenic potential of many herbal extracts used in Indian medicine is hitherto unknown. Extracts derived from *Clitoria ternatea* Linn have been used in Indian Ayurvedic system of medicine as an ingredient of “Medhya rasayana”, consumed for improving memory and longevity in humans and also in treatment of various neurological disorders. Our earlier experimental studies with oral intubation of *Clitoria ternatea* aqueous root extract (CTR) had shown significant enhancement of learning and memory in postnatal and young adult Wistar rats. The present study was designed to elucidate the in vitro effects of 200ng/ml of CTR on proliferation, differentiation and growth of anterior subventricular zone neural stem cells (aSVZ NSC-s) derived from prenatal and postnatal rat pups. Results show significant increase in proliferation and growth of neurospheres and increase in the yield of differentiated neurons of aSVZ neural precursor cells (aSVZNPC-s) at 7 days in vitro when treated with 200ng/ml of CTR as compared to age matched control. Results indicate that CTR has growth promoting neurogenic effect on aSVZ neural stem cells and their survival similar to neurotrophic factors like Survivin, Neuregulin 1, FGF-2, BDNF possibly the basis for enhanced learning and memory.

**Keywords:** Anterior subventricular zone (aSVZ) neural stemcell, *Clitoria ternatea*, Learning and memory, Neurogenesis.

## Comparison between Antibacterial Effects of Ethanolic and Isopropyl: Hexan (7:3) Extracts of *Zingiber officinale* Rose

Tahereh Naji, Mahsa Jassemi

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### Abstract:

In this investigation, the antibacterial effects of ethanolic and 7:3 isopropyl –hexane mixture extracts of *Zingiber officinale* were evaluated against three Gram positive bacteria, *B. cereus*, *S. epidermidis*, *S. aureus* and three Gram negative bacteria, *E. coli*, *K. pneumoniae* and *P. aeruginosa*. Utilizing paper disk diffusion and well methods in-vitro, MIC and MBC were determined by macrodilution. The results showed that ethanolic rhizome extract of ginger had significantly active than Isopropyl –hexane extract. Further work needs to be done in these extracts including fractionation to isolate active constituents and subsequent pharmacological evaluation.

**Keywords:** Antibacterial, Medicinal plant extract, *Zingiber officinale*.

## Performance Evaluation of Faculties of Islamic Azad University of Zahedan Branch Based-On Two-Component DEA

Ali Payan

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### Abstract:

The aim of this paper is to evaluate the performance of the faculties of Islamic Azad University of Zahedan Branch based on two-component (teaching and research) decision making units (DMUs) in data envelopment analysis (DEA). Nowadays it is obvious that most of the systems as DMUs do not act as a simple inputoutput structure. Instead, if they have been studied more delicately, they include network structure. University is such a network in which different sections i.e. teaching, research, students and office work as a parallel structure. They consume some inputs of university commonly and some others individually. Then, they produce both dependent and independent outputs. These DMUs are called two-component DMUs with network structure. In this paper, performance of the faculties of Zahedan branch is calculated by using relative efficiency model and also, a formula to compute relative efficiencies teaching and research components based on DEA are offered.

**Keywords:** Data envelopment analysis, faculties of Islamic Azad University of Zahedan branch, two-component DMUs.

## **In vitro Anti-tubercular Screening of Newly Synthesized Benzimidazole Derivatives**

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### **Abstract:**

A series of 1-(1H-benzimidazol-2-yl)-3-(substituted phenyl)-2-propen-1-one were allowed to react with hydrazine hydrate and phenyl hydrazine in submitted reactions to get pyrazoline and phenyl pyrazoline derivatives. All the compounds entered for screening at the Tuberculosis Antimicrobial Acquisition and Coordinating Facility (TAACF) for their in vitro antibacterial activity against Mycobacterium tuberculosis H37Rv strain (ATCC 27294) using Microplate Alamar Blue Assay (MABA) susceptibility test. The results expressed as MIC (minimum inhibitory concentration) in  $\mu\text{g/mL}$ . Among the fifteen compounds, eight compounds were found to have MIC values less than 10  $\mu\text{g/mL}$ . These were subjected for cytotoxicity assay in VERO cells to determine CC50 (cytotoxic concentration 50%) values and finally SI (Selectivity Index) were calculated. Compound (XV) 2-[5-(4-fluorophenyl)-1-phenyl-4,5-dihydro-1H-3-pyrazolyl]-1Hbenzimidazole was considered the best candidate of the series that could be a good starting point to develop new lead compounds in the fight against tuberculosis.

**Keywords:** anti-tubercular activity, benzimidazole, pyrazoline.

## Formulation and Evaluation of Vaginal Suppositories Containing *Lactobacillus*

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### Abstract:

The objective of this study was to develop vaginal suppository containing *Lactobacillus*. Four kinds of vaginal suppositories containing *Lactobacillus paracasei* HL32 were formulated: 1) a conventional suppository with Witepsol H-15 as a base, 2) a conventional suppository with mixed polyethylene glycols (PEGs) as a base, 3) a hollow-type suppository with Witepsol H-15 as a base and 4) a hollow-type suppository with mixed PEGs as a base. The release studies demonstrated that the hollow-type suppository with mixed PEGs as the base gave the highest release of *L. paracasei* HL32 and was microbiological stable after storage at 2- 8°C over the period of 3 months.

**Keywords:** *Lactobacillus paracasei* HL32, vaginal suppository, release study, hollow-type, viability.

## **Pentachlorophenol Removal via Adsorption and Biodegradation**

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### **Abstract:**

Removal of PCP by a system combining biodegradation by biofilm and adsorption was investigated here. Three studies were conducted employing batch tests, sequencing batch reactor (SBR) and continuous biofilm activated carbon column reactor (BACCOR). The combination of biofilm-GAC batch process removed about 30% more PCP than GAC adsorption alone. For the SBR processes, both the suspended and attached biomass could remove more than 90% of the PCP after acclimatisation. BACCOR was able to remove more than 98% of PCP-Na at concentrations ranging from 10 to 100 mg/L, at empty bed contact time (EBCT) ranging from 0.75 to 4 hours. Pure and mixed cultures from BACCOR were tested for use of PCP as sole carbon and energy source under aerobic conditions. The isolates were able to degrade up to 42% of PCP under aerobic conditions in pure cultures. However, mixed cultures were found able to degrade more than 99% PCP indicating interdependence of species.

**Keywords:** Adsorption, biodegradation, identification, isolated bacteria, pentachlorophenol.



## **Packaging the Alkaloids of Cinchona Bark in Combination with Etoposide in Polymeric Micelles Nanoparticles**

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### **Abstract:**

Today, cancer remains one of the major diseases that lead to death. The main obstacle in chemotherapy as a main cancer treatment is the toxicity to normal cells due to Multidrug Resistance (MDR) after the use of anticancer drugs. Proposed solution to overcome this problem is the use of MDR efflux inhibitor of cinchona alkaloids which is delivered together with anticancer drugs encapsulated in the form of polymeric nanoparticles. The particles were prepared by the hydration method. The characterization of nanoparticles was particle size, zeta potential, entrapment efficiency and in vitro drug release. Combination nanoparticle size ranged 29-45 nm with a neutral surface charge. Entrapment efficiency was above 87% for the use of quinine, quinidine or cinchonidine in combination with etoposide. The release test results exhibited that the cinchona alkaloids release faster than that of etoposide. Collectively, cinchona alkaloids can be packaged along with etoposide in nanomicelles for better cancer therapy.

**Keywords:** Cinchona alkaloids, etoposide, MDR efflux inhibitor, polymeric nanomicelles.

## Comparative Evaluation of the Biopharmaceutical and Chemical Equivalence of the Some Commercial Brands of Paracetamol Tablets

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### Abstract:

Acetaminophen (Paracetamol) tablets are popular OTC products among patients as analgesics and antipyretics. Paracetamol is marketed by a lot of suppliers around the world. The aim of the present investigation was to compare between many types of paracetamol tablets obtained from different suppliers (six brands produced by different pharmaceutical companies in middle east countries, and Panadol® manufactured in Ireland), by different quality control tests according to USP pharmacopeia. Using Non official tests-hardness and friability; official tests-disintegration, dissolution, and drug content. Additionally, evaluate the influence of temperatures 4°C, 25°C and 40°C at 75% relative humidity on the stability of the same brands in their original packaging has been conducted for two months. The results revealed that all paracetamol tablet brands complied with the official USP specifications. In conclusion, paracetamol tablets preferred to be stored at 25°C. All the tested brands being biopharmaceutically and chemically equivalent.

**Keywords:** Non official tests-hardness and friability, official tests –disintegration, dissolution, and drug content.

## Data Mining Classification Methods Applied in Drug Design

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### Abstract:

Data mining incorporates a group of statistical methods used to analyze a set of information, or a data set. It operates with models and algorithms, which are powerful tools with the great potential. They can help people to understand the patterns in certain chunk of information so it is obvious that the data mining tools have a wide area of applications. For example in the theoretical chemistry data mining tools can be used to predict molecule properties or improve computer-assisted drug design. Classification analysis is one of the major data mining methodologies. The aim of the contribution is to create a classification model, which would be able to deal with a huge data set with high accuracy. For this purpose logistic regression, Bayesian logistic regression and random forest models were built using R software. The Bayesian logistic regression in Latent GOLD software was created as well. These classification methods belong to supervised learning methods. It was necessary to reduce data matrix dimension before construct models and thus the factor analysis (FA) was used. Those models were applied to predict the biological activity of molecules, potential new drug candidates.

**Keywords:** data mining, classification, drug design, QSAR

## **Salbutamol Sulphate-Ethylcellulose Tableted Microcapsules: Pharmacokinetic Study using Convolution Approach**

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Kalsoom Farzana was with Department of Pharmacy, Women Institute of Learning, Abbottabad 22060, Pakistan

### **Abstract:**

The aim of this article is to narrate the utility of novel simulation approach i.e. convolution method to predict blood concentration of drug utilizing dissolution data of salbutamol sulphate microparticulate formulations with different release patterns (1:1, 1:2 and 1:3, drug:polymer). Dissolution apparatus II USP 2007 and 900 ml double distilled water stirred at 50 rpm was employed for dissolution analysis. From dissolution data, blood drug concentration was determined, and in return predicted blood drug concentration data was used to calculate the pharmacokinetic parameters i.e.  $C_{max}$ ,  $T_{max}$ , and AUC. Convolution is a good biwaiver technique; however its better utility needs its application in the conditions where biorelevant dissolution media are used.

**Keywords:** Convolution, Dissolution, Pharmacokinetics, Salbutamol sulphate

## **Analysis of Different Designed Landing Gears for a Light Aircraft**

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### **Abstract:**

The design of a landing gear is one of the fundamental aspects of aircraft design. The need for a light weight, high strength, and stiffness characteristics coupled with techno economic feasibility are a key to the acceptability of any landing gear construction. In this paper, an approach for analyzing two different designed landing gears for an unmanned aircraft vehicle (UAV) using advanced CAE techniques will be applied. Different landing conditions have been considered for both models. The maximum principle stresses for each model along with the factor of safety are calculated for every loading condition. A conclusion is drawing about better geometry.

**Keywords:** Landing Gear, Model, Finite Element Analysis, Aircraft.

## Conceptual Design of an Airfoil with Temperature-Responsive Polymer

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### Abstract:

The accelerated growth in aircraft industries desire effectual schemes, programs, innovative designs of advanced systems and facilities to accomplish the augmenting need for home-free air transportation. In this paper, a contemporary conceptual design of a cambered airfoil has been proposed in order to providing augmented effective lift force relative to the airplane, and to eliminating drawbacks and limitations of an airfoil in a commercial airplane by using a kind of smart materials. This invention of an unsymmetrical airfoil structure utilizes the amplified air momentum around the airfoil and increased camber length to providing improved aircraft performance and assist to enhancing the reliability of the aircraft components. Moreover, this conjectured design helps to reducing airplane weight and total drag.

**Keywords:** Collector electrode, corona electrode, Temperature responsive polymer and ultra-faims microchip.

## Concentrated Solar Power Utilization in Space Vehicles Propulsion and Power Generation

Maged A. Mossallam

### Abstract:

The objective from this paper is to design a solar thermal engine for space vehicles orbital control and electricity generation. A computational model is developed for the prediction of the solar thermal engine performance for different design parameters and conditions in order to enhance the engine efficiency. The engine is divided into two main subsystems. First, the concentrator dish which receives solar energy from the sun and reflects them to the cavity receiver. The second one is the cavity receiver which receives the heat flux reflected from the concentrator and transfers heat to the fluid passing over. Other subsystems depend on the application required from the engine. For thrust application, a nozzle is introduced to the system for the fluid to expand and produce thrust. Hydrogen is preferred as a working fluid in the thruster application. Results model developed is used to determine the thrust for a concentrator dish 4 meters in diameter (provides 10 kW of energy), focusing solar energy to a 10 cm aperture diameter cavity receiver. The cavity receiver outer length is 50 cm and the internal cavity is 47 cm in length. The suggested design material of the internal cavity is tungsten to withstand high temperature. The thermal model and analysis shows that the hydrogen temperature at the plenum reaches 2000oK after about 250 seconds for hot start operation for a flow rate of 0.1 g/sec. Using solar thermal engine as an electricity generation device on earth is also discussed. In this case a compressor and turbine are used to convert the heat gained by the working fluid (air) into mechanical power. This mechanical power can be converted into electrical power by using a generator.

**Keywords:** Concentrated Solar Energy, Orbital Control, Power Generation, Solar Thermal Engine, Space Vehicles Propulsion

## Optimization of Multifunctional Battery Structures for Mars

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### Abstract:

Multifunctional structures are a potentially disruptive technology that allows for significant mass savings on spacecraft. The specific concept addressed herein is that of a multifunctional power structure. In this paper, a parametric optimisation of the design of such a structure that uses commercially available battery cells is presented. Using numerical modelling, it was found that there exists several trade-offs about the conflict between the capacity of the panel and its mechanical properties. It was found that there is no universal optimal location for the cells. Placing them close to the mechanical interfaces increases loading in the mechanically weak cells whereas placing them at the centre of the panel increases the stress in the panel and reduces the stiffness of the structure.

**Keywords:** Design Optimization, Multifunctional Structures, Power Storage.



## **Modeling and Control of a Quadrotor UAV with Aerodynamic Concepts**

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### **Abstract:**

This paper presents preliminary results on modeling and control of a quadrotor UAV. With aerodynamic concepts, a mathematical model is firstly proposed to describe the dynamics of the quadrotor UAV. Parameters of this model are identified by experiments with Matlab Identify Toolbox. A group of PID controllers are then designed based on the developed model. To verify the developed model and controllers, simulations and experiments for altitude control, position control and trajectory tracking are carried out. The results show that the quadrotor UAV well follows the referenced commands, which clearly demonstrates the effectiveness of the proposed approach.

**Keywords:** Quadrotor UAV, Modeling, Control, Aerodynamics, System Identification.

## Topology Optimization of Aircraft Fuselage Structure

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### Abstract:

Topology Optimization is defined as the method of determining optimal distribution of material for the assumed design space with functionality, loads and boundary conditions [1]. Topology optimization can be used to optimize shape for the purposes of weight reduction, minimizing material requirements or selecting cost effective materials [2]. Topology optimization has been implemented through the use of finite element methods for the analysis, and optimization techniques based on the method of moving asymptotes, genetic algorithms, optimality criteria method, level sets and topological derivatives. Case study of Typical "Fuselage design" is considered for this paper to explain the benefits of Topology Optimization in the design cycle. A cylindrical shell is assumed as the design space and aerospace standard pay loads were applied on the fuselage with wing attachments as constraints. Then topological optimization is done using Finite Element (FE) based software. This optimization results in the structural concept design which satisfies all the design constraints using minimum material.

**Keywords:** Fuselage, Topology optimization, payloads, design optimization, Finite Element Analysis.

## Terrain Evaluation Method for Hexapod Robot

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### Abstract:

In this paper a simple terrain evaluation method for hexapod robot is introduced. This method is based on feet coordinate evaluation when all are on the ground. Depending on the feet coordinate differences the local terrain evaluation is possible. Terrain evaluation is necessary for right gait selection and/or body position correction. For terrain roughness evaluation three planes are plotted: two of them as definition points use opposite feet coordinates, third coincides with the robot body plane. The leaning angle of body plane is evaluated measuring gravity force using three-axis accelerometer. Terrain roughness evaluation method is based on angle estimation between normal vectors of these planes. Aim of this work is to present a simple method for embedded robot controller, allowing to find the best further movement settings.

**Keywords:** Hexapod robot, pose estimation, terrain evaluation, terrain roughness.

## Small Satellite Modelling and Attitude Control Using Fuzzy Logic

Amirhossein Asadabadi, Amir Anvar

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### Abstract:

Small satellites have become increasingly popular recently as a means of providing educational institutes with the chance to design, construct, and test their spacecraft from beginning to the possible launch due to the low launching cost. This approach is remarkably cost saving because of the weight and size reduction of such satellites. Weight reduction could be realised by utilising electromagnetic coils solely, instead of different types of actuators. This paper describes the restrictions of using only “Electromagnetic” actuation for 3D stabilisation and how to make the magnetorquer based attitude control feasible using Fuzzy Logic Control (FLC). The design is developed to stabilize the spacecraft against gravity gradient disturbances with a three-axis stabilizing capability.

**Keywords:** Fuzzy, Attitude Control, Small Satellite, Fuzzy Logic Control, Electromagnetic, Magnetic Control.

## **Advantages of Composite Materials in Aircraft Structures**

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### **Abstract:**

In the competitive environment of aircraft industries it becomes absolutely necessary to improve the efficiency, performance of the aircrafts to reduce the development and operating costs considerably, in order to capitalize the market. An important contribution to improve the efficiency and performance can be achieved by decreasing the aircraft weight through considerable usage of composite materials in primary aircraft structures. In this study, a type of composite material called Carbon Fiber Reinforced Plastic (CFRP) is explored for the usage is aircraft skin panels. Even though there were plenty of studies and research has been already carried out, here a practical example of an aircraft skin panel is taken and substantiated the benefits of composites material usage over the metallic skin panel. A crown skin panel of a commercial aircraft is designed using both metal and composite materials. Stress analysis has been carried out for both and margin of safety is estimated for the critical load cases. The skin panels are compared for manufacturing, tooling, assembly and cost parameters. Detail step by step comparison between metal and composite constructions are studied and results are tabulated for better understanding.

**Keywords:** Composites, CFRP, Aircraft Structure, Skin panel.

## Characterization of Electrohydrodynamic Force on Dielectric-Barrier-Discharge Plasma Actuator Using Fluid Simulation

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### Abstract:

Wall-surface jet induced by the dielectric barrier discharge (DBD) has been proposed as an actuator for active flow control in aerodynamic applications. Discharge plasma evolution of the DBD plasma actuator was simulated based on a simple fluid model, in which the electron, one type of positive ion and negative ion were taken into account. Two-dimensional simulation was conducted, and the results are in agreement with the insights obtained from experimental studies. The simulation results indicate that the discharge mode changes depending on applied voltage slope; when the applied voltage is positive-going with high applied voltage slope, the corona-type discharge mode turns into the streamer-type discharge mode and the threshold voltage slope is around 300 kV/ms in this simulation. The characteristics of the electrohydrodynamic (EHD) force, which is the source of the wall-surface jet, also change depending on the discharge mode; the tentative peak value of the EHD force during the positive-going voltage phase is saturated by the periodical formation of the streamer-type discharge.

**Keywords:** Dielectric barrier discharge, Plasma actuator, Fluid simulation.

## One-Pot Facile Synthesis of N-Doped Graphene Synthesized from Paraphenylenediamine as Metal-Free Catalysts for the Oxygen Reduction Used for Alkaline Fuel Cells

Leila Samiee, Amir Yadegari, Saeedeh Tasharrofi

### Abstract:

In the work presented here, nitrogen-doped graphene materials were synthesized and used as metal-free electrocatalysts for oxygen reduction reaction (ORR) under alkaline conditions. Paraphenylenediamine was used as N precursor. The N-doped graphene was synthesized under hydrothermal treatment at 200°C. All the materials have been characterized by X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), Transmission electron microscopy (TEM) and X-ray photo-electron spectroscopy (XPS). Moreover, for electrochemical evaluation of samples, Rotating Disk electrode (RDE) and Cyclic Voltammetry techniques (CV) were employed. The resulting material exhibits an outstanding catalytic activity for the oxygen reduction reaction (ORR) as well as excellent resistance towards methanol crossover effects, indicating their promising potential as ORR electrocatalysts for alkaline fuel cells.

**Keywords:** Alkaline fuel cell, graphene, metal-free catalyst, paraphenylenediamine.

## Material Selection for Footwear Insole Using Analytical Hierarchal Process

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### Abstract:

Product performance depends on the type and quality of its building material. Successful product must be made using high quality material, and using the right methods. Many foot problems took place as a result of using poor insole material. Therefore, selecting a proper insole material is crucial to eliminate these problems. In this study, the analytical hierarchy process (AHP) is used to provide a systematic procedure for choosing the best material adequate for this application among three material alternatives (polyurethane, poron, and plastzote). Several comparison criteria are used to build the AHP model including: density, stiffness, durability, energy absorption, and ease of fabrication. Poron was selected as the best choice. Inconsistency testing indicates that the model is reasonable, and the materials alternative ranking is effective.

**Keywords:** Materials selection, biomedical insole, footwear insole, AHP.



## Effects of Test Environment on the Sliding Wear Behaviour of Cast Iron, Zinc-Aluminium Alloy and Its Composite

Mohammad M. Khan, Gajendra Dixit

### Abstract:

Partially lubricated sliding wear behaviour of a zinc-based alloy reinforced with 10wt% SiC particles has been studied as a function of applied load and solid lubricant particle size and has been compared with that of matrix alloy and conventionally used grey cast iron. The wear tests were conducted at the sliding velocities of 2.1m/sec in various partial lubricated conditions using pin on disc machine as per ASTM G-99-05. Base oil (SAE 20W-40) or mixture of the base oil with 5wt% graphite of particle sizes (7-10  $\mu\text{m}$ ) and (100  $\mu\text{m}$ ) were used for creating lubricated conditions. The matrix alloy revealed primary dendrites of  $\alpha$  and eutectoid  $\alpha + \text{h}$  and  $\hat{\text{I}}$  phases in the Inter dendritic regions. Similar microstructure has been depicted by the composite with an additional presence of the dispersoid SiC particles. In the case of cast iron, flakes of graphite were observed in the matrix; the latter comprised of (majority of) pearlite and (limited quantity of) ferrite. Results show a large improvement in wear resistance of the zinc-based alloy after reinforcement with SiC particles. The cast iron shows intermediate response between the matrix alloy and composite. The solid lubrication improved the wear resistance and friction behaviour of both the reinforced and base alloy. Moreover, minimum wear rate is obtained in oil+ 5wt % graphite (7-10  $\mu\text{m}$ ) lubricated environment for the matrix alloy and composite while for cast iron addition of solid lubricant increases the wear rate and minimum wear rate is obtained in case of oil lubricated environment. The cast iron experienced higher frictional heating than the matrix alloy and composite in all the cases especially at higher load condition. As far as friction coefficient is concerned, a mixed trend of behaviour was noted. The wear rate and frictional heating increased with load while friction coefficient was affected in an opposite manner. Test duration influenced the frictional heating and friction coefficient of the samples in a mixed manner.

**Keywords:** Solid lubricant, sliding wear grey cast iron, zinc based metal matrix composites.

## **Prediction of Cutting Tool Life in Drilling of Reinforced Aluminum Alloy Composite Using a Fuzzy Method**

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### **Abstract:**

Machining of Metal Matrix Composites (MMCs) is very significant process and has been a main problem that draws many researchers to investigate the characteristics of MMCs during different machining process. The poor machining properties of hard particles reinforced MMCs make drilling process a rather interesting task. Unlike drilling of conventional materials, many problems can be seriously encountered during drilling of MMCs, such as tool wear and cutting forces. Cutting tool wear is a very significant concern in industries. Cutting tool wear not only influences the quality of the drilled hole, but also affects the cutting tool life. Prediction the cutting tool life during drilling is essential for optimizing the cutting conditions. However, the relationship between tool life and cutting conditions, tool geometrical factors and workpiece material properties has not yet been established by any machining theory. In this research work, fuzzy subtractive clustering system has been used to model the cutting tool life in drilling of  $Al_2O_3$  particle reinforced aluminum alloy composite to investigate of the effect of cutting conditions on cutting tool life. This investigation can help in controlling and optimizing of cutting conditions when the process parameters are adjusted. The built model for prediction the tool life is identified by using drill diameter, cutting speed, and cutting feed rate as input data. The validity of the model was confirmed by the examinations under various cutting conditions. Experimental results have shown the efficiency of the model to predict cutting tool life.

**Keywords:** Composite, fuzzy, tool life, wear.

## **Material Selection for a Manual Winch Rope Drum**

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### **Abstract:**

The selection of materials is an essential task in mechanical design processes. This paper sets out to demonstrate the application of analytical decision making during mechanical design and, particularly, in selecting a suitable material for a given application. Equations for the mechanical design of a manual winch rope drum are used to derive quantitative material performance indicators, which are then used in a multiple attribute decision making (MADM) model to rank the candidate materials. Thus, the processing of mechanical design considerations and material properties data into information that is suitable for use in a quantitative materials selection process is demonstrated for the case of a rope drum design. Moreover, Microsoft Excel<sup>®</sup>, a commonly available computer package, is used in the selection process. The results of the materials selection process are in agreement with current industry practice in rope drum design. The procedure that is demonstrated here should be adaptable to other design situations in which a need arises for the selection of engineering materials, and other engineering entities.

**Keywords:** Design Decisions, Materials Selection, Mechanical Design, Rope Drum Design.

## UV-Cured Coatings Based on Acrylated Epoxidized Soybean Oil and Epoxy Carboxylate

Alaaddin Cerit, Suheyla Kocaman, Ulku Soydal

### Abstract:

During the past two decades, photoinitiated polymerization has been attracting a great interest in terms of scientific and industrial activity. The wide recognition of UV treatment in the polymer industry results not only from its many practical applications but also from its advantage for low-cost processes. Unlike most thermal curing systems, radiation-curable systems can polymerize at room temperature without additional heat, and the curing is completed in a very short time. The advantage of cationic UV technology is that post-cure can continue in the 'dark' after radiation. In this study, bio-based acrylated epoxidized soybean oil (AESO) was cured with UV radiation using radicalic photoinitiator Irgacure 184. Triarylsulphonium hexafluoroantimonate was used as cationic photoinitiator for curing of 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate. The effect of curing time and the amount of initiators on the curing degree and thermal properties were investigated. The thermal properties of the coating were analyzed after crosslinking UV irradiation. The level of crosslinking in the coating was evaluated by FTIR analysis. Cationic UV-cured coatings demonstrated excellent adhesion and corrosion resistance properties. Therefore, our study holds a great potential with its simple and low-cost applications.

**Keywords:** Acrylated epoxidized soybean oil, epoxy carboxylate, thermal properties, UV-curing.

## **Experimental Investigation on Over-Cut in Ultrasonic Machining of WC-Co Composite**

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### **Abstract:**

Ultrasonic machining is one of the most widely used non-traditional machining processes for machining of materials that are relatively brittle, hard, and fragile such as advanced ceramics, refractories, crystals, quartz etc. Present article has been targeted at investigating the impact of different experimental conditions (power rating, cobalt content, tool material, thickness of work piece, tool geometry, and abrasive grit size) on over cut in ultrasonic drilling of WC-Co composite material. Taguchi's L-36 orthogonal array has been employed for conducting the experiments. Significant factors have been identified using analysis of variance (ANOVA) test. The experimental results revealed that abrasive grit size and tool material are most significant factors for over cut.

**Keywords:** ANOVA, Abrasive grit size, Taguchi, WC-Co, ultrasonic machining.

## Induction Melting as a Fabrication Route for Aluminum-Carbon Nanotubes Nanocomposite

Muhammad Shahid, Muhammad Mansoor

### Abstract:

Increasing demands of contemporary applications for high strength and lightweight materials prompted the development of metal-matrix composites (MMCs). After the discovery of carbon nanotubes (CNTs) in 1991 (revealing an excellent set of mechanical properties) became one of the most promising strengthening materials for MMC applications. Additionally, the relatively low density of the nanotubes imparted high specific strengths, making them perfect strengthening material to reinforce MMCs. In the present study, aluminum-multiwalled carbon nanotubes (Al-MWCNTs) composite was prepared in an air induction furnace. The dispersion of the nanotubes in molten aluminum was assisted by inherent string action of induction heating at 790°C. During the fabrication process, multifunctional fluxes were used to avoid oxidation of the nanotubes and molten aluminum. Subsequently, the melt was cast in to a copper mold and cold rolled to 0.5 mm thickness. During metallographic examination using a scanning electron microscope, it was observed that the nanotubes were effectively dispersed in the matrix. The mechanical properties of the composite were significantly increased as compared to pure aluminum specimen i.e. the yield strength from 65 to 115 MPa, the tensile strength from 82 to 125 MPa and hardness from 27 to 30 HV for pure aluminum and Al-CNTs composite, respectively. To recognize the associated strengthening mechanisms in the nanocomposites, three foremost strengthening models i.e. shear lag model, Orowan looping and Hall-Petch have been critically analyzed; experimental data were found to be closely satisfying the shear lag model.

**Keywords:** Carbon nanotubes, induction melting, nanocomposite, strengthening mechanism.

## **Influence of Milled Waste Glass to Clay Ceramic Foam Properties Made by Direct Foaming Route**

A. Shishkin, V. Mironovs, D. Goljandin, A. Korjamins

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### **Abstract:**

The goal of this work is to develop sustainable and durable ceramic cellular structures using widely available natural resources- clay and milled waste glass. Present paper describes method of obtaining clay ceramic foam (CCF) with addition of milled waste glass in 5, 7 and 10 wt% by direct foaming with high speed mixer-disperser (HSMD). For more efficient clay and waste glass milling and mixing, the high velocity disintegrator was used. The CCF with 5, 7, and 10 wt% were obtained at 900, 950, 1000 and 1050 °C firing temperature and they have demonstrated mechanical compressive strength for all 12 samples ranging from 3.8 to 14.3 MPa and porosity 76-65%. Obtained CCF has compressive strength 14.3 MPa and porosity 65.3%.

**Keywords:** Ceramic foam, waste glass, clay foam, glass foam, open cell, direct foaming.

## Relating Interface Properties with Crack Propagation in Composite Laminates

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### Abstract:

The interfaces between organic and inorganic phases in natural materials have been shown to be a key factor contributing to their high performance. This work analyzes crack propagation in a 2-ply laminate subjected to uniaxial tensile mode-I crack propagation loading that has laminate properties derived based on biological material constituents (marine exoskeleton-chitin and calcite). Interfaces in such laminates are explicitly modeled based on earlier molecular simulations performed by authors. Extended finite element method and cohesive zone modeling based simulations coupled with theoretical analysis are used to analyze crack propagation. Analyses explicitly quantify the effect that interface mechanical property variation has on the delamination as well as the transverse crack propagation in examined 2-ply laminates.

**Keywords:** Chitin, composites, interfaces, fracture.



## Corporate Governance Networks and Interlocking Directorates in the Czech Republic

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### Abstract:

This paper presents an exploration into the structure of the corporate governance network and interlocking directorates in the Czech Republic. First a literature overview and a basic terminology of the network theory is presented. Further in the text, statistics and other calculations relevant to corporate governance networks are presented. For this purpose an empirical data set consisting of 2 906 joint stock companies in the Czech Republic was examined. Industries with the highest average number of interlocks per company were healthcare, and energy and utilities. There is no observable link between the financial performance of the company and the number of its interlocks. Also interlocks with financial companies are very rare.

**Keywords:** Corporate Governance, Interlocking Directorates, Network Theory, Czech Republic.

## **The Impact of Stakeholder Communication Strategies on Consumers- Acceptance and Financial Performance: In the Case of Fertilizer Industry in Malaysia**

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### **Abstract:**

There has been a growing emphasis in communication management from simple coordination of promotional tools to a complex strategic process. This study will examine the current marketing communications and engagement strategies used in addressing the key stakeholders. In the case of fertilizer industry in Malaysia, there has been little empirical research on stakeholder communication when major challenges facing the modern corporation is the need to communicate its identity, its values and products in order to distinguish itself from competitors. The study will employ both quantitative and qualitative methods and the use of Structural Equation Modeling (SEM) to establish a causal relationship amongst the key factors of stakeholder communication strategies and increment in consumers- choice/acceptance and impact on financial performance. One of the major contributions is a conceptual framework for communication strategies and engagement in increasing consumers- acceptance level and the firm-s financial performance.

**Keywords:** Consumers' acceptance, financial performance, stakeholder communication strategies.

## **Analysis of Rubber Waste Utilization at Pandora Production Company Limited**

S. Pechpoothong, M. Kopystecki

Sarisa Pechpooghong is with the Suan Sunandha Rajabhat Bangkok, Thailand

### **Abstract:**

The eco-efficient use of “waste” makes sense from economic, social, and environmental perspectives. By efficiency diverting “waste” products back into useful and/or profitable inputs, industries and entire societies can reap the benefits of improved financial profit, decreased environmental degradation, and overall well-being of humanity. In this project, several material flows at Company Limited were investigated. Principles of “industrial ecology” were applied to improve the management of waste rubbers that are used in the jewelry manufacturing process. complete this project, a brief engineering analysis stream, and investigated eco-efficient principles for more efficient handling of the materials and wastes were conducted, and the result were used to propose implementation strategies.

**Keywords:** Rubber, ecology, waste.

## **The Study of Public Consciousness of Undergraduate Students, Suan Sunandha Rajabhat University**

Nantida Otakum

### **Abstract:**

The purpose of the study is to study the level of public consciousness of Suan Sunandha Rajabhat University undergraduate students. This study also compares differences in the level of public consciousness among undergraduate students who are different in sex and year of study. The research methodology employed a questionnaire as a quantitative method. The respondents were undergraduate students at Suan Sunandha Rajabhat University. Totally, 400 usable questionnaires were received. Descriptive and inferential statistics were used in data analysis. The results showed that the level of public consciousness of undergraduate students was at a good level in all aspects. The aspect of social participation was at the highest level, while the aspect of shared vision was at the lowest level. The results also indicated that undergraduate students with differences in sex and year of study were not significantly different in public consciousness level.

**Keywords:** Participation, public consciousness, Suan Sunandha Rajabhat University, undergraduate students.

## Hybrid Energy Supply with Dominantly Renewable Option for Small Industrial Complex

Tomislav Stambolic, Anton Causevski

### Abstract:

The deficit of power for electricity demand reaches almost 30% for consumers in the last few years. This reflects with continually increasing the price of electricity, and today the price for small industry is almost 110Euro/MWh. The high price is additional problem for the owners in the economy crisis which is reflected with higher price of the goods. The paper gives analyses of the energy needs for real agro complex in Macedonia, private vinery with capacity of over 2 million liters in a year and with self grapes and fruits fields. The existing power supply is from grid with 10/04 kV transformer. The geographical and meteorological condition of the vinery location gives opportunity for including renewable as a power supply option for the vinery complex. After observation of the monthly energy needs for the vinery, the base scenario is the existing power supply from the distribution grid. The electricity bill in small industry has three factors: electricity in high and low tariffs in kWh and the power engaged for the technological process of production in kW. These three factors make the total electricity bill and it is over 110 Euro/MWh which is the price near competitive for renewable option. On the other side investments in renewable (especially photovoltaic (PV)) has tendency of decreasing with price of near 1,5 Euro/W. This means that renewable with PV can be real option for power supply for small industry capacities (under 500kW installed power). Therefore, the other scenarios give the option with PV and the last one includes wind option. The paper presents some scenarios for power supply of the vinery as the followings: • Base scenario of existing conventional power supply from the grid • Scenario with implementation of renewable of Photovoltaic • Scenario with implementation of renewable of Photovoltaic and Wind power The total power installed in a vinery is near 570 kW, but the maximum needs are around 250kW. At the end of the full paper some of the results from scenarios will be presented. The paper also includes the environmental impacts of the renewable scenarios, as well as financial needs for investments and revenues from renewable.

**Keywords:** Energy, Power Supply, Renewable, Efficiency.

## **A Statistical Prediction of Likely Distress in Nigeria Banking Sector Using a Neural Network Approach**

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### **Abstract:**

One of the most significant threats to the economy of a nation is the bankruptcy of its banks. This study evaluates the susceptibility of Nigerian banks to failure with a view to identifying ratios and financial data that are sensitive to solvency of the bank. Further, a predictive model is generated to guide all stakeholders in the industry. Thirty quoted banks that had published Annual Reports for the year preceding the consolidation i.e. year 2004 were selected. They were examined for distress using the Multilayer Perceptron Neural Network Analysis. The model was used to analyze further reforms by the Central Bank of Nigeria using published Annual Reports of twenty quoted banks for the year 2008 and 2011. The model can thus be used for future prediction of failure in the Nigerian banking system.

**Keywords:** Bank, Bankruptcy, Financial Ratios, Neural Network, Multilayer Perceptron, Predictive Model

## CONTROL OF PHYSICAL PROPERTIES OF ZNO FILMS BY VARYING THE CONCENTRATION OF TRISODIUM CITRATE

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### ABSTRACT

Compared to many other materials, zinc oxide (ZnO) is a group II–VI binary compound semiconducting metal oxide material with more intriguing and significant features. Moreover, ZnO is an n-type semiconducting oxide with a significant exciton binding energy of about 60 meV and a broad direct bandgap of 3.3 eV at ambient temperature. ZnO is a semiconductor utilized in transparent electronics, spintronic devices, blue/UV optoelectronics, and sensor applications because of these characteristics. In this study, the effect of trisodium citrate (TSC) addition on the morphological, structural and optical changes of ZnO films was investigated. For this purpose, ZnO films with and without trisodium citrate (TSC) as a surfactant were successfully synthesized on glass by successive ionic layer adsorption and reaction (SILAR) method. The produced films were subjected to scanning electron microscopy (SEM), X-ray diffraction (XRD), and ultraviolet (UV) visible examination to describe their pertinent morphological, structural, and optical features. The results of the analysis showed that TSC is an important capping agent in the formation of ZnO films and in controlling the physical properties.

**Keywords:** ZnO thin film; Surfactant; Trisodium citrate; SILAR procedure

## Nöropsikiyatrik Hastalıklarda Görülen Ses Bozuklukları: Özet Bir Derleme

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### ÖZET

**Giriş:** Nöropsikiyatrik hastalıklar, dil, konuşma ve ses bozuklukları ile de ilişkilendirilebilmektedir. Bu çalışmanın amacı, Nöropsikiyatrik hastalıklarda görülebilen ses bozuklukları ile ilgili kaynak sağlamaktır. **Yöntem:** Bu araştırmada nitel araştırma yöntemlerinden geleneksel derleme tekniği kullanılmıştır. Araştırma için ulusal ve uluslararası kaynaklar kullanılmıştır. **Sonuç ve Tartışma:** Nöropsikiyatrik hastalıklarda dizartrik konuşma, ses, perde kontrolündeki tutarsızlıklar, şiddetin uygun olmaması, nefessilik gibi ses bozukluklarına neden olabilecek bozulmalara rastlanmaktadır. Bu noktada tıp hekimi, dil konuşma terapisti ve gerekli durumlarda psikoloğun multidisipliner desteği hastanın ses sağaltımı açısından büyük önem taşımaktadır.

**Anahtar Kelimeler:** Nöropsikiyatrik hastalık, ses bozukluğu, disfoni, dil ve konuşma terapisti

**Amaç:** Bu çalışmanın amacı, Nöropsikiyatrik hastalıklarda görülebilen ses bozuklukları ile ilgili kaynak sağlamaktır

**Evren ve örneklem:** 1950-2023 yılları arasında yapılmış çalışmalar taranmıştır.

**Çalışma modeli:** Bu araştırmada nitel araştırma yöntemlerinden geleneksel derleme tekniği kullanılmıştır. Araştırma için veri ulusal ve uluslararası kaynaklar kullanılmıştır

**Bulgular:** Nöropsikiyatrik hastalıklarda dizartrik konuşma, ses, perde kontrolündeki tutarsızlıklar, şiddetin uygun olmaması, nefessilik gibi ses bozukluklarına neden olabilecek bozulmalara rastlanmaktadır.

**Sonuç:** Tıp hekimi, dil konuşma terapisti ve gerekli durumlarda psikoloğun multidisipliner desteği hastanın ses sağaltımı açısından büyük önem taşımaktadır.

**Anahtar Kelimeler:** Nöropsikiyatrik hastalık, ses bozukluğu, disfoni, dil ve konuşma terapisti



## Voice Disorders Seen in Neuropsychiatric Diseases: A Summary Review

### ÖZET

**Introduction:** Neuropsychiatric diseases can also be associated with language, speech and voice disorders. The aim of this study is to provide resources on voice disorders that can be seen in neuropsychiatric diseases. **Method:** In this research, traditional review technique, one of the qualitative research methods, was used. National and international sources of data were used for the research. **Result and Discussion:** In neuropsychiatric diseases, disorders that may cause voice disorders such as dysarthric speech, inconsistencies in voice and pitch control, inappropriate intensity, and breathlessness are encountered. At this point, multidisciplinary support from a medical doctor, speech-language pathologist and, when necessary, a psychologist is of great importance for the patient's voice treatment.

**Keywords:** Neuropsychiatric disease, voice disorder, dysphonia, speech and language therapist

### ABSTRACT

**Aim:** The aim of this study is to provide resources on voice disorders that can be seen in neuropsychiatric diseases.

**Population and sample:** Studies conducted between 1950-2023 were scanned.

**Model:** In this research, traditional review technique, one of the qualitative research methods, was used. Data from national and international sources were used for the research.

**Results:** In neuropsychiatric diseases, disorders that may cause voice disorders such as dysarthric speech, inconsistencies in voice and pitch control, inappropriate intensity, and breathlessness are encountered.

**Conclusion:** Multidisciplinary support from a medical doctor, speech-language pathologist and, when necessary, a psychologist is of great importance for the patient's voice treatment.

**Keywords:** Neuropsychiatric disease, voice disorder, dysphonia, speech and language therapist

## DOĞUMUN BAŞLATILMASINA YÖNELİK FARMAKOLOJİK YÖNTEMLER

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### ÖZET

Doğumun spontan başlangıcından önce, amaçlı uterus kasılmaları oluşturarak başlatılması doğum indüksiyonudur. Doğumun indüksiyonu için hem farmakolojik hem de nonfarmakolojik ajanlar kullanılır. Bu ajanlar tek tek kullanıldıklarında indüksiyon uygulanan kadınlarda sezaryen doğum insidansını azaltmakla birlikte makul bir şekilde yöntemlerin birleştirilmesi doğumun gerçekleşmesinde sinerjistik bir etkiye sahip olabilir. Yapılan bazı çalışmalar, kombinasyon yöntemleriyle doğum süresinde ve sezaryen doğum riskinde azalmanın olduğu konusunda umut vaat etmektedir.

Doğum yönetilmesinde kullanılan çeşitli tekniklerin birbirine üstünlüğü konusunda çeşitli çalışmalar bulunmaktadır. Yöntemler arası kıyaslama ile ilgili yapılacak çalışmalar farklı araştırmalara konu olabilir. Bu derlemenin amacı doğumun başlatılmasına yönelik farmakolojik yöntemlerden; prostaglandinler (dinoproston, misoprostol), oksitosin, mifepriston, hyaluronidaz ve nitrik oksit donörleri açısından incelemektir.

**Anahtar Kelimeler :** Doğum, indüksiyon, farmakolojik yöntem.

## PHARMACOLOGICAL METHODS FOR THE INDUCTION OF LABOR

### ABSTRACT

Induction of labor is the initiation of labor by creating purposeful uterine contractions before the spontaneous onset of labor. Both pharmacological and non-pharmacological agents are used for induction of labor. Although these agents, when used individually, reduce the incidence of cesarean delivery in women undergoing induction, judicious combination of methods may have a synergistic effect on the achievement of labor. Some studies show hope that combination methods reduce the duration of labor and the risk of cesarean delivery.

There are various studies on the superiority of various techniques used in birth management. Studies on comparison between methods may be the subject of different research. The aim of this review is to discuss pharmacological methods for inducing labor; to examine for prostaglandins (dinoprostone, misoprostol), oxytocin, mifepristone, hyaluronidase and nitric oxide donors.

**Key Words:** Birth, induction, pharmacological method.

## DOĞUMUN BAŞLATILMASINA YÖNELİK NONFARMAKOLOJİK YÖNTEMLER

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### ÖZET

Doğum indüksiyonunun nihai hedefi, spontan kasılmalardan önce uterus kasılmalarını uyararak vajinal doğum sağlamaktır. Bu genellikle uygun bir müdahale olsa da, günümüzde doğum indüksiyonunun görülme sıklığı ciddi seviyede artış göstermiştir. Bu artışın etiolojisi çok faktörlü olmakla birlikte genellikle tıbbi olarak endike olan doğumların sayısındaki değişiklikler, hasta ve/veya doktor tercihleri, seçmeli olarak zamanlanmış doğumlar için, doğum indüksiyonunun algılanan kolaylığı gibi nedenlere bağlıdır.

Doğum yönetilmesinde kullanılan tekniklerin başında gelen doğum indüksiyonunun çeşitli yöntemleri bulunmaktadır. Bu derleme mevcut kanıtlara dayanarak doğumun başlatılmasına yönelik nonfarmakolojik yöntemlerden; hint yağı, meme ucu uyarımı, cinsel ilişki, bitkisel ilaç ve akupunktur gibi halihazırda mevcut yöntemleri özetlemektedir.

**Anahtar Kelimeler :** Doğum, indüksiyon, nonfarmakolojik yöntem.

## NONPHARMACOLOGICAL METHODS FOR THE INDUCTION OF LABOR

### ABSTRACT

The ultimate goal of labor induction is to achieve vaginal birth by stimulating uterine contractions before spontaneous contractions. Although this is generally an appropriate intervention, the incidence of labor induction has increased significantly today. The etiology of this increase is multifactorial and generally depends on factors such as changes in the number

of medically indicated deliveries, patient and/or physician preferences, and perceived ease of induction of labor for electively scheduled deliveries.

There are various methods of labor induction, which is one of the techniques used in birth management. This review includes non-pharmacological methods for inducing labor based on current evidence; It outlines currently available methods such as castor oil, nipple stimulation, sexual intercourse, herbal medicine and acupuncture.

**Key Words:** Birth, induction, nonpharmacological method.

## INVESTIGATION OF DEEP EUTECTIC SOLVENTS FOR THE DETERMINATION OF SULFADIAZINE RESIDUES IN HONEY SAMPLES

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### ABSTRACT

Determination of sulfadiazine (SDZ), which has toxic effects on human health, in various real specimens is an essential issue in the field of analytical chemistry. Therefore, it is always interesting for analytical chemists to develop selective, susceptible and accessible techniques for the identification of SDZ. Based on these facts, an air-assisted deep eutectic solvent-based microextraction (AA-DES-ME) technique was improved in this research. The amount of SDZ was determined by spectrophotometer. Deep eutectic solvent prepared from the mixture of menthol: formic acid (1:2 molar ratio) was used as the extraction solvent. Important parameters have been thoroughly investigated and optimized. In recent years, DESs have been replacing organic solvents because they are very environmentally friendly, easy to prepare and contain important features such as low vapor pressure. The AA-DES-ME method was linear in the interval of 20-175  $\mu\text{g L}^{-1}$ . The selection limit of the method was 6.5  $\mu\text{g L}^{-1}$ . The validity of the AA-DES-ME method was confirmed through extensive validation studies before analysis of real prefixes. Finally, the AA-DES-ME analytical technique was effectively performed to the extraction of SDZ residues in different sample groups.

**Keywords:** Sulfadiazine, Deep eutectic solvents, Air-assisted microextraction, Spectrophotometer

## DISPERSIVE LIQUID PHASE EXTRACTION METHOD FOR THE DETERMINATION OF HISTAMINE FROM PROCESSED MEAT PRODUCTS

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### ABSTRACT

This research paper describes a dispersive liquid phase extraction (DLPE) method developed to extract histamine from processed meat products. Tergitol (non-ionic surfactant) was used as the extraction solvent. Heptanol was selected as a dispersive solvent. The amount of histamine in the solution obtained after DLPE was determined using a spectrophotometer. Factors that affect the usefulness of the DLPE method, such as pH, dispersive solvent type and volume, amount of extraction solvent, and sonication time, were investigated and optimized. The LOD and LOQ values of the method under optimized conditions were  $15 \mu\text{g L}^{-1}$  and  $50 \mu\text{g L}^{-1}$ , respectively. The DLPE method exhibited linearity in the amount range of 50-300  $\mu\text{g L}^{-1}$  of histamine. The precision and accuracy of the DLPE method were calculated by relative standard deviation (RSD) and recovery studies, respectively. In the final stage, the DLPE method was applied for the extraction of histamine in processed foodstuffs with a standard addition approach. The recovery and RSD values achieved from the investigation of the samples were in the range of 91-98.6% and 1.6-2.5%, respectively.

**Keywords:** Dispersive liquid phase extraction, Tergitol, Histamine, Meat products

## FOTODİNAMİK TERAPİ İÇİN GENETİK OLARAK TASARLANMIŞ FOTOSENSİTİZERLER

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### ÖZET

Fotodinamik terapi (Photodynamic therapy; PDT)'nin keşfi yüz yıldan daha öncesine dayanmaktadır. O zamandan beri kanser ve çeşitli malign olmayan hastalıklar üzerinde iyi çalışılmış bir terapi yöntemi olmuştur. PDT belirli bir dalga boyunda ışıkla aktive olan fotosensitizerler tarafından moleküler oksijenin yüksek derecede sitotoksik reaktif oksijen türlerine (ROS) dönüştürülmesi prensibine dayanmaktadır. PDT üç temel bileşenin fotokimyasal etkileşimini içerir. Bu bileşenler; ışık, fotosensitizer (ışığa duyarlılaştırıcı-PS) ve moleküler oksijendir. PDT'de en yaygın olarak kimyasal bazlı fotosensitizerler kullanılmaktadır. Bugüne kadar klinik kullanım için onaylanmış kimyasal fotosensitizerlerin çoğu porfirinler, klorinler ve bunların türevleridir. Kimyasal fotosensitizerler normal dokuda birikerek spesifik olmayan toksisiteye neden olabilmektedir. Bunların aksine genetik olarak kodlanmış fotosensitizerler, belirli hücresel bölmelere (hücre zarı, mitokondri, çekirdek) ve hücre tiplerine spesifik olarak hedeflenebilir. Ayrıca genetik olarak kodlanmış fotosensitizerlerin ifadesi, belirli hücre tiplerinde seçici ekspresyona izin veren spesifik promotörler tarafından kontrol edilebilir. Şimdiye kadar farklı floresan protein ailelerinden tanımlanmış olan genetik olarak kodlanmış çeşitli fotosensitizerler elde edilmiştir. Bu fotosensitizerler genellikle farklı kromoforlara sahip GFP (Green fluorescent protein: Yeşil floresan protein) ve LOV (Light-oxygen-voltage: Işık-oksijen-voltaj) ailesinden türetilmişlerdir. KillerRed, miniSOG, EcFbFp, mKate2, SuperNova ve TagRFP yaygın olarak kullanılan genetik olarak tasarlanmış fotosensitizerlerdir. Literatürde son yıllarda lösemi, meme, akciğer, kolon kanseri tedavilerinde fotosensitizerlerin kullanıldığı fotodinamik terapi çalışmalarının yer aldığı görülmektedir. Bu çalışmada PDT için genetik mühendisliği aracılığıyla geliştirilen fotosensitizerler ve kullanımları tartışılacaktır.



**Anahtar Kelimeler:** Fotodinamik terapi, fotosensitizer, genetik mühendisliği

## GENETICALLY ENGINEERED PHOTOSENSITIZERS FOR PHOTODYNAMIC THERAPY

### ABSTRACT

The discovery of photodynamic therapy (PDT) dates back more than a hundred years. Since then, it has been a well-studied therapy for cancer and various non-malignant diseases. PDT is based on the principle of conversion of molecular oxygen into highly cytotoxic reactive oxygen species (ROS) by photosensitizers activated by a specific wavelength of light. PDT involves the photochemical interaction of three basic components. These components are light, photosensitizer (PS) and molecular oxygen. Chemical-based photosensitizers are most commonly used in PDT. To date, most of the chemical photosensitizers approved for clinical use are porphyrins, chlorines and their derivatives. Chemical photosensitizers can accumulate in normal tissue and cause non-specific toxicity. In contrast, genetically encoded photosensitizers can be specifically targeted to specific cellular compartments (cell membrane, mitochondria, nucleus) and cell types. Furthermore, the expression of genetically encoded photosensitizers can be controlled by specific promoters that allow selective expression in specific cell types. Several genetically encoded photosensitizers have been obtained so far, which have been identified from different fluorescent protein families. These photosensitizers are generally derived from the GFP (Green fluorescent protein) and LOV (Light-oxygen-voltage) families with different chromophores. KillerRed, miniSOG, EcFbFp, mKate2, SuperNova and TagRFP are widely used genetically engineered photosensitizers. In recent years, photodynamic therapy studies using photosensitizers in the treatment of leukaemia, breast, lung and colon cancer have been reported in the literature. In this study, photosensitizers developed through genetic engineering for PDT and their uses will be discussed.

**Keywords:** Photodynamic therapy, photosensitizers, genetic engineering

## GLIOBLASTOMA İÇİN TERAPÖTİK STRATEJİLER

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### ÖZET

Beyin tümörleri buldukları konum nedeniyle insanlar için en zor tedavi edilen kanserlerden biridir. Bu kanserlerden biri olan glioblastoma multiform (GBM) yetişkinlerde görülen primer merkezi sinir sistemi (MSS) tümörlerinden en yaygın ve en ölümcül olanıdır. Bununla beraber uygulanan tedavilere rağmen neredeyse tüm hastalarda, tedavilerden sonra tümörün nüksettiği görülmektedir. GBM için uygulanan terapiler, bazı anatomik ve fizyolojik engeller sebebiyle sınırlı veya etkisiz olabilmektedir. Bu engellerin başında tümörün heterojen doğası, yüksek agresifliği, anatomik konumu ve kan beyin bariyeri (KBB) gelmektedir. GBM'li hastaların cerrahi, radyoterapi ve kemoterapi gibi geleneksel metotlarla tedavi edilmesinin yanı sıra, günümüzde kombinasyon terapileri, hedefe yönelik tedaviler, immünoterapi ve nano taşıyıcılarla terapi gibi modern metotlar da geliştirilmiştir. Geleneksel metotlar, modern metotlarla desteklenmektedir. Bu sayede tedavideki fizyolojik ve doğal engellerin aşılması ve tedavide daha etkin sonuçların alınması sağlanmaktadır. Bu çalışmada glioblastoma için yeni terapötik stratejiler tartışılacaktır.

**Anahtar Kelimeler:** Glioblastoma, terapötik stratejiler, kanser

## THERAPEUTIC STRATEGIES FOR GLIOBLASTOMA

### ABSTRACT

Brain tumors are one of the most difficult cancers to treat for humans due to their location. One of these cancers, glioblastoma multiform (GBM), is the most common and deadliest of the primary central nervous system (CNS) tumors in adults. However, despite treatment, almost all patients experience recurrence of the tumor after treatment. Therapies applied for GBM may be limited or ineffective due to some anatomical and physiological obstacles. The main obstacles are the heterogeneous nature of the tumor, its high aggressiveness, its anatomical location and the blood-brain barrier (BBB). In addition to traditional methods of treating GBM such as surgery, radiotherapy and chemotherapy, modern methods such as combination therapies, targeted therapies, immunotherapy and nanocarrier therapy have been developed. Traditional methods are supported by modern methods. In this way, physiological and natural obstacles to treatment can be overcome and more effective results can be obtained. In this study, new therapeutic strategies for glioblastoma will be discussed.

**Keywords:** Glioblastoma, therapeutic strategies, cancer

## UNLU MAMULLER VE PASTACILIK SEKTÖRÜNDE, İŞGÖRENLERİN İŞYERİ/İŞLETME DEĞİŞTİRME SIKLIĞI VE ÇALIŞANLARI BUNA İTEN NEDENLER: İZMİR ÖRNEĞİ

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### ÖZET

İşgören devri terimi, bir zaman diliminde çeşitli nedenlerle işyerinden ayrılan işgören sayısının o dönemde işyerinde kayıtlı işgören sayısına oranlanması ile bulunan sayıyı gösterir. İş gören devir hızının düşük olması işletmeler tarafından olumlu bir durum olarak görülürken, yüksek olması ise işletmede var olan bir problemin dışı vurumu olarak kabul edilmektedir.

Bu çalışma, unlu mamuller ve pastacılık sektöründe, işgörenlerin işyeri değiştirme sıklığını belirlemek ve işgörenleri iş değiştirmeye iten nedenleri tespit etmek ve yöneticilere önerilerde bulunmak amacıyla yapılmıştır. Yapılan alan araştırmasının nitel araştırma yöntemlerinden anket tekniği ile veri toplanmıştır. Araştırmanın evreni, İzmir’de unlu mamuller ve pastacılık alanında faaliyet gösteren işletmelerin tamamıdır (Buca, Konak, Bornova, Çiğli, Karşıyaka, Bayraklı). Örneklem on beş işletme ve seksen katılımcıdan oluşmaktadır.

Sonuç olarak; emek yoğun bir sektör olan, unlu mamuller ve pastacılık sektöründe, işgörenlerin işyeri/işletme değiştirme sıklığı ve çalışanları buna iten nedenler ortaya konmuş, ancak demografik özelliklerle bu kavramlar arasında anlamlı bir ilişki bulunamamıştır. Öneriler geliştirilmiş ve ileri çalışma konuları vurgulanmıştır.

**Anahtar Kelimeler:** İşgücü devri, işgören devri, yiyecek içecek işletmeleri, unlu mamuller sektörü, pastacılık sektörü

## ALLICIN: MEDICAL AND BIOCHEMICAL FEATURES

### ALLİSİN: TIBBİ VE BİYOKİMYASAL ÖZELLİKLERİ

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#### ÖZET

Allisin (dialil tiyosülfinat), geniş bir biyolojik aktivite yelpazesine sahip sarımsaktan (*Allium sativum* L.) elde edilen bir moleküldür. Allisin, reaktif bir kükürt türüdür ve biyolojik aktivitesi için gerekli olduğu düşünülen glutatyon ve proteinlerdeki tiyol grupları ile redoks reaksiyonuna girer. Mikrobiyal, bitki ve memeli hücrelerinde fizyolojik olarak aktiftir. Bakteri ve mantarların çoğalmasını engelleyebildiği veya bazı antibiyotiğe dirençli suşlar da dahil olmak üzere hücreleri doğrudan öldürdüğü gösterilmiştir. Ayrıca, kanser hücreleri de dahil olmak üzere memeli hücre hatlarında allisinin, hücre ölümünü indükleyerek, hücre proliferasyonunu inhibe ettiği bildirilmiştir. Bitkilerde allisin tohumun çimlenmesini engeller ve kök gelişimini zayıflatır.

Sarımsak (*Allium sativum* L.), Liliaceae familyasına ait 10-20 arası dişten oluşan bir yumru şeklinde, keskin kokulu, çiçekli ve çok yıllık bir bitkidir. Ülkemizde taze ve kurutulmuş hali gıda ve baharat olarak tüketilmektedir. Sarımsak, karakteristik tadı ve tıbbi özellikleri nedeniyle Akdeniz bölgesinde yüzyıllardır yetiştirilmektedir ve İtalya'da yaygın olarak yetiştirilmektedir. Sarımsağın önemli bir biyolojik olarak aktif bileşeni olan allisinin, esas olarak fibroblast çoğalmasının, fibrojenik sitokin salgısının ve hücre dışı matrisin inhibisyonu ile ilişkili olarak karaciğer, akciğer ve kalpteki doku fibrozisinin önlenmesinde rol oynayabileceğini göstermiştir. Allisin etkilerinin çoğunluğunun redoks bağımlı mekanizmalar yoluyla aracılık ettiğine inanılmaktadır.

Yüzyıllardan beri konjestif kalp yetmezliği, sistolik hipertansiyon, anjina pectoris, ateroskleroz, venöz yetmezlik ve aritmi hastalarında şifalı bitkiler kullanılmaktadır. Alternatif tıp ve doğal ürünlerin popülaritesindeki son dönemdeki artış, kolesterol ve kan basıncını düşürücü etkileri ile kardiyovasküler hastalıkların tedavisinde kullanılan geleneksel ilaçlara olan ilgiyi yeniden canlandırmıştır.

Bu çalışmada allisin içeren sarımsak bitkisinin, geniş kapsamlı olarak tıpta ve tarımda kullanımını ve allisinin maddesinin potansiyeli ve biyokimyasal yapısı tartışılmıştır.

**Anahtar Kelimeler:** allisin, garlic (*Allium sativum*), antioksidan, antimicrobial, cancer

## METABOLOMİKTE BİYOBELİRTEÇ KEŞFİ: HASTALIKLARIN ERKEN TANISINDA YENİ YAKLAŞIMLAR

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### ÖZET

Metabolomik, bir organizmanın hücresel düzeydeki metabolit profillerini inceleyen bir disiplindir ve bu profiller, hastalıklar hakkında önemli bilgiler sağlamaktadır. Metabolomik, genellikle küçük moleküllerin (metabolitlerin) bir organizmanın biyolojik sistemlerindeki değişimlerini analiz eder. Bu moleküler değişimler, hastalıkların erken aşamalarında ortaya çıkan belirgin biyobelirteçler olabilir. Metabolomik, potansiyel biyobelirteçleri keşfetmek için büyük veri setlerini kullanarak, hastalıkların erken tanısında daha hassas ve spesifik yöntemler geliştirmeye odaklanmaktadır. Bu sayede metabolomik hastalara daha hızlı müdahale edilerek hastalıkların seyrini ve tedavi sürecini olumlu yönde etkilemeyi amaçlar. Büyük veri analitiği, yapay zekâ ve sistem biyolojisi gibi disiplinlerle entegre metabolomik araştırmalar verilerden anlamlı bilgiler elde etme kapasitesini artmaktadır. Bu, hastalıkların erken tanısında daha etkili ve kişiselleştirilmiş stratejilerin geliştirilmesine olanak tanıyabilir. Bu çalışma, metabolomikte biyobelirteç keşfinin mevcut durumunu ve gelecekteki potansiyel uygulamalarını değerlendirecektir. Hastalıkların erken teşhisinde kullanılacak biyobelirteçlerin keşfi, tıbbi uygulamalarda devrim niteliğinde bir ilerleme sunabilir ve bireylerin sağlık durumlarını daha etkili bir şekilde yönetmelerine olanak tanıyabilir.

**Anahtar Kelimeler:** Biyoinformatik, Metabolomik, Biyobelirteç Keşfi

## BİLGİSAYAR DESTEKLİ İLAÇ TASARIMI YÖNTEMLERİ

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### ÖZET

Günümüzde, ilaç tasarımı sürecinde bilgisayar destekli yöntemlerin kullanımı önemli bir yer tutmaktadır. Bu yöntemler, geleneksel ilaç tasarımının maliyetli ve zaman alıcı olmasının yanı sıra, moleküler düzeyde etkileşimleri anlamak ve optimize etmek için kapsamlı bir yaklaşım sunmaktadır. Bu çalışma, bilgisayar destekli ilaç tasarımının, yeni ilaçların keşfinde ve geliştirilmesinde nasıl kritik bir rol oynadığını incelemektedir. Bilgisayar destekli ilaç tasarımı, biyoinformatik, moleküler modelleme ve yapay zekâ gibi disiplinlerin entegrasyonunu içerir. Ligand-tabanlı ve yapı-tabanlı yöntemler, hedef molekül ve potansiyel ilaç adayları arasındaki etkileşimleri değerlendirmek için kullanılan temel stratejilerdir. Yapay zekâ algoritmaları, büyük veri setlerinden elde edilen bilgileri analiz ederek, yeni ilaç adaylarının keşfinde önemli bir araç haline gelmiştir. Bilgisayar destekli ilaç tasarımı, hızlı ve etkili bir şekilde potansiyel ilaç adaylarını belirleme yeteneği ile öne çıkmaktadır. Bu yöntemler, biyolojik hedeflerle etkileşen bileşikler taramak, moleküler etkileşimleri anlamak ve optimize etmek için kullanılan stratejilerle ilaç geliştirme sürecini hızlandırmaktadır. Bununla birlikte, deneysel verilerin doğrulanması ve bilgisayar destekli yöntemlerin sınırlamalarının anlaşılması önemlidir. Bilgisayar destekli ilaç tasarımı, modern ilaç geliştirme süreçlerinde önemli bir araç olmaya devam etmektedir. Bu yöntemler, maliyetleri düşürmek, süreçleri hızlandırmak ve daha etkili ilaçlar keşfetmek için bilgi teknolojilerinin avantajlarını kullanmaktadır. Ancak, bu alandaki gelişmelerin dikkatlice takip edilmesi ve deneysel doğrulamaların sürekli yapılması gerekmektedir.

**Anahtar Kelimeler :** Yapı- Temelli İlaç Tasarımı, Ligand- Temelli İlaç Tasarımı, Moleküler Kenetlenme (Docking), Kantitatif Yapı-Etki İlişkileri (QSAR).

## DİSİYANODİBENZO[F,H]KİNOKSALİN TABANLI BİLEŞİKLERİN TADF ÖZELLİKLERİNİN TEORİK OLARAK İNCELENMESİ

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### ÖZET

Potansiyel termal olarak etkinleştirilen gecikmeli floresans (TADF) yayıcıları önerebilmek için, bu çalışmada disiyanodibenzo[f,h]kinoksalin türevleri tasarlandı. Ana bileşik olan disiyanodibenzo[f,h]kinoksalin akseptörü, donör- $\pi$ -akseptör tipi TADF elde etmek için öncelikle antrasen donörüyle birleştirildi. Yapıda daha sonra  $\pi$ -köprü eklenerek akabinde  $\pi$ -köprü değişikliği yapılarak yapısal ve elektronik özellikleri Yoğunluk Fonksiyonel Teorisi (DFT) ve Zamana Bağlı Yoğunluk Fonksiyonel Teorisi (TD-DFT) düzeyinde teorik olarak hesaplandı. Tasarlanan yapıların enerji bant aralığının ve singlet-triplet boşluğunun  $\pi$ -köprü değişimiyle nasıl değişeceği incelenmiştir. Bununla beraber TADF bileşikleri olup olmama potansiyelleri yorumlanmıştır.

**Anahtar Kelimeler:** Disiyanodibenzo[f,h]kinoksalin, TADF, DFT, TD-DFT



## Palyatif Bakımın Odak Noktası: Semptomların Belirlenmesi

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**Amaç:** Bu çalışma palyatif bakım alan hastaların deneyimledikleri semptomların belirlenmesi amacıyla yapılmıştır.

**Yöntem:** Bu çalışma bir devlet hastanesinin palyatif bakım kliniklerinde tedavi gören, acil servisten direkt olarak palyatif bakım kliniğine yatırılıp yapılan, 18 yaş üzeri olan, bilinci açık olan ve araştırmaya katılmayı kabul eden 60 hasta ile yapılmıştır. Veriler araştırmacılar tarafından hazırlanan hasta bilgi formu ve Edmonton Semptom Tanılama Ölçeği ile hasta yatışının ilk gününde toplanmıştır. İstatistiksel analizlerde sayı, yüzde, ortalama ve standart sapma kullanılmıştır. Kurum ve etik kurul onayı (2023/318) alınmıştır.

**Bulgular:** Hastaların %56.7'si kadındır. Katılımcıların en sık alzheimer, beslenme eksikliği, dispne, kanser, pnömoni ve serebrovasküler olay tanılarıyla yatışının yapıldığı ve tüm hastaların çoklu komorbiditeye sahip olduğu görülmüştür. (Tablo 1).

**Tablo 1. palyatif bakım hastalarının bazı değişkenlere göre incelenmesi**

Özellik	n	%
<b>Cinsiyet</b>		
Kadın	34	56.7
Erkek	26	43.3
<b>Tanı</b>		
Alzheimer	5	8.3
Beslenme eksikliği	9	15.0
Dispne	7	11.7
Kanser	6	10.0

Pnömoni	6	10.0
Serebrovasküler olay	7	11.7
Diğer	20	33.3
<b>Komorbidite</b>		
Evet	60	100
<b>Bağımlılık düzeyi</b>		
Bağımlı	20	33.3
Yarı bağımlı	31	51.7
Bağımsız	9	15.0
<b>Yaş</b>	77.61±11.64 (Min:37-Max:97)	

Hastalarda en çok yorgunluk, uykusuzluk, iştahsızlık ve iyi hissetmeme, en az ise elde uyuşma semptomları görülmüştür (**Tablo 2**).

**Tablo 2. Palyatif bakım hastalarının Edmonton Semptom Tanılama Ölçeği puanları**

Semptomlar	Ort±ss	Min-Max
<b>Ağrı</b>	3.21±2.45	0-9
<b>Yorgunluk</b>	6.40±2.03	1-9
<b>Bulantı</b>	4.18±2.83	0-9
<b>Üzüntü</b>	2.96±2.29	0-10
<b>Endişe</b>	3.28±2.42	0-9
<b>Uykusuzluk</b>	6.03±2.00	1-9
<b>İştahsızlık</b>	6.50±2.07	2-9
<b>İyi hissetmeme</b>	6.11±1.86	2-9
<b>Nefes darlığı</b>	4.73±3.01	0-9
<b>Ciltte değişiklik</b>	1.56±2.10	0-9
<b>Ağızda yara</b>	2.31±2.72	0-9
<b>Elde uyuşma</b>	0.88±1.41	0-5

**Sonuç:** Bu çalışmada palyatif bakım kliniğinde tedavi gören hastalarda sık rastlanan semptomların insidansının ve şiddetini ortaya koyulmuştur. Hastaların palyatif bakıma kabul edildiği ilk gününde belirlenen semptomlara yönelik planlanacak olan bireyselleştirilmiş ve bütüncül bakımın hastaların palyatif bakımdan optimum olarak faydalanacağına katkı sağlayacağı düşünülmektedir.

**Anahtar kelimeler:** Palyatif bakım, semptom, insidans

## SYNTHESIS OF CARBAZOL SUBSTITUTED PYRIMIDINYL CARBAMOYL BENZOIC ACID DERIVATIVES

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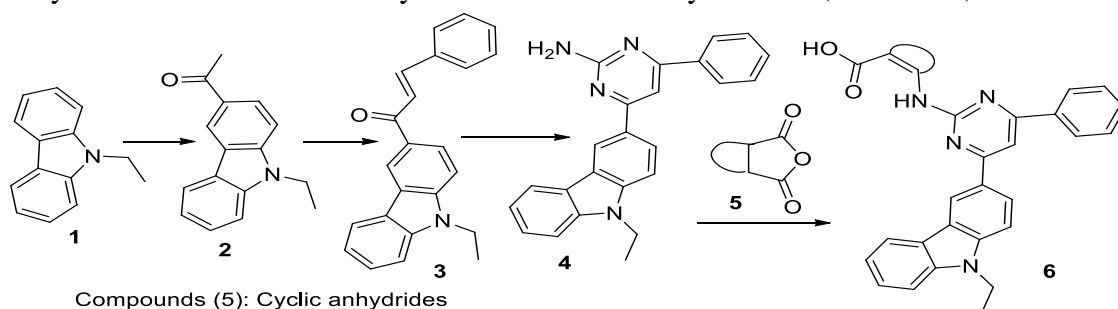
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### ABSTRACT

Carbazole derivatives are very important and they have attracted great attention due to their pharmacological activities. Ellipticin, a pido[3,4,-b]carbazole alkaloid, is isolated from the leaves of the Ochrosia elliptica tree and shows significant antitumor activity. Thus, pido[3,4,-b]carbazole alkaloids and their synthetic derivatives have become very interesting compounds. Indolo[2,3-a]carbazole alkaloids show a wide range of potential biological activities such as antifungal, antimicrobial, hypotensive, antitumor, protein kinase C and topoisomerase I inhibitor.<sup>1</sup> Pyridopyrimidine compounds are an important class among the heterocyclic compounds. They can be found in many drugs and have shown biological activities for instance; antiallergic, antibacterial, antitumor, anti-inflammatory, antileishmanial agents, carbonic anhydrase (CA) enzyme inhibition and polyphenol oxidase enzyme inhibitor.<sup>2</sup>

Carbazole substituted pyrimidinyl carbamoyl benzoic acid derivatives were prepared starting from carbazole in four step. Starting from the acetylation of carbazole, The procedure is completed by chalcone formation, the addition of guanidine and reaction with cyclic anhydrides. The structural analysis were carried out by <sup>1</sup>H NMR, <sup>13</sup>C NMR, MASS and FT-IR.



**Anahtar Kelimeler :** Carbazole, benzoic acid, pyrimidine

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## INVESTIGATION OF THE TOTAL PHENOLIC SUBSTANCE AND ANTIOXIDANT CAPACITY IN FIRETHORN (*PYRACANTHA COCCINEA*) FRUIT GROWN IN AKHİSAR REGION

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### ÖZET

Firethorn (*Pyracantha coccinea*) is a plant used in garden decoration and has small, red and sweet fruits. Various studies show that it has protective effects against diseases such as high blood pressure and heart. In this study, the total phenolic substance and antioxidant capacity of firethorn fruits were investigated by using different solvent types and extraction techniques. Fresh and dried firethorn fruits were extracted with ethanol, methanol, and water by Soxhlet extraction, stirring and homogenizer at room temperature. Total phenolic substance content was determined as gallic acid equivalent by the Folin–Ciocalteu method, and antioxidant capacity determinations were carried out according to DPPH and CUPRAC methods. Total phenolic substance content was found to be 372.04 mg GAE/100g fruit for fresh fruit and 4336.07 mg GAE/100g fruit for dried fruit in 4 hours of mixing. Mixing times of 4, 8 and 12 hours were also tested, and the obtained data showed that the most suitable technique for the extraction of phenolic compounds in firethorn fruit was mixing with methanol at room temperature for 12 hours.<sup>1</sup>

**Keywords:** *Pyracantha coccinea*, Firethorn, Total Phenolic Compounds, DPPH, CUPRAC.

<sup>1</sup> This study was supported by Tübitak 2209-A University Students Research Projects Support Program.