ABSTRACT BOOK

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July 4 - 6, 2025
RIZE

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KARADENIZ 18th INTERNATIONAL CONFERENCE ON APLIED SCIENCES

July 4 - 6, 2025

RIZE

Edited By

PROF. DR. HÜLYA ÇİÇEK

CONFERENCE ID

KARADENIZ 18TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES

DATE – PLACE
JULY 4 - 6, 2025
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Oral presentation

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Fakültemiz Tıbbi Biyokimya Anabilim Dalı'nda görevli öğretim üyesi Prof. Dr. Hülya ÇİÇEK'in Yükseköğretim Genel Kurulunun 15.06.2023 tarihli, 10 sayılı oturumunda alınan 2023.10.183 sayılı kararı gereğince Doçentlik Başvuru Şartlarında bulunan ve doçent olacak adaylardan istenen "Diğer uluslararası/ ulusal bilimsel toplantının düzenleme komitesinde resmi olarak görevlendirilmiş üniversite akademisyen temsilcisi bulunması zorunludur." maddesi gereğince, Academy Global Conference & Journals tarafından yapılan kongrelerin düzenleme kurullarında yolluksuz ve yevmiyesiz olarak görevlendirilme talebi ile ilgili dilekçesi ekte gönderilmiştir

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Salon	Moderator		Bildiri No ve Başlığı / Paper ID and Title	Authors
HALL / SALON 1	**Doç. Dr. Sinem ŞAHNAGİL**	1	EVALUATING DATA-DRIVEN POLICY FROM A BEHAVIOURAL PERSPECTIVE: DEPARTMENT OF BEHAVIOURAL PUBLIC POLICY AND NEW GENERATION TECHNOLOGIES	Doç. Dr. Sinem ŞAHNAGİL
		2	THE IMPACT OF DIGITAL MEDIA ON POPULIST SUCCESS IN THE CONTEXT OF PERCEPTION MANAGEMENT: HOW IS VOTER'S ACCESS TO INFORMATION SHAPING?	Doç. Dr. Sinem ŞAHNAGİL
		3	INTERNATIONAL REGULATIONS RELATED TO DISABILITY AND ITS REFLECTIONS ON TURKEY	Ayça GÖZÜM POLAT
		4	EFFECT OF ENVIRONMENTAL POLLUTION ON FLOOD OCCURRENCE AND ENVIRONMENTAL MEASURES TO BE TAKEN AND POLICIES TO BE IMPLEMENTED FOR EFFECTIVE FLOOD RISK MANAGEMENT	Dr. Öğr. Üyesi Sefa MIZRAK
		5	SİVİL TOPLUM KURULUŞLARINDA KURUMSAL RİSK YÖNETİMİ	GÖKBERK YILMAZ OĞUZ DOÇ. DR. HALİS KIRAL
		6	POLİTİCS BEHİND THE SCENES: THE POLİTİCAL THOUGHT OF MEHMED ZAHİD KOTKU AND REFLECTİONS ON TURKİSH POLİTİCS	Dr., FATMA NESİBE ÇOLAK

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HALL / SALON 2	**Doç. Dr. Canan YILDIRAN**	1	A BIBLIOMETRIC ANALYSIS ON FACTORS AFFECTING ELECTRIC VEHICLE PREFERENCE	Doç. Dr. Onur ÇELİK
		2	NON-UNION FEMALE WORKERS' PERCEPTIONS OF UNIONIZATION	Yüksek Lisans Öğrencisi ZEHRA KAMİTOĞLU Dr. Öğretim Üyesi BANU AÇIKGÖZ
		3	A REVIEW ON SUSTAINABLE DEVELOPMENT AND PUBLIC RELATIONS IN TEA AGRICULTURE	Assistant Professor Doctor Mehmet TATOĞLU
		4	TÜRKİYE'DE YEŞİL LOJİSTİK UYGULAMALARININ SÜRDÜRÜLEBİLİRLİK PERSPEKTİFİ VE YATIRIMCI KARARLARINA ETKİSİ	Yüksek Lisans Öğrencisi SEVİM MİHRİŞAH KARAKUŞ Dr. Öğr. Üyesi MEHMET YOLCU
		5	EXAMINING THE CRITICAL THINKING TENDENCIES OF UNDERGRADUATE STUDENTS	Doç. Dr. Canan YILDIRAN
		6	A BIBLIOMETRIC ANALYSIS OF THE IMPACT OF TRADE WARS ON GLOBAL SUPPLY CHAINS	Res. Asst. Dr., GÖZDE ÇAĞLAR GHASIDI

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HALL / SALON 3	**Doç. Dr. YASEMİN BAKİ**	1	The Effect of Concept Map Usage in Nursing Education	Nurse, Mehmet BAYAR Assistant Professor, Enes BULUT
		2	STUDENTS' SHIFTING PERSPECTIVES ON AI TOOLS IN EDUCATION	Assoc. Prof. Dr. MEHMET KANIK
		3	REVERSE ENGINEERING ACTIVITY IN SCIENCE TEACHING: BROKEN TELESCOPES	Student, MERVE BİLGİÇ Prof. Dr. UĞUR SARI
		4	FARKLI BÖLÜMLERDEKI ÖĞRETMEN ADAYLARININ KATI ATIK VE GERİ DÖNÜŞÜME YÖNELİK TUTUMLARININ BAZI DEĞİŞKENLER AÇISINDAN İNCELENMESİ	Yüksek Lisans Öğrencisi, ELANUR ÇELİK Prof.Dr.,TOHİT GÜNEŞ
		5	KORKAK BİR KAHRAMAN ADLI ÇOCUK KİTABININ ELEŞTİREL DÜŞÜNME BECERİLERİ AÇISINDAN İNCELENMESİ	Öğretmen, PINAR ERDEM Doç. Dr. YASEMİN BAKİ
		6	6. SINIF ÖĞRENCİLERİNİN ÖZETLEME BECERİLERİNİN DEĞERLENDİRİLMESİ	Doç. Dr. YASEMİN BAKİ Öğretmen, PINAR ERDEM
		7	TÜRKİYE ÖRNEĞİNDE EĞİTİMİN SOSYAL DEĞİŞMEYE ETKİSİ	YL Öğrencisi Erhan YAPRAK Dr.Öğr.Üyesi ZİYNET BAHADIR
		8	ÇOCUKLAR İÇİN FELSEFENİN ÇOCUKLARIN ELEŞTİREL DÜŞÜNME BECERİLERİNE ETKİSİ	Merve TAŞGIN Doç. Dr. Ümmühan YEŞİL DAĞLI

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HALL / SALON 4	**Doç. Dr. GÜLHANIM KARAOĞLU**	1	İLETİŞİM FAKÜLTESİ AKADEMİSYENLERİNİN SİBERKONDRİ (CYBERCHONDRİA) DÜZEYLERİ ÜZERİNE BİR ARAŞTIRMA	Prof. Dr. NACİ İSPİR Doç. Dr. GÜLHANIM KARAOĞLU
		2	YAPAY ZEKA UYGULAMALARININ YEREL GAZETECİLİĞE ETKİLERİ: ERZURUM YEREL BASIN ÇALIŞANLARI ÖRNEĞİ	Doç. Dr. GÜLHANIM KARAOĞLU Prof. Dr. NACİ İSPİR
		3	AMERİKAN SİNEMASINDA TOPLUMSAL CİNSYET ROLLERİ ÇERÇEVESİNDE KADININ DOMESTIC NOIR ÜZERİNDEN TEMSİLİ	Dr. ECE EROL
		4	IRAK BASININDA YER ALAN SAVAŞ HABERLERİNE YÖNELİK BİR İNCELEME: İSRAİL-GAZZE SAVAŞININ AL-SABAH VE AL-ZAMAN GAZZETESİ ÇERÇEVESİNDE ELE ALINMASI	Prof. Dr. ALİ KORKMAZ MUDHAFAR MOATASEM M. TAHER AL ABBAS
		5	İLETİŞİMDE GÖRÜNMEYEN DALGA: ÖRGÜTLERDE DUYGUSAL BULAŞMANIN ROLÜ	Dilek DURMUŞ Doç. Dr. Yasemin HANCIOĞLU BAŞKÖY
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HALL / SALON 5	**Dr. Öğr. Üyesi Zeynep BAKKALOĞLU**	1	THE EFFECT OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN MEDICAL TOURISM ON HEALTH PROFESSIONALS' CULTURAL COMPETENCE LEVELS	Yükseklisans Öğrencisi Kübra AKÇAY Doç. Dr. Fuat YALMAN
		2	SYSTEMATIC REVIEW OF THE ACADEMIC LITERATURE ON THE RELATIONSHIP BETWEEN EDIBLE INSECTS AND GASTRONOMIC TOURISM	Öğr. Gör., MERT CAN TEKELER Öğr. Gör. Dr, SİBEL ÖZDEMİR
		3	ORDU İLİNE AİT COĞRAFİ İŞARETLİ ÜRÜNLERİN RESTORAN MENÜLERİNDE KULLANILMA DURUMU	Turgay UÇAR DOÇ. DR. MEHMET KABACIK
		4	KARADENİZ GELENEKSEL MUTFAK EKİPMANI GUDAL/KUDAL'IN BİLİNİRLİĞİNİN İNCELENMESİ	Dr. Öğr. Üyesi Zeynep BAKKALOĞLU Doç. Dr. Mehmet Akif ŞEN
		5	TRABZON'DA BİR GASTRONOMİ ETKİNLİĞİ "AKÇAABAT OT FESTİVALİ"	Doç. Dr. Mehmet Akif ŞEN Dr. Öğr. Üyesi Zeynep BAKKALOĞLU
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HALL / SALON 6	**Assoc. Prof. Dr. Nazile Abdullazade**	1	THE TRANSFORMATION OF THE CONCEPTS OF ART AND CREATION THROUGH THE CENTURIES and LARRY SHINER'S "THE INVENTION OF ART"	Doç. Dr. Sevra FIRINCIOĞULLARI
		2	THE TIME AND SPACE THAT FITS THE POET IN ERDEM BAYAZIT'S WORLD OF POETRY	Batuhan ŞUORUÇ
		3	A LİTERARY EVALUATION: THE POETIC IDENTITY and POETRY OF CANSIZ HOCA	Zeynep Gül GÜNAYDIN
		4	A SOLARPUNK EXPLORATION OF ECO-SPIRITUALITY AND POSTHUMAN CONNECTION IN A PSALM FOR THE WILD-BUILT BY BECKY CHAMBERS	Öğr. Gör. Dr. Duygu KORONCU ÖZBİLEN
		5	POSTCRITIQUE AND INTIMACY IN OCEAN VUONG'S NOVEL ON EARTH WE'RE BRIEFLY GORGEOUS	Öğr. Gör. Dr. Duygu KORONCU ÖZBİLEN
		6	THE BAKU LITERARY ENVIRONMENT OF THE EARLY 20TH CENTURY and ALIAGHA VAHID'S CREATIVITY	Assoc. Prof. Dr. Nazile Abdullazade
		7	Epistemolojiden Ontolojiye: Dilthey'den Gadamer'e Hermeneutik Bir Geçiş	Doktora Öğrencisi Büşra Betül ÖZTÜRK GÜL Prof. Dr. Arslan TOPAKKAYA
		8	Hermeneutiğin Sınırları Üzerine: Gadamer'in Dilthey Eleştirisinin Değerlendirmesi	Doktora Öğrencisi, Büşra Betül ÖZTÜRK GÜL Prof. Dr. Arslan TOPAKKAYA

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HALL / SALON 7	**Associate Professor Sanver ÖZGÜVEN**	1	ÇAĞDAŞ SANAT PRATİĞİNDE GÜNDELİK YAŞAM OLGUSU	Yüksek Lisans Öğrencisi, Furkan YILDIRIM Dr. Öğr. Üyesi Mustafa SEVİNÇ
		2	AT THE INTERSECTION OF PARAMETRIC DESIGN AND 3D CERAMIC PRINTING: BRIAN PETERS' MODULAR PROJECTS	Associate Professor Sanver ÖZGÜVEN
		3	INNOVATIVE APPROACHES IN NGOZI OMEJE EZEMA'S CERAMIC ART: AN ANALYSIS OF THE LEAF SERIES	Associate Professor Sanver ÖZGÜVEN
		4	SUSTAINABILITY AND CIRCULAR ECONOMY IN THE FOOTWEAR INDUSTRY: WASTE REDUCTION THROUGH THE REPAIR OF WORN FOOTWEAR	MEHMET YILMAZ Asst. Prof. Dr. Serap KOCABIYIK ÇAŞKURLU
		5	GÖKÇEADA ÖZEL RUM İLKOKULU MÜZİK EĞİTİMİNİN VE ÇOCUK ŞARKILARININ DÜNÜ BUGÜNÜ	SY/DR Öğrencisi, İMREN ÖZ KESER Prof. Dr. UĞUR TÜRKMEN Prof. Dr. EMEL FUNDA TÜRKMEN
		6	BİR SÖZLÜ TARİH ÇALIŞMASI: AHMET KAŞIKÇI ESERLERİNDE MÜZİK	SY/DR Öğrencisi, İMREN ÖZ KESER Prof. Dr. UĞUR TÜRKMEN Prof. Dr. EMEL FUNDA TÜRKMEN
		7	KONTRBASIN ORKESTRALARA GİRİŞİ: 16. – 18. YÜZYIL ARASI BİR İNCELEME	Öğr. Gör. Hande Tokgöz
		8	ÇANAKKALE VICTORY HEROIC STORIES 10 STORIES 10 COMPOSITION PROJECT INVESTIGATION OF PERFORMANCE TECHNIQUES OF TURKISH MUSIC INSTRUMENTS	Burak DEMİRBAŞ Prof. Dr. Uğur TÜRKMEN
		9	AN EXAMPLE OF PROGRAMMATIC MUSIC IN TURKISH MUSIC PERFORMANCE: "YÜKSEK RUH"	Burak DEMİRBAŞ Prof. Dr. Uğur TÜRKMEN

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HALL / SALON 1	**Assoc. Prof. Dr. Sahar Mohammadi**	1	SIMULATING FUNDAMENTAL PROCESSES OF HUMAN CONSCIOUSNESS	Dr. Leila Haddad
		2	EXPLORING THE ROLE OF PSYCHOSOCIAL FACTORS IN ADDICTION RECOVERY: INSIGHTS FROM INDIA	Dr. Priya Mehta Dr. Arjun Desai
		3	IMPROVING ORGANIZATIONAL JUSTICE IN INCENTIVE ALLOCATION WITHIN THAILAND'S PUBLIC SECTOR	Assoc. Prof. Dr. Somchai Rattanapong
		4	GENDER DIFFERENCES IN AUTOBIOGRAPHICAL MEMORY AND ADAPTIVE RECOLLECTION STRATEGIES	Dr. Ainhoa Etxebarria Dr. Rajiv Kumar
		5	THE IMPACT OF CULTURAL ANXIETY ON INTERNATIONAL STUDENTS AT WUHAN UNIVERSITY	Dr. Farid Al-Mansouri Dr. Li Na
		6	ADDRESSING RE-VICTIMIZATION: PSYCHOLOGICAL AND LEGAL PERSPECTIVES	Prof. Dr. Helena Novak
		7	NARRATIVE THEORY AND ORGANIZATIONAL CHANGE: CASE STUDIES OF MERGERS AND ACQUISITIONS	Dr. Omar Al-Farouq
		8	COMPARATIVE ANALYSIS OF ATTACHMENT PATTERNS IN NURSERY-RAISED AND FAMILY-RAISED CHILDREN IN IRAN	Assoc. Prof. Dr. Sahar Mohammadi

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HALL / SALON 2	**Assoc. Prof. Dr. Giulia Bianchi**	1	TRUST DYNAMICS AND LEARNING BEHAVIORS IN VIRTUAL TEAM ENVIRONMENTS	Prof. Dr. Amina Yusuf Dr. Samuel Okeke
		2	ENHANCED AUTOMATED DIFFERENTIATION BETWEEN ALCOHOL DEPENDENCE AND SOBRIETY	Dr. Farid Rahman
		3	RHETORICAL STRATEGIES IN COGNITIVE SCIENCE DISCOURSE: ANALYSIS OF COGNITIVE NEUROSCIENCES (2004) IN SCIENTIFIC COMMUNICATION	Lucia Moretti Assoc. Prof. Dr. Giulia Bianchi
		4	MORAL REASONING AND BEHAVIORAL PATTERNS IN ADULTHOOD	Carlos Mendoza Elena García
		5	INVESTIGATIONS INTO THE ROLE OF EMOTIONS IN MORAL DECISION-MAKING	Dr. Ahmed El-Sayed
		6	EFFECTS OF PROBABILITY AND INSTRUCTION ON SYLLOGISTIC CONDITIONAL REASONING	Ivan Dimitrov
		7	ANALYZING KANJI CHARACTER RECOGNITION PROCESSES USING EEG SIGNALS	Hiroto Tanaka Kenji Nakamura
		8	INNOVATIVE APPROACHES TO TEACHING INTRODUCTORY STATISTICS IN HEALTH, SOCIAL, AND BEHAVIORAL SCIENCES: HISTORICAL PERSPECTIVES AND JUSTIFICATIONS	Dr. Maria Rossi

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HALL / SALON 3	**Assoc. Prof. Dr. Helena Schmidt**	1	A COGNITIVE FRAMEWORK FOR CLASSIFYING FREQUENCY SIGNALS	Rui Santos Fernando Oliveira
		2	IMPACT OF ASSISTED REPRODUCTIVE TECHNOLOGIES ON WOMEN'S EXPERIENCES IN NEW DELHI: A FEMINIST ANALYSIS	Dr. Anjali Mehta
		3	ADDRESSING THE MISUSE OF LEGAL AUTHORITY IN SOCIETY	Dr. Olufemi Adeyemi
		4	URBAN POVERTY AND SOCIAL STRUCTURES: THE ROLE OF INVOLUNTARY RELATIONSHIPS	Dr. Farid Al-Mansouri
		5	TECHNICAL KNOWLEDGE TRANSFER AND THE CHALLENGES OF TRANSLATING SPECIALIZED TEXTS	Dr. Youssef El-Khatib
		6	THE INFLUENCE OF ISLAMIC ART TRADITIONS ON OMANI TEXTILE MOTIFS	Dr. Aisha Al-Harthy
		7	MANAGING COMPLEXITY IN SYSTEM DESIGN: PARADIGMS, FORMALISMS, AND TRANSFORMATION TECHNIQUES	Dr. Karim Ben Saad Dr. Laurent Dupont
			EUROPE'S INFLUENCE IN LIBERTY, SECURITY, AND JUSTICE: A STUDY OF ITS ROLE AS AN INTERNATIONAL ACTOR	Assoc. Prof. Dr. Helena Schmidt
		8	MIGRATION PATTERNS AND METHODOLOGICAL APPROACHES TO OUT-MIGRATION IN GEORGIA	Nino Giorgadze

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HALL / SALON 4	**Dr. Mariana Costa**	1	ANALYZING STUDENTS' RESPONSES TO THE MODIFIED RORSCHACH COMPREHENSIVE SYSTEM: A PSYCHOLOGICAL PERSPECTIVE	Thabo Mokoena, Sipho Dlamini, Naledi Khumalo
		2	MOTIVATIONAL FACTORS AND OBSTACLES TO RECYCLING IN KOTA KINABALU, MALAYSIA	Nurul Aisyah, Faridah Hassan, Lim Wei Jie,
		3	EVALUATING THE EFFECTIVENESS OF METAPHOR THERAPY ON DEPRESSION IN FEMALE UNIVERSITY STUDENTS	Dr. Fatemeh Hosseini
		4	INVESTIGATING SECOND LANGUAGE WRITING AND SENSITIVITY IN NON-ENGLISH LANGUAGE TASKS: PROFICIENCY ANALYSIS	Dr. João Pereira, Dr. Mariana Costa
		5	HIERARCHICAL MODELING OF COGNITIVE AND BEHAVIORAL DIFFICULTIES IN UNDERREPRESENTED POPULATIONS	Li Wei, Chen Ming
		6	COMPARING MUSICAL NOTATION AND ALPHABET READING: TEACHING IMPLICATIONS FOR DYSLEXIC LEARNERS	Assoc. Prof. Dr. Rachel Stein
		7	ANALYSIS OF FATIGUE AND DROWSINESS AMONG NIGHT-TIME PASSENGER TRANSPORT WORKERS IN JAPAN	Kenji Nakamura
		8	UTILIZING DIGITAL GAMING FOR EDUCATIONAL SUPPORT: STRATEGIES TO ADDRESS LEARNING CHALLENGES	Dr. Eleni Papadopoulou
		9	THE INTERPLAY BETWEEN JOB SATISFACTION, MOTIVATION, AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR	Dr. Faisal Ahmed

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HALL / SALON 5	**Assoc. Prof. Dr. Tao Guang Dr. Lucia Cirelli**	1	CHALLENGES IN LEGAL REGULATION OF INTELLECTUAL PROPERTY RIGHTS IN INNOVATION ACTIVITIES: AN INSTITUTIONAL APPROACH IN RUSSIA	Wei Zhang
		2	EXPLORING LEADERSHIP BEHAVIOR, SAFETY CULTURE, AND PERFORMANCE IN THE HEALTHCARE INDUSTRY: A COMPREHENSIVE STUDY	Liang Chen Mei Lin
		3	COMPARATIVE ANALYSIS: ASSESSING TRAINED INSPECTORS' PERFORMANCE ACROSS VARIED WORKLOADS VIA FEEDFORWARD VS. FEEDBACK TRAINING APPROACHES	Assoc. Prof. Dr. Anan Phongchai
		4	ASSESSING OPERATIONAL RISKS IN MALAYSIAN HIGHWAY PROJECTS	Assoc. Prof. Dr. Ahmad Zulkifli Dr. Nurul Huda
		5	BEST PRACTICES FOR CRAFTING TENDERS IN MALAYSIA'S BUILDING CONSERVATION PROJECTS	Dr. Siti Aishah
		6	THE INDEX OF SUSTAINABLE FUNCTIONALITY: A TOOL FOR ASSESSING SUSTAINABILITY	Assoc. Prof. Dr. Tao Guang Dr. Lucia Cirelli
		7	EXAMINING KNOWLEDGE SHARING BEHAVIOR IN E-COMMUNITIES THROUGH THE LENS OF TRANSACTION COST THEORY	Teresa Ju Chang Wu
		8	ADVANCING AN EFFICIENT FRAMEWORK FOR SECURE MOBILE APPLICATION DESIGN, DEVELOPMENT, AND UTILIZATION	Mohamed Serhan Rachida Abdelghani Rabeb Benharref

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HALL / SALON 6	**Assoc. Prof. Dr. Niran Chaiyaporn**	1	EXPLORING INTERNET GOVERNANCE THROUGH MULTIPLE STAKEHOLDERS: OPPORTUNITIES, CHALLENGES, AND ADVANCEMENTS	Prof. Dr. Lukas Meier
		2	THE IMPACT OF HARDINESS AND ALIENATION ON BURNOUT AND DATA ENTRY ERRORS IN RURAL GREEK HOSPITAL LABORATORIES	Eleni Papadopoulou Aphrodite Koulouri
		3	GUIDELINES AND REQUIREMENTS FOR DEVELOPING TEAM AWARENESS SYSTEMS	Dr. Henrik Larsen
		4	AN ANALYTICAL APPROACH TO THE ADOPTION OF WIRELESS AND INTERNET TECHNOLOGIES IN LOGISTICS	Assoc. Prof. Dr. Niran Chaiyaporn
		5	GENDER DIFFERENCES IN SEXUAL PERCEPTION AND BEHAVIOR AMONG MARRIED ILOCANOS	Maricel Bautista
		6	EXAMINING INTERNET USER BEHAVIOR AND ITS INFLUENCE ON MARRIAGE TABOOS: A SURVEY OF UNDERGRADUATE STUDENTS IN MASHHAD, IRAN	Fatemeh Rahimi Leila Mohammadi Saeid Khosravi
		7	UTILIZING PERSUASIVE TECHNOLOGY TO ENHANCE IT SECURITY AWARENESS AND USER BEHAVIOR: A PILOT STUDY	Md. Hasanuzzaman Dr. Tan Wei Ling Ms. Siti Nurhaliza

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HALL / SALON 1		1	BELEDİYELER ŞİRKETLERİNDE İŞ SAĞLIĞI VE GÜVENLİĞİ DENETİMİ VE YÜKÜMLÜLÜKLER	Avukat, Beyza ÖZÇİÇEK YILANCI
		2	ZİNA SEBEBİYLE BOŞANMA DAVASI AÇMA HAKKINI ORTADAN KALDIRAN HALLER	Dr. Öğr. Üyesi, HARUN MİRSAD GÜNDAY Av. , AHMET BURAK HASPAYLAN
		3	Nükleer Tesislere Yapılan Saldırılın Hukuki Değerlendirmesi	Zuhair MENDELI
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HALL / SALON 2	**Öğr. Gör. TUĞBA TOSUN**	1	EXAMINING THE RELATIONSHIP BETWEEN FORGIVENESS FLEXIBILITY AND SELF-COMPASSION	Öğr. Gör. TUĞBA TOSUN Prof. Dr. MUSTAFA KOÇ
		2	AİLE İŞLEVSELLİĞİ VE SOSYAL MEDYA KULLANIMI ARASINDAKİ İLİŞKİDE ORTAK EBEVEYNLİĞİN ARACI ROLÜ	Çiğdem AYTEK Dr. Öğr. Üyesi Bekir ÇELİK
		3	EKONOMİK STRES VE ROMANTİK İLİŞKİLER: GENÇ YETİŞKİNLİK DÖNEMİNDE BİR PSİKOSOSYAL ETKİ OLARAK DEĞERLENDİRİLMESİ	Burak ERELİ Doç. Dr. Hanife AKGÜL
		4	EXAM ANXİETY AMONG STUDENTS PREPARİNG FOR THE HİGH SCHOOL ENTRANCE EXAM	Ferda GÜLMEZ
		5	ÖZ ŞEFKAT VE DUYGU DÜZENLEME GÜÇLÜĞÜ ARASINDAKİ İLİŞKİDE ÇOCUKLUK ÇAĞI TRAVMATİK YAŞANTILARIN ARACI ROLÜ	Buse DEMİRHAN Dr. Öğr. Üyesi, Hakan DUMAN

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HALL / SALON 3	**Dr. Öğr. Üyesi Oğuzhan Bahadır DEMİR**	1	Diyabette Hipoglisemi Korkusunun Anksiyete ile İlişkisi	Nupelda Uludağ Prof. Dr. Hamdiye Arda Sürücü
		2	ECO-ANXIETY AND ITS EFFECTS ON MENTAL HEALTH	NUPELDA ULUDAĞ Hamdiye ARDA SÜRÜCÜ
		3	THE EFFECT OF FATALISM LEVEL ON HEALTH BEHAVIOURS	Nurse, Merve Nur ALPASLAN Assistant Professor, Enes BULUT
		4	ANXIETY AND MANAGEMENT AFTER MYECARDIAL INFARCTION IN THE INTENSIVE CARE UNIT	Hemşire, FEHMİ DOĞAN Prof. Dr., HAMDİYE ARDA SÜRÜCÜ
		5	MORALE LEVEL AS A PREDICTOR OF ADJUSTMENT DIFFICULTIES IN THE ELDERLY	Dilara YAĞMURKAYA BALCANCI Assoc. Prof. Dr. Oya Sevcan ORAK
		6	KOAH HASTALARINDA SAĞLIKLI YAŞAM ALIŞKANLIKLARI VE KADERCİLİK ALGISI	Hemşire, RABİA DEMİRCİ Dr. Öğr.Üyesi, FİGEN ÇAVUŞOĞLU
		7	EFFECT OF NURSING EDUCATION ON GLYCEMIC CONTROL IN TYPE 2 DIABETES PATIENTS: LITERATURE REVIEW	Hemşire, SERHAT BELENAY Prof. Dr. HAMDİYE ARDA SÜRÜCÜ
		8	Üniversite Öğrencilerinde Uyku Kalitesinin Denge ve Kinezyofobi ile İlişkisi	Dr. Öğr. Üyesi Oğuzhan Bahadır DEMİR Kübra ÖZENÇ Gamze YILDIZ Mustafa Kamil KAYA
		9	SOSYAL MEDYA BAĞIMLILIĞI: BİREY VE TOPLUM ÜZERİNDEKİ ETKİLERİ	Hemşire Hasan Polat Doç.Dr. Gülhan Yiğitalp,

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HALL / SALON 4	**Dr. Ömer Karakoç**	1	HAFİF SINIF SİLAHLI İNSANSIZ KARA ARACI İÇİN ENTEGRE SİSTEM YAKLAŞIMI	Nurullah Emin ERGEZEN Hakan ADEMOĞLU Funda AKAR
		2	SES VERİLERİNİ SINIFLANDIRMAK İÇİN OPTİMİZE EDİLMİŞ RANDOM FOREST MODELİ: ÖZELLİK ÇIKARIMI VE HİPERPARAMETRE AYARI	Yüsra DAĞILMA Doç. Dr. Erdal ÖZBAY
		3	TRANSFER ÖĞRENME YÖNTEMLERİYLE BEYİN TÜMÖRÜ TESPİTİ	Sümeyye SARIATEŞ Dr. Öğr. Üyesi Gülşah KARADUMAN Doç. Dr. Erdal ÖZBAY
		4	VERİ AMBARI ETL SÜREÇLERİNDE DEĞİŞEN VERİ YAKALAMA YÖNTEMİNİN KULLANILMASINA YÖNELİK ENERJİ SEKTÖRÜNDE BİR UYGULAMA	AHMET GÜRGAŞİN PROF. DR. TALİP KELLEGÖZ
		5	Electre Yöntemiyle Sosyal Medya Platformlarının Gelir Modelleri Karşılaştırılması	Aysu Sever Beyza Tuncer Çağatay Özmut Dr. Öğr. Üyesi Selçuk Özcan
		6	ENERGY PLANNING VIA PICTURE FUZZY PREVALENCE EFFECT METHOD	Dr. Ömer Karakoç Assoc. Prof. Dr. Samet Memiş
		7	ARTIFICIAL INTELLIGENCE-BASED APPROACHES TO FIGHT CYBER BULLYING	Asst. Prof, Faruk AYATA Tahsin YILDIZ

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HALL / SALON 5	**Doç. Dr. Ümit AYATA**	1	EVALUATION OF BINGÖL UNIVERSITY STREET IN TERMS OF BARRIER-FREE LANDSCAPE APPROACHES AND ACCESSIBILITY	Araştırma Görevlisi, İlknur YAZICI Dr. Öğr. Üyesi, Ayşenur AKBANA
		2	FLEXIBLE DESIGN CRITERIA IN URBAN OPEN SPACES: AN EXAMINATION OF OPEN SPACE PRODUCTIONS IN THE LANDSCAPE ARCHITECTURE DISCIPLINE	Prof. Dr. Elif Merve ALPAK Prof. Dr. Tuğba DÜZENLİ Research Ast. Nida KURAK SEZGİN
		3	AN EVALUATİON OF THE THEME OF FREEDOM İN THE CONTEXT OF BASİC DESİGN PRİNCİPLES, DESİGN ELEMENTS AND GESTALT THEORY	Prof. Dr. Elif Merve ALPAK Prof. Dr. Tuğba DÜZENLİ Research Ast. Nida KURAK SEZGİN
		4	NATURALNESS ON LANDSCAPE DESIGN: PERCEPTUAL AND FORMAL APPROACHES	Prof. Dr. SERAP YILMAZ Res.Asst. Dr. ABDULLAH ÇİĞDEM
		5	THE CONCEPT OF ICONICITY IN DESIGN: EXAMPLES FROM LANDSCAPE ARCHITECTURE	Prof. Dr. SERAP YILMAZ Res.Asst. Dr. ABDULLAH ÇİĞDEM
		6	The Application of Flaxseed Oils with Different Properties on the Surfaces of Fir Wood Thermally Treated in Accordance with ISPM 15 Standard	Prof. Dr. Hüseyin PEKER Doç. Dr. Göksel ULAY Doç. Dr. Ümit AYATA
		7	The Application of Wood Finishing Oils of Different Types to Thermally Modified Anatolian Chestnut Wood	Prof. Dr. Hüseyin PEKER Doç. Dr. Göksel ULAY Doç. Dr. Ümit AYATA
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HALL / SALON 6	**Yük. Müh. Enes AKÇAY**	1	EVALUATION OF LOW-TEMPERATURE WASTE HEAT WITH ORC SYSTEMS: PERFORMANCE COMPARISON OF DIFFERENT WORKING FLUIDS	Yük. Müh. Enes AKÇAY Öğr.Gör. Dr. Arzu KEVEN
		2	THERMODYNAMIC AND EXERGY ANALYSIS OF A SOLAR-ASSISTED HYBRID ENERGY AND WATER PRODUCTION SYSTEM	Yük. Müh. Enes AKÇAY Öğr.Gör. Dr. Arzu KEVEN
		3	T BIRLEŞIMLI BOŞLUKLU HAFIF ÇELIK ÇERÇEVELERIN MOMENT-DÖNME KARAKTERISTIK DAVRANIŞININ İNCELENMESI	Prof. Dr. ABDULKADİR CÜNEYT AYDIN NESLİŞAH GÜLOĞLU Doç. Dr. MAHYAR MAALİ NURULLAH ÇINAR
		4	UZAK KIRSAL YERLEŞİMLERİN ELEKTRİFİKASYONU İÇİN HİBRİT ENERJİ SİSTEMLERİNİN OPTİMİZASYONU: BATMAN, HASANKEYF ÖRNEĞİ	Ali Serkan Avcı Seda Fahriye Yavaşoğlu
		5	A NOTE ON ABSOLUTE MATRIX SUMMABILITY METHOD	Prof. Dr. Hikmet Seyhan ÖZARSLAN Assoc. Prof. Dr. Bağdagül KARTAL ERDOĞAN
		6	ON THE ALMOST INCREASING SEQUENCES	Prof. Dr. Hikmet Seyhan ÖZARSLAN Başak AKGÜL

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HALL / SALON 7	**Doç. Dr. NECİP ÜNLÜ**	1	AISI 1020 ÇELİĞİNİN YÜZEYİNDE GERÇEKLEŞTİRİLEN NİKEL SÜLFOMAT KAPLAMALARA BORİK ASİT İLAVESİNİN, KAPLAMA ÖZELLİKLERİ ÜZERİNE ETKİSİ	Ömercan SİVRİ Prof.Dr. Uğur ŞEN
		2	SYNTHESIS AND CHARACTERIZATION OF CaO 2 NANOPARTICLES FOR BIOMEDICAL APPLICATIONS	Asst. Prof .Dr. FATİH TURAN Prof. Dr. AYLİN M. DELİORMANLI
		3	INVESTIGATION OF THE EFFECT OF POLYVINYLPYRROLIDONE (PVP) AMOUNT AND MOLECULAR WEIGHT ON THE SYNTHESIS OF PLATINUM NANOPARTICLES	Asst. Prof .Dr. FATİH TURAN Prof. Dr. AYLİN M. DELİORMANLI
		4	WHAT IS THE NONDESTRUCTIVE TESTING?	Doç. Dr. NECİP ÜNLÜ
		5	KİTOSAN BAZLI Semi-IPN HİDROJELLERİN SENTEZİ, ŞİŞME DAVRANIŞLARI VE BU DAVRANIŞLARA ETKİ EDEN PARAMETRELER	Polimer Mühendisi, Sıdıka Eylül GÖREN Prof.Dr. Hidayet MAZI
		6	KİTOSAN BAZLI Semi-IPN HİDROJELLERİN DİNAMİK ŞİŞME VE FİCK DİFÜZYON KİNETİĞİ	Polimer Mühendisi, Sıdıka Eylül GÖREN Prof.Dr. Hidayet MAZI

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HALL / SALON 1	**Assoc. Prof. Dr. Marcela López**	1	CROSS-CULTURAL ANALYSIS OF ALCOHOL CONSUMPTION PATTERNS AMONG ETHNIC GROUPS IN RURAL BANGLADESH	Dr. Farhana Akter
		2	STAKEHOLDER MAPPING IN THE FORMATION AND GROWTH OF INDEPENDENT CONSUMER GROUPS IN THAILAND	Dr. Kanya Chaiyaporn
		3	THE IMPACT OF SOCIAL INTEGRATION ON PERFORMANCE IN THE AUTOMOTIVE INDUSTRY: A MULTI-COUNTRY STUDY	Carlos Mendes
		4	FRAMEWORK FOR DEVELOPING EDUCATIONAL GAMES BASED ON OUTCOME-ORIENTED LEARNING MODELS	Ratih Wulandari Dewi Kartika Sari Putri
		5	EVALUATING PEDAGOGICAL QUALITY IN DIGITAL LIBRARY RESOURCES: A CASE STUDY OF SOLARSPELL	Assoc. Prof. Dr. Marcela López
		6	EXPLORING ALTERNATE REALITY GAMES FOR EDUCATIONAL PURPOSES: A STUDY AT UNIVERSITY OF CAPE TOWN	Thandiwe Ndlovu
		7	INNOVATIVE APPROACHES TO ENGINEERING EDUCATION REFORM IN URBAN PLANNING AT TSINGHUA UNIVERSITY, CHINA	Li Wei Zhang Feng
		8	CROSS-CULTURAL ANALYSIS OF ALCOHOL CONSUMPTION PATTERNS AMONG ETHNIC GROUPS IN RURAL BANGLADESH	Dr. Farhana Akter

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HALL / SALON 2	**Assoc. Prof. Dr. Amir Hosseini**	1	EVALUATING THE EFFECTIVENESS OF INTERACTIVE QUIZ PLATFORMS IN ENHANCING STUDENT ENGAGEMENT	Lina Ahmed
		2	ANALYSIS OF LEARNING OUTCOMES IN ELECTRICAL ENGINEERING CURRICULA: A STUDY FOCUSING ON CIRCUIT THEORY	Dr. Samuel Ochieng
		3	DISTANCE EDUCATION AND CONTINUOUS PROFESSIONAL DEVELOPMENT: INSIGHTS FROM A GREEK UNIVERSITY CASE STUDY	Prof. Dr. Eleni Papadopoulos
		4	IDENTIFYING STRATEGIES TO IMPROVE STUDENT EMOTIONAL WELL-BEING THROUGH FEEDBACK ANALYSIS	Maria Petrova Anjali Singh
		5	TEACHERS' ATTITUDES TOWARD INCLUSIVE EDUCATION FOR STUDENTS WITH HEARING IMPAIRMENTS	PhD Candidate Kiran Sharma
		6	ADVANCING INTERNATIONAL SERVICE LEARNING THROUGH TECHNOLOGICAL INNOVATIONS FOR SUSTAINABILITY	Dr. Michael Johnson
		7	IMPLEMENTING FLIPPED CLASSROOM MODELS TO ENHANCE FRENCH LANGUAGE LITERACY IN HIGHER EDUCATION	Dr. Sofia Larsson
		8	THE IMPACT OF FLIPPED CLASSROOMS ON ATTENTIVE READING SKILLS IN FRENCH AS A FOREIGN LANGUAGE	Faridah Ahmad Dr. Amir Hosseini
		9	MOTION GRAPHICS AS A TOOL FOR ENHANCED TRAINING OF PRESCHOOL CHILDREN WITH HEARING IMPAIRMENTS	Assoc. Prof. Dr. Amir Hosseini

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HALL / SALON 3	**Prof. Dr. Ricardo Silva**	1	EVALUATING THE EFFECT OF CLASS PARTICIPATION ON ACADEMIC PERFORMANCE: A CASE STUDY OF MECHANICAL ENGINEERING STUDENTS IN SOUTH AFRICA	Dr. Thandiwe Mokoena
		2	ENHANCING CIVIL ENGINEERING LABORATORY LEARNING THROUGH INTERACTIVE DIGITAL TOOLS	Assoc. Prof. Dr. Miguel Fernandez Dr. Lucia Alvarez
		3	DEVELOPING AUTONOMOUS LEARNING AGENTS USING SEQUENTIAL CONSTRUCTIVIST MODELS	Jean-Luc Moreau Sophie Dubois
		4	ASSESSING THE ECONOMIC IMPACT OF HUMANITIES EDUCATION IN PUBLIC UNIVERSITIES IN GHANA	Dr. Kwame Mensah
		5	MODELING TECHNOLOGICAL ADOPTION IN BUSINESS STUDENTS: A STUDY FROM COLOMBIA	Carlos Ramirez Maria Gomez
		6	INTERCULTURAL STRATEGIES FOR SECOND LANGUAGE ACQUISITION IN HIGHER EDUCATION: A PILOT STUDY IN PERU	Ana Lucia Torres Jorge Castillo
		7	DESIGNING ITERATIVE SELF-CORRECTION FRAMEWORKS FOR EDITORIAL WORKFLOWS	Ivan Kuznetsov Olga Smirnova
			IMPLEMENTING REALISTIC SIMULATION METHODS IN BRAZILIAN MEDICAL EDUCATION CURRICULA	Prof. Dr. Ricardo Silva
		8	EXPLORING THE COSTS AND BENEFITS OF COMMERCIALIZATION IN HIGHER EDUCATION: A CASE STUDY FROM NEW ZEALAND	Dr. Thandiwe Mokoena

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HALL / SALON 4	**Dr. Magdalena Kowalczyk**	1	THE EVOLUTION OF JUDICIAL PRINCIPLES IN SOUTHEAST ASIAN LEGAL SYSTEMS	Assoc. Prof. Dr. Ananda Suphakit
		2	RELIGIOUS FREEDOM AND EMPLOYEE RIGHTS: A CRITICAL ANALYSIS OF PORTUGUESE CONSTITUTIONAL LAW	Maria Fernandes
		3	CERTIFICATION PROCEDURES AND GOVERNMENT ACCOUNTABILITY IN ARMENIA	Aram Petrosyan
		4	EFFECTIVE GOVERNANCE MODELS WITHIN THE EUROPEAN UNION: PRINCIPLES AND PRACTICES	Dr. Magdalena Kowalczyk
		5	THE ROLE OF CONSERVATIVE WOMEN'S GROUPS IN SHAPING U.S. FOREIGN POLICY	Assoc. Prof. Dr. Emily Carter
		6	AUTOPSY STUDY ON ABDOMINAL TRAUMA IN ROAD ACCIDENT VICTIMS: MORPHOLOGICAL AND RISK ANALYSIS	Marko Jovanović
		7	IMPLEMENTING THE EUROPEAN FORENSIC SCIENCE VISION 2020: STRATEGIC APPROACHES IN LITHUANIA	Eglė Petrauskaitė Vidmantas Šimkus Snieguolė Vaitkevičiūtė
			MODERNIZING THE EUROPEAN COMPETITION NETWORK: STRATEGIC FRAMEWORKS AND FUTURE DIRECTIONS	Sigutė Žukauskaitė
		8	STRATEGIES FOR THE REVITALIZATION OF THE EUROPEAN COMPETITION NETWORK	Dr. Nadia Al-Farouq

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HALL / SALON 5	**Dr. Supaporn Chaiyasit**	1	EXAMINING ADDITIONAL PREDICTORS OF DIETARY INTENTIONS IN TYPE 2 DIABETES PATIENTS	James Mwangi
		2	THE INFLUENCE OF LEARNING PREFERENCES ON CREATIVE IDEA GENERATION IN EDUCATIONAL SETTINGS	Nurul Huda
		3	EFFECTS OF COGNITIVE-BEHAVIORAL THERAPY AND SELF-CONCEPT INTERVENTIONS ON RESILIENCE AND AGGRESSION IN MALAYSIAN AT-RISK YOUTH	Mohammed Al-Farouq
		4	LIFESTYLE ANALYSIS OF GOVERNMENT EMPLOYEES IN THE ROYAL HOUSEHOLD DEPARTMENT: A BANGKOK CASE STUDY	Dr. Supaporn Chaiyasit
		5	THE IMPACT OF MEDITATIVE TRATAKA PRACTICE ON ANXIETY REDUCTION AMONG ADOLESCENTS	Anjali Desai
		6	IMPLEMENTATION OF SUFFICIENCY ECONOMY PRINCIPLES BY URBAN LEADERS IN BANGKOK: PERFORMANCE AND STRATEGIC ACTIVITIES	Assoc. Prof. Dr. Somchai Niran
		7	NEUROPLASTICITY AND ITS ROLE IN LIFE REHABILITATION AND RENEWAL	Leila Farahani
		8	PEER-BASED INTERVENTIONS TO ADDRESS SOCIAL COMMUNICATION CHALLENGES IN ADOLESCENTS WITH AUTISM: A LITERATURE REVIEW AND FUTURE DIRECTIONS	Christine Cole

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HALL / SALON 6	**Assoc. Prof. Dr. Eui Jun Jeong,**	1	INTELLIGENT ENERGY CONSUMERS: EXPLORING THE INTENTIONS BEHIND EMBRACING INNOVATIVE CONSUMPTION PATTERNS	Dr. Cecilia Kamila, Vincenzo Perri Corvello
		2	GENDER DISPARITIES IN MATHEMATICS ANXIETY AMONG STUDENTS	Wern Lin Yeo, Choo Kim Tan, Sook Ling Lew
		3	UTILIZING THE MMSE-2:EV FOR DIAGNOSTIC INSIGHTS IN COGNITIVE IMPAIRMENT: CASE STUDIES AND MONITORING	Cornelia- Munteanu Eugenia
		4	EXAMINING STUDENTS' BRAIN ELECTRICAL RESPONSES TO TEACHER'S EMOTIONAL CUES	Dr. Hye Rim Lee
		5	PERSONALITY TRAITS AND COMPULSIVE GAMING: EXPLORING THE INFLUENCE OF THE BIG FIVE	Assoc. Prof. Dr. Eui Jun Jeong,
		6	PARENTING APPROACHES AND HOUSEHOLD COMMUNICATION DYNAMICS AMONG COLLEGE STUDENTS	Lecture Pegah Farokhzad
		7	UTILIZING EMOTICONS IN COURTEOUS EXPRESSIONS OF GREETINGS AND APPRECIATION	Dr. Zuzana Komrsková
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HALL / SALON 7	**Assoc. Prof. Dr. Yerlan Bekbolat**	1	METHODOLOGICAL APPROACHES TO ENHANCING MATHEMATICAL UNDERSTANDING USING VIRTUAL LEARNING ENVIRONMENTS IN UK SECONDARY SCHOOLS	Dr. Aigerim Zhanarbek
		2	INTEGRATING DIGITAL TOOLS TO PROMOTE COLLABORATIVE LEARNING AND STUDENT ENGAGEMENT	Nurul Aisyah Binti Mohamad
		3	THE IMPACT OF MULTIMEDIA EDUCATIONAL GAMES ON PRIMARY SCHOOL STUDENTS' LEARNING OUTCOMES	Assoc. Prof. Dr. Yerlan Bekbolat
		4	MOBILE LEARNING STRATEGIES FOR INCLUSIVE EDUCATION IN MULTICULTURAL SETTINGS	Siti Noraini Binti Abdullah
		5	INTERACTIVE E-LEARNING PLATFORMS TO SUPPORT MATHEMATICS SELF-STUDY FOR PROFESSIONAL EXAM PREPARATION	Daulet Nursultan
		6	FEASIBILITY STUDY OF VIRTUAL BIOLOGY LABORATORIES IN HIGHER EDUCATION	Dr. Farah Azlina Binti Ismail
		7	EFFECTS OF PHYSICAL ACTIVITY INTERVENTIONS ON SOCIAL AND PSYCHOLOGICAL FACTORS IN ADOLESCENTS: A STAGE-BASED MODEL	Nurzhan Tolegen
		8	ADVANCED VIRTUAL REALITY METHODS FOR ENHANCED FLUTE INSTRUCTION	Lim Wei Xian

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HALL / SALON 1	**Dr. DEMET YAVUZ**	1	ORGANİK ZEMİNLERİN SODYUM SİLİKAT VE DÜŞÜK KARBONLU ÇİMENTO İLE İYİLEŞTİRİLMESİ	HATİCE KÜBRA GÜNEŞ Prof. Dr. ZÜLKÜF KAYA
		2	PROPERTIES OF METAKOLIN-BASED GEOPOLYMER MORTARS PRODUCED WITH RECYCLED AGGREGATE	Dr. DEMET YAVUZ
		3	KAYSERİ İLİNİN DEPREMSELLİĞİNİN ARAŞTIRILMASI	İnşaat Mühendisi , ÖZGE ÇEVİK Prof. Dr. Zülküf KAYA
		4	COMPARATIVE EVALUATION OF SELECTED SOFTWARE-ASSISTED SURFACE ANALYSIS TECHNIQUES IN NANOSCALE SURFACE CHARACTERIZATION	MSc Student, Meryem Didar BAYRAKÇIL Prof. Dr. Nevcihan GÜRSOY
		5	GÜNEŞ ENERJİSİ SİSTEMLERİNİN ÇATI TİPİ, CEPHE YÖNELİMİ VE PANEL TÜRLERİNİN ÜRETİM PERFORMANSINA ETKİSİNİN İNCELENMESİ	Mimar/İnşaat Mühendisi, ERDAL AY Prof. Dr., Halil AKINCI
		6	EKOLOJİK BİNALARIN ZAMAN İÇİNDE ÜLKE EKONOMİSİNE KATKILARI	Mimar/İnşaat Mühendisi, ERDAL AY

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HALL / SALON 2	**Prof. Dr. ARMAĞAN ÖZTÜRK**	1	EVALUATIONS ON FINDIKOĞLU'S CONTRIBUTION TO TURKISH SOCIOLOGY	Prof. Dr. ARMAĞAN ÖZTÜRK
		2	FINDIKOĞLU'S EVALUATIONS ON IBN HALDUN	Prof. Dr. ARMAĞAN ÖZTÜRK
		3	DEFINING DOMESTIC AND AGRICULTURAL ROLES FROM THE PERSPECTIVE OF VILLAGE WOMEN: TRABZON PROVINCE EXAMPLE	Graduate Student Aslıhan UYAR
		4	THE IMPACT OF INDIVIDUALIZATION ON RELIGION AND FAMILY IN TODAY'S WORLD	TUBA AYDOĞDU Prof. Dr. KEMALEDDİN TAŞ
		5	BİYOÇEŞİTLİLİK ÜZERİNE ETİK TARTIŞMALAR	Dr. Hatice İrem EKER
		6	THE ELDERLY AS PERPETRATORS IN CRIMINAL ACTS	Dr. ZEYNEP ŞENTÜRK DIZMAN
		7	HAYVAN KONUŞURSA: KİTSCH ESTETİĞİNE SESSİZ DİRENİŞ	Dr. Öğr. Üyesi Serhat SOYŞEKERCİ
		8	AN EVALUATION OF HUMAN SACRIFICE AMONG THE TURKS	Master Student,Melih ÇORAK

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HALL / SALON 3	**Doç. Dr. Hikmet AKYOL**	1	DİJİTAL PARANIN DEVLET POLİTİKALARINA ETKİSİ ÖRNEKLEM OLARAK ABD –EL SALVADOR DİJİTAL PARA UYGULAMALARI	Hatice Aksu
		2	FOREIGN AID AFTER NATURAL DISASTERS IN DEVELOPING COUNTRIES: THE ROLE OF POLITICAL INSTITUTIONAL QUALITY	Doç. Dr. Hikmet AKYOL Şeyma AKÇİÇEK Öğr. Gör. Aynur KAYA Öğr. Gör. Lokman ODABAŞ
		3	RELATIONSHIP BETWEEN GEOPOLITICAL RISK AND ENVIRONMENTAL POLLUTION: THE CASE OF TURKIYE	Doç. Dr. Müge MANGA Kübra UÇAROĞLU
		4	GLOBALIZATION AND INCOME INEQUALITY IMPACTS ON ECONOMIC COMPLEXITY: A STUDY ON MICTA COUNTRIES	Doç. Dr. Müge MANGA Kübra UÇAROĞLU
		5	YAŞAM BEKLENTİSİ, KENTLEŞME VE KADIN İŞGÜCÜ KATILIM ORANININ AFRİKA'DAKİ DOĞUM ORANLARINA ETKİSİ	Arş. Gör. Dr., Sinan YILDIRIM Arş. Gör., Deniz ERENEL

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HALL / SALON 4	**Doç.Dr.FİLİZ YÜKSEL**	1	THE ROLE OF INTERNAL AUDIT IN DETECTING AND PREVENTING ERRORS AND FRAUD IN ACCOUNTING: AN EVALUATION FROM THE PERSPECTIVE OF THE BANKING SECTOR	Master's student, HATİCE SAYANER Asst. Prof. Dr. ŞEBNEM ADA
		2	ENFLASYON MUHASEBESİNİN KURUMLAR VERGİSİ GELİRLERİNE ETKİLERİ	ERMAN ÖZBEY Dr. Öğr. Üyesi İLKER CALAYOĞLU
		3	TÜRKİYE'DE MUHASEBE BİLİM İNSANLARININ AKADEMİK PROFİLLERİNİN İNCELENMESİ	ABDELHAKIM ABBAS SENOUSSI Doç.Dr.FİLİZ YÜKSEL
		4	A Descriptive Analysis of University Rectors' Use of Instagram in Türkiye	Cihan KARABEL Assoc. Prof. Dr. Gülçin BİLGİN TURNA
		5	ALTRUISTIC LEADERSHIP IN CORPORATE VOLUNTEER MANAGEMENT	Yüksek Lisans Öğrenci Şeyma BALKAR Prof. Dr. Muammer SARIKAYA

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HALL / SALON 5	**Ratri Nur Hidayati**	1	THE RELEVANCE OF ISLAMIC RELIGIOUS EDUCATION CURRICULUM TO THE MORAL CHALLENGES OF GENERATION Z IN INDONESIA: A CRITICAL STUDY OF THE ISLAMIC RELIGIOUS EDUCATION CURRICULUM IN SECONDARY SCHOOLS	Muhammad Khoirul Huda Wahyu Nanda Eka Saputra
		2	FAITH-BASED BOARDING SCHOOL MANAGEMENT MODEL: A MULTI-CASE ANALYSIS OF IMPLEMENTATION EFFECTIVENESS ON CHARACTER BUILDING IN THE DIGITAL ERA	Bangun Sarwo Aji Wibowo Dian Hidayati
		3	ENHANCING CHILDREN'S RELIGIOUS LITERACY THROUGH TAUHID-BASED EDUCATION TO PREVENT BULLYING FROM AN EARLY AGE	Aziz Muzaki Sumaryati
		4	TEACHERS' READINESS FOR DEEP LEARNING-BASED EDUCATIONAL TRANSFORMATION IN NORTH KALIMANTAN	Nurhayati Ambo Ratri Nur Hidayati
		5	CHARACTER DEVELOPMENT STRATEGIES IN SPECIAL SPORTS CLASSES: A QUALITATIVE STUDY IN SENIOR HIGH SCHOOLS OF YOGYAKARTA	Eko Mulyadi Dwi Sulisworo
		6	MANAGEMENT OF INTEGRATED CURRICULUM TRANSFORMATION IN MUHAMMADIYAH EDUCATIONAL INSTITUTIONS: A CASE STUDY OF SMP MUHAMMADIYAH PLUS KLATEN	Sukron Sa'id Ikmi Nur Oktavianti
		7	DEVELOPING A DIGITAL-BASED LEARNING MODEL ON CORE ISLAMIC BELIEFS FOR ONLINE MOTORCYCLE TAXI DRIVERS	Priyanta Ika Maryani

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HALL / SALON 6	**Doç. Dr. Zeynep Y. AVCI**	1	COMMITMENT AND BURNOUT IN BOXING: A STUDY ON ELITE BOXERS	Prof. Dr. Murat KUL Öğr. Gör. Onur ŞİPAL
		2	INVESTIGATION OF SPORTS SCIENCES FACULTY STUDENTS' ANXIETY LEVELS REGARDING SPORTS INJURY DEPENDING ON VARIOUS PARAMETERS	Emir Haktan ŞİPAL Öğr. Gör. Onur ŞİPAL
		3	RİZE'DE ÖĞRETMEN ADAYLARININ DEPREME İLİŞKİN NEDENSEL ATIFLARI	Prof. Dr. LEYLA KARAOĞLU Arş. Gör. Dr. MEHTAP KENAL
		4	AI-SUPPORTED STORYTELLING WITH PRE-SCHOOLERS	Abdullah KOÇ Doç. Dr. Zeynep Y. AVCI
		5	ARTIFICIAL INTELLIGENCE SUPPORT IN LEARNING TURKISH	Tuğçe YARDIMCI Doç. Dr. Zeynep Y. AVCI

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HALL / SALON 7	**Prof. Dr. İsmail ÇİFTCİOĞLU**	1	Türk Basınına Göre Arnavutluk Kralı Ahmet Zogu'nun Geraldine Apponyi ile Evliliği	Yüksek Lisans Öğrencisi, Çağdaş Ünal Doçent Doktor, Mesut Yavaş
		2	19. YÜZYIL'DA KARS EYALETİ'NİN YÖNETİCİLERİ	Dr. Öğr. Üyesi Ersin DOĞANTEKİN
		3	KARAMANOĞULLARI VE MEVLEVÎLİK	Prof. Dr. İsmail ÇİFTCİOĞLU
		4	CRAFT AND RESISTANCE IN THE OTTOMAN EMPIRE IN THE 19TH CENTURY	Dr. Öğr. Üyesi ERDEM ÜNAL DEMİRCİ
		5	The Time of the Occurrence of the Doomsday (al-Sā'ah) in Light of the Qur'anic Verses	Öğr. Üyesi Dr. Abdullah YEKTA,

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HALL / SALON 1	**Assoc. Prof. Dr. Honma Nasiry**	1	IMPACT OF SCALPING ON THE MECHANICAL PROPERTIES OF GRANULAR SOILS	Nadine Nguyen , Hassan Ngoc , Marot Bendahmane, Fateh Didier
		2	SIMULATING AND ANALYZING THE MOTION CHARACTERISTICS OF INDIVIDUAL ROCKFALLS: A STATISTICAL APPROACH	Wang Teh , Dr. Chin Lee
		3	FIELD AND PETROGRAPHIC CORRELATIONS OF CHARNOCKITIC AND ASSOCIATED GRANITIC ROCKS IN THE AKURE AREA, SOUTHWESTERN NIGERIA	Assis. Prof. Anthony Ademeso Odunyemi
		4	APPLICATION OF CSAMT METHOD IN INVESTIGATING COMPLEX ROCK MASS STRUCTURE AND CONCEALED TECTONIC FEATURES: CASE STUDIES	Yuxin Gama , Qingyun Chen Di, C. Dinis da
		5	UNIFIED EQUATION FOR WATER SURFACE PROFILE ALONG SIDE WEIRS IN COMBINED TRAPEZOIDAL AND EXPONENTIAL CHANNELS	Abdulrahman Abdulrahman
		6	COMPARATIVE ANALYSIS OF CO-SEISMIC GRAVITY CHANGES: GRACE OBSERVATIONS VERSUS FINITE-FAULT MODEL PREDICTIONS FOR THE 2012 MW = 8.6 INDIAN OCEAN EARTHQUAKE OFF-SUMATRA	Dr. Rahim Amin
		7	GEOTECHNICAL CHARACTERISTICS AND COMPRESSION BEHAVIOR OF ORGANIC DREDGED SEDIMENTS	Polat Inci , Hasan Develioglu
		8	OPTIMIZING PRODUCTION WITH EJECTOR INSTALLATION: A CASE STUDY FROM OFFSHORE OPERATIONS IN THE NORTH WEST JAVA FIELD	Arii Yudhaprasetya, Ario Agus , Guritno Setiawan, Recky Supriatna Tehupuring Cosmas
		9	NUMERICAL SIMULATION OF OIL-WATER DISPLACEMENT IN PETROLEUM RESERVOIRS: TWO-DIMENSIONAL OBSERVATIONS AND APPLICATIONS	Assoc. Prof. Dr. Honma Nasiry, Shigeo Ahmad

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HALL / SALON 2	**Assis. Prof. Dr. Bauyrzhan Tulegenov Dr. Zhanar Kazybekova**	1	EFFECTS OF SURFACE SCALPING ON THE STRENGTH AND DEFORMATION CHARACTERISTICS OF GRANULAR SOILS	Aigerim Zhanbota Nurlan Abilov Aruzhan Kassenova
		2	STATISTICAL MODELING AND SIMULATION OF ROCKFALL DYNAMICS IN MOUNTAINOUS TERRAIN	Faridah Binti Mohamad Dr. Ahmad Faizal
		3	PETROGRAPHIC AND FIELD STUDY OF CHARNOKITIC AND GRANITIC FORMATIONS IN SOUTHWESTERN NIGERIA	Dana Sadykova Mohd Hafiz Bin Ismail
		4	APPLICATION OF CSAMT TECHNIQUE FOR INVESTIGATING COMPLEX TECTONIC STRUCTURES: CASE STUDIES FROM SOUTHEAST ASIA	Nurul Afiqah Ahmad Zulkifli
		5	MATHEMATICAL MODELING OF WATER SURFACE PROFILES ALONG COMBINED TRAPEZOIDAL AND EXPONENTIAL CHANNELS	Assis. Prof. Dr. Bauyrzhan Tulegenov Dr. Zhanar Kazybekova
		6	COMPARATIVE ANALYSIS OF CO-SEISMIC GRAVITY VARIATIONS USING GRACE DATA AND FINITE-FAULT MODELS: CASE STUDY OF THE 2012 SUMATRA EARTHQUAKE	Siti Nur Aisyah Mohd Faizal
		7	GEOTECHNICAL PROPERTIES AND COMPRESSIBILITY OF ORGANIC DREDGED SEDIMENTS IN MALAYSIAN COASTAL AREAS	Ayanbek Nurmagambetov Rashidah Binti Ahmad
		8	OPTIMIZATION OF OFFSHORE PRODUCTION USING EJECTOR TECHNOLOGY: INSIGHTS FROM NORTHWEST JAVA FIELD	Zhanar Mukanova Nurul Huda

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HALL / SALON 3	**Prof. Dr. R. Khadraoui**	1	Comprehensive Analysis of Pin Fin Heat Sink Efficiency	Ayush Patel, S. Ramesh Kumar, M. Azeem
		2	Feasibility of Simplified Synchronous Generator Model for Power System Stability Assessment	A. Kumar, L. Perez
		3	Electricity Generation from Wastewater Using a Micro-Hydraulic Turbine	Yuki Nakamura, Hiroshi Tanaka, Akira Sato
		4	Online Diagnosis of Stator Faults in Squirrel Cage Induction Motors Using Electric Current Analysis	Miguel Herrera Santos, Dr. Carlos Enrique Alvarado, Maria Isabel Torres
		5	Enhanced Multi-Objective Particle Swarm Optimization for Optimal Design of Power System Stabilizers	Dr. A. H. El-Metwally, Prof. Dr. R. Khadraoui
		6	A Cost-Effective Design and Analysis of Full Bridge LLC Resonant Inverter	Alex Johnson, Priya Sharma
		7	Optimization of Energy Efficiency in the Distillation Unit of Shiraz Oil Refinery	A. Moradi, M. Farhadi, S. Rahimi
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HALL / SALON 4	**Assoc. Prof. Dr. Anongrat Chaiyaporn**	1	OPTIMIZATION OF TWO-STAGE BIOGAS PRODUCTION IN BIOFILM REACTORS	Dr. Samuel Karanja
		2	ENHANCING NITROGEN AND PHOSPHORUS REMOVAL FROM LIVESTOCK WASTEWATER USING ZEOLITE AND IONIZING RADIATION	Dr. Min-Jae Kim
		3	EFFECTS OF CRUDE OIL PARTICLE ELASTICITY ON HYDROCYCLONE SEPARATION PERFORMANCE	Dr. Carlos Mendoza
		4	INFLUENCE OF OPERATIONAL PARAMETERS ON CALCIUM CARBONATE SCALE FORMATION IN PLATE HEAT EXCHANGERS	Assoc. Prof. Dr. Anongrat Chaiyaporn
		5	CFD STUDY OF FLOW DYNAMICS IN PACKED-BED REACTORS WITH STATIC MIXERS	Dr. Priya Nair Dr. Rajesh Kumar
		6	DESIGN OF GUIDED STRUCTURES FOR SIMULTANEOUS REACTION AND SEPARATION IN MICROCHANNEL REACTORS	Assoc. Prof. Dr. Ahmed Al-Mansouri
		7	ADSORPTION-BASED REMOVAL OF LEAD AND CADMIUM IONS USING ACTIVATED CARBON FROM CASHEW SHELLS	Dr. Grace Nwosu
		8	SOIL REMEDIATION THROUGH HYDROGEN PEROXIDE OXIDATION: TECHNICAL AND ENVIRONMENTAL ASSESSMENT	Prof. Dr. Beata Sezabo

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HALL / SALON 5	**Dr. Chang-hyun Lee**	1	EXPLORING THE IMPACT OF BUSINESS MODEL INNOVATION ON FIRM VALUE: AN EVOLVING FRAMEWORK	Xiang W. Chen, Mei L. Wang, Liang K. Zhang
		2	STRUCTURAL DESIGN AND BLAST RESISTANCE ASSESSMENT OF A SINGLE-STORY CONTROL ROOM FOR A PETROLEUM REFINERY	Behzad Rahmani, Reza Mirzaei
		3	EVALUATION OF ENVIRONMENTAL REPORTING PRACTICES IN THE CHEMICAL SECTOR: A COMPARATIVE ANALYSIS OF GRI DISCLOSURES	E. Johnson
		4	EXPLORING THE ROLE OF FIT IN ENHANCING SERVICE INNOVATION PERFORMANCE: A NOVEL MODEL	Mei-Ling Chang, Hui-Ling Huang, Wan-Yu Yu, Chung-Lun Wei
		5	ETHICS AND LEGAL CONSIDERATIONS IN THE DIGITAL WORKPLACE: NAVIGATING THE INTERSECTION OF TECHNOLOGY AND ETHICS	Dr. Alice Smith, Lec. John R. Thompson
		6	ADVANCEMENTS IN REGIONAL MEDICAL IMAGING SYSTEMS: A COLLABORATIVE APPROACH	Petra Novak, Pavel Novotny, Jan Hruska
		7	INVESTIGATION OF RF PERMEABILITY FOR INTEGRATING USN INTO SOC STRUCTURES: A CASE STUDY	Dr. Chang-hyun Lee, Min-seok Choi, Sang-hoon Kim
		8	MITIGATING DAD ATTACKS IN MANET: A COMPREHENSIVE APPROACH	Hyewon Kim, Jisoo Lee

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HALL / SALON 6	**Assis. Prof. Dr Wei-Lin Chang**	1	ADAPTIVE HANDOFF DETECTION ALGORITHM UTILIZING RCST MOBILITY INFORMATION IN SATELLITE BEAM SYSTEMS	Sung Min Park, Hyun Jung Choi, Seung Woo Kim, Ji Hyun Lee, Sang Min Yoon
		2	INTEGRATION OF VISION SYSTEM AND SIMULATION SOFTWARE FOR ENHANCED INDUSTRIAL ROBOT CAPABILITIES	Fatima Al-Hassan, Ganesh Kothapalli, Majid Tolouei-Rad
		3	MITIGATING UNPLANNED EXTUBATION RISKS IN PSYCHIATRIC LONG-TERM CARE FACILITIES	Assis. Prof. Dr Wei-Lin Chang, Hsiao-Mei Lin
		4	ENHANCED INTELLIGENT TRANSPORTATION SYSTEMS FOR EFFICIENT BRT OPERATIONS	A. Ahmadi, M. Rezaei
		5	ENHANCING INFORMATION SECURITY IN E-LEARNING THROUGH HUMAN IDENTIFICATION TECHNIQUES	John Smith, Alice Johnson, Michael Lee, Sarah Brown
		6	ENHANCING INFORMATION SECURITY IN E-LEARNING THROUGH ADVANCED HUMAN IDENTIFICATION TECHNIQUES	Ahmed Mahmoud, Maryam Rahimi, Sara Abbasi
		7	ANALYZING GREY INCIDENCE WITHIN THE MACROSCOPIC FRAMEWORK OF THE LOGISTICS SECTOR	Ming Li, Fang Wang
		8	EXPLORING PERFORMANCE CHALLENGES OF DSRC RADIO TESTBEDS IN HIGH CHANNEL TRAFFIC SCENARIOS	Ming-Hua Wang, Bo-Chiuan Chen, C. W. Hsu
		9	EXAMINATION OF DELAYED PAYMENT ISSUES IN THE CONSTRUCTION SECTOR OF MALAYSIA	Dr. Nurul Hidayah Abdullah, Dr. Ahmad Faisal Mohd Zain

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HALL / SALON 1	**Prof. Dr. Remzi ALTUNIŞIK**	1	THE ROLE OF MEDIA IN THE ISRAEL–PALESTINE CONFLICT: A COMPARATIVE DISCOURSE ANALYSIS OF AL JAZEERA AND BBC	Asst. Prof., Fatma ÖZTAT Yüksek Lisans Öğrencisi, Gaye DOĞAN
		2	GENÇLERDE DİJİTAL MEDYA OKURYAZARLIĞI VE YAPAY ZEKA	Hemşire, ENES TEMİZ Dr. Öğr.Üyesi, FİGEN ÇAVUŞOĞLU
		3	SİBERFEMİNİZM UZAMINDA DİJİTAL OYUN KÜLTÜRÜNDE MİZOJİNİST YAKLAŞIMLAR	ZÜHRE ALPAYDIN Doç. Dr. HİDAYE AYDAN (SİLKÜ) BİLGİLİER
		4	POSTMODERN INDIVIDUAL REPRESENTATIONS IN POST-WESTERN CINEMA: THE CASE OF THE POWER OF THE DOG	Dr. ASLIHAN AKBAYIR
		5	DIGITAL LITERACY IN THE SUCCESSFUL AGING PROCESS	Doç. Dr. Meyrem Tuna Uysal
		6	THE MEDIATING ROLE OF PERCEIVED ENJOYMENT IN THE IMPACT OF CONSPICUOUS CONSUMPTION ON TRAVEL SHARING INTENTIONS ON SOCIAL MEDIA	Res. Assist. Ediz TUTSAL Prof. Dr. Remzi ALTUNIŞIK

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HALL / SALON 2	**Dr. Amaneh Manafidizaji**	1	A numerical scheme based on Taylor expansion with strong order of convergence 1 for RODEs	Minoo Kamrani
		2	Convergence of multi-step methods for Random Differential Equations with Wiener noise	Minoo Kamrani
		3	Model-Based Image Processing: Variational Advances	Alireza Hosseini
		4	Model-Based versus Data-Driven Models in Image Processing	Alireza Hosseini
		5	PROPERTIES OF THE LATTICES OF CONTINUOUS FUNCTIONS	Hilal Doğan Prof. Dr. Ömer Gök
		6	KB SPACES AND KB-OPERATORS	Serap YILDIRIM Prof.Dr.Ömer GÖK
		7	BOUNDARY VALUE PROBLEM OF A NONLINEAR FRACTIONAL DIFFERENTIAL EQUATION	Burak Borazan Prof. Dr. Fadime Dal
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HALL / SALON 3	**Prof. Dr. NİZAMİ MUSTAFA**	1	COEFFICIENT ESTIMATE AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE UNIVALENT FUNCTION CLASS RELATED WITH q- DERIVATIVE	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. SELAHATTİN ÇİN
		2	COEFFICIENT ESTIMATE AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX UNIVALENT FUNCTION CLASS RELATED WITH q- DERIVATIVE	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. SELAHATTİN ÇİN
		3	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO- STARLIKE BI-UNIVALENT FUNCTION CLASS	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. NAHİDE GÖKÇEK
		4	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO- CONVEX BI-UNIVALENT FUNCTION CLASS	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. NAHİDE GÖKÇEK
		5	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX UNIVALENT FUNCTION CLASS	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. KENAN YALÇIN
		6	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE UNIVALENT FUNCTION CLASS	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. KENAN YALÇIN
		7	COEFFICIENT PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS RELATED WITH q-DERIVATIVE	Prof. Dr. NİZAMİ MUSTAFA Doç. Dr. VEYSEL NEZİR
		8	COEFFICIENT PROBLEM FOR THE PSEUDO-CONVEX BI-UNIVALENT FUNCTION CLASS RELATED WITH q-DERIVATIVE	Prof. Dr. NİZAMİ MUSTAFA Doç. Dr. VEYSEL NEZİR
		9	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX BI-UNIVALENT FUNCTION CLASS OF COMPLEX ORDER	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. DAVUT MİNGSAR
		10	ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS OF COMPLEX ORDER	Prof. Dr. NİZAMİ MUSTAFA Grad. Stud. DAVUT MİNGSAR

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HALL / SALON 4	**Assoc. Prof. Dr. LATİFE CEYDA İRKİN**	1	THE CARBON FOOTPRINT OF FOOD LEGUMES AND THEIR ROLE IN CLIMATE-SMART AGRICULTURAL SYSTEMS	Dr. Öğr. Üyesi Özge UÇAR,
		2	ALGAE and SUSTAINABILITY	Assoc. Prof. Dr. LATİFE CEYDA İRKİN
		3	SUSTAINABILITY IN AQUACULTURE	Assoc. Prof. Dr. LATİFE CEYDA İRKİN
		4	THE EFFECT OF CYSTEINE ON MORPHOLOGY AND PIGMENT CONCENTRATION in SORGHUM VARIETY (Sorghum bicolor L. 'Gözde') UNDER BORON TOXICITY	Master Student Seda ŞAHİN Assoc. Prof. Dr. Hülya TORUN
		5	DNA BARCODING AND GENETIC STRUCTURE OF Dryomys laniger FROM TÜRKİYE	Prof. Dr. Ercüment ÇOLAK Asst. Prof. Dr. Perinçek Seçkinozan ŞEKER Dr. Engin SELVİ Prof. Dr. Teoman KANKILIÇ Prof. Dr. Reyhan ÇOLAK Prof. Dr. Nuri YİĞİT
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HALL / SALON 5	**Prof. Dr. NURAY GÜZELER**	1	TOAST CHEESE AND USING MELTING SALT	Prof. Dr. NURAY GÜZELER Dr. Mine ÇÜRÜK
		2	QUALITY CHARACTERISTICS OF GOAT MILK DURING LACTATION	Prof. Dr. NURAY GÜZELER Dr. Mine ÇÜRÜK Rashad KHABBAZEH
		3	GEÇMŞTEN GÜNÜMÜZE TRABZON MUTFAK KÜLTÜRÜNDE REÇELİN YERİ	Dr. Öğr. Üyesi Zeynep BAKKALOĞLU Doç. Dr. Mehmet Akif ŞEN
		4	TRABZON'DA COĞRAFİ İŞARET TESCİLİNE ADAY BİR ÜRÜN "MISIR UNU HELVALI BAKLAVA)	Doç. Dr. Mehmet Akif ŞEN Dr. Öğr. Üyesi Zeynep BAKKALOĞLU
		5	KAHRAMANMARAŞ'TA MARKETLERDE SATILAN MEYVE SULARINDA RADON GAZI ÖLÇÜMÜ	Dr. SERDAR GÜMBÜR Dr. Öğr. Üyesi ERDAL KÜÇÜKÖNDER

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HALL / SALON 6	**Doç. Dr. Halil Atasoy**	1	ETANOL İNTOKSİKASYONUNA BAĞLI DOĞRUDAN ÖLÜMLER: RETROSPEKTİF BİR OTOPSİ DEĞERLENDİRMESİ	Doç. Dr. HÜSEYİN ÇETİN KETENCİ Prof. Dr. HÜLYA KILIÇ
		2	SAHTE İÇKİLERİN YOL AÇTIĞI ÖLÜMCÜL ZEHİRLENMELER: BÖLGESEL BİR OTOPSİ ÇALIŞMASI	Doç. Dr. HÜSEYİN ÇETİN KETENCİ Prof. Dr. HÜLYA KILIÇ
		3	APPROACH TO COLLAGENOUS COLITIS DUE TO A CASE	Doç. Dr. Halil Atasoy
		4	CASE REPORT: REHABILITATION OF DENTIGEROUS CYST IN A CHILD PATIENT WITH CYST DECOMPRESSION PROSTHESIS	Arş. Gör. BİLAL AYAZ Doç. Dr. MURAT ALKURT
		5	KESER DİŞLERDE GÖRÜLEN TRAVMATİK İNTRÜZYON VE SUBLÜKSASYONUN DENTAL REHABİLİTASYONU: OLGU SUNUMU	Arş. Gör. EMİNE ŞURANUR AYAZ Doç. Dr. SEMA AYDINOĞLU

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HALL / SALON 7	**Doç. Dr. Kazım ŞAHİN**	1	MONTESSORI PRINCIPLES AS A CONCEPTUAL MODEL FOR DEVELOPING EXECUTIVE FUNCTION IN EARLY CHILDHOOD	Rahmah Dwi Sistiarini Fatimah Setiani
		2	YAŞLILARDA ÜRİNER İNKONTİNANS VE HEMŞİRELİK YAKLAŞIMI	HEMŞİRE, EYLÜL TOR Dr. Öğr. Üyesi Özge Öz Yıldırım
		3	ATTENUATION OF ACUTE RESPIRATORY DISTRESS SYNDROME IN CLP-INDUCED SEPSIS BY Punica granatum PEEL	Doç. Dr. Kazım ŞAHİN
		4	Punica granatum EXTRACT REDUCED LPS-INDUCED INFLAMMATION IN ACUTE KIDNEY INJURY BY DECREASING LEVELS OF RECEPTOR TLR4 AND TRANSCRIPTION FACTOR NF-κB	Doç. Dr. Kazım ŞAHİN Arş. Gör. Dr. Sena ŞAHİN AKTURA
		5	Evaluation of Caffeic acid phenethyl ester (CAPE), Melatonin, and Metformin as Anti-Tumor and Anti-Inflammatory Agents in Colon Cancer Cell Lines.	Zeinab Sherif Fathy Gomaa Badran Prof. Dr. SABAHATTİN MUHTAROĞLU

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HALL / SALON 1	**Jing Wei**	1	ANALYSIS OF PAYMENT DELAYS AND THEIR IMPACT ON THE CONSTRUCTION INDUSTRY IN MALAYSIA	Siti Nur Aisyah
		2	EVALUATING THE PROGRESS OF MANUFACTURING CONTROL SYSTEMS IN LIBYA'S INDUSTRIAL SECTOR	Muna Al-Faraj
		3	COMPARATIVE STUDY OF ENVIRONMENTAL REPORTING IN THE CHEMICAL INDUSTRY: GRI STANDARDS APPLICATION	Dr. Emily Thompson
		4	DESIGN AND BLAST RESISTANCE ANALYSIS OF SINGLE-STORY CONTROL FACILITIES IN PETROLEUM REFINERIES	Khaled Al-Mahdi Omar Farouk
		5	IMPACT OF BUSINESS MODEL INNOVATION ON CORPORATE VALUATION: A DYNAMIC FRAMEWORK	Wei Zhang Li Mei Jian Liu
		6	THE ROLE OF ALIGNMENT IN BOOSTING SERVICE INNOVATION PERFORMANCE: A NEW CONCEPTUAL MODEL	Chun-Hua Lin Mei-Ying Huang Yu-Fen Wu
		7	PROMOTING LOW-CARBON TRANSITION IN CHINA'S TRADITIONAL MANUFACTURING INDUSTRIES	Jing Wei
			ASSESSING THE EFFECTIVENESS OF INTEGRATED TQM AND LEAN MANUFACTURING IN MALAYSIAN AUTOMOTIVE INDUSTRY	Farah Aziz Noraini Hassan Ahmad Zulkifli
			THE EFFECTS OF MERGERS AND ACQUISITIONS ON CONSUMER WELFARE: EVIDENCE FROM INDIA'S MANUFACTURING SECTOR	Dr. Anil Kumar Ravi Shankar
		8	RELATIONSHIP BETWEEN FINANCIAL MARKET STRUCTURE AND MARKET INDICES IN TEHRAN STOCK EXCHANGE	Neda Rahimi Saeed Karimi

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HALL / SALON 2	**Dr. Ogunduyile O. Oluwgbenga**	1	ASSESSING THE QUALITY STANDARDS OF HOSPITAL PHARMACIES IN THERAPEUTIC CENTERS ASSOCIATED WITH KERMANSHAH UNIVERSITY OF MEDICAL SCIENCES, IRAN	Dr. Gharehbagh V.Hamishehkar , H.Aghababa
		2	OPTIMIZING VISIBLE LIGHT COMMUNICATION SYSTEMS THROUGH NATURAL LIGHT INTEGRATION	Mahmoud H. Aly, Ivan Andonovic, Moustafa Beshr
		3	INTEGRATING WIRELESS BODY AREA NETWORKS WITH WEB SERVICES: REVOLUTIONIZING UBIQUITOUS HEALTHCARE PROVISIONING THROUGH ARCHITECTURE	Dr. Ogunduyile O. Oluwgbenga
		4	DYNAMIC BRAIN WAVE ACQUISITION AND PSYCHOACOUSTIC ANALYSIS IN REAL TIME	Dipali SShweta , ingh Mahajan , Bansal Rashima
		5	ENHANCING COMBAT EFFECTIVENESS IN NEW GENERATION FIGHTER PLANES THROUGH HUMAN FACTORS CONSIDERATIONS	Binoy Bhargavan
		6	CONSTRUCTING AN INTEGRATED RELATIONAL DATABASE UTILIZING SWISS NUTRITION NATIONAL SURVEY AND HEALTH DATASETS FOR DATA MINING OBJECTIVES	Helena Einsele , Dr. Jenzer Farshideh
		7	CAN EEG TESTING AID IN BRAIN TUMOR IDENTIFICATION?	M. Sharanreddy, P. K. Kulkarni
		8	EXAMINING THE HAZARDS OF INADEQUATE MEDICAL WASTE MANAGEMENT PRACTICES ON HUMAN HEALTH AND THE ENVIRONMENT: A REVIEW OF LITERATURE	Babanyara Ibrahim, Garba Bogoro., M. Y.Abubakar,

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HALL / SALON 3	**Dr. Jana Horvathova Dr. Tomas Varga**	1	INFLUENCE OF ELEMENTAL INTERACTIONS ON VOLATILITY IN FLUIDIZED-BED COMBUSTION: A STUDY OF METAL IMPACTS IN VARIOUS COAL GRADES	Dr. Jana Horvathova Dr. Tomas Varga
		2	EFFECTS OF MICROWAVE IRRADIATION ON THE MECHANICAL AND CHEMICAL STABILITY OF SILICA-BASED OPTICAL FIBERS	Dr. Ana-Maria Ionescu Dr. Sung-Ho Lee Dr. Gabriela Popescu
		3	SIMULATION OF CASTING GEOMETRY EFFECTS ON HOT TEARING AND RESIDUAL STRESS IN PRECISION CASTING PROCESSES	Dr. Carlos Mendoza Lucia Fernandez Lec. Dr. Miguel Torres Assis. Prof. Dr. Sofia Ramirez
		4	COMPARATIVE STUDY OF MEDIA INFLUENCES IN EXPLOSIVE FORMING OF CYLINDRICAL SHELLS	Rashid Al-Mansoori Faridah Yusof
		5	IMPACT OF SURFACE PREPARATION TECHNIQUES ON NANOCRYSTALLINE DIAMOND FILM GROWTH ON SILICON NITRIDE SUBSTRATES	Assoc. Prof. Dr. Rafael Silva Dr. Marina Santos Dr. Carlos Rodrigues
		6	COMPUTATIONAL MODELING OF PLASTIC DEFORMATION IN CLAY UNDER COMPRESSIVE LOADS	Mahdi Hosseini Dr. Farah Mohammadi Assis. Prof. Dr. Zahra Rahimi

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HALL / SALON 4	**Dr. Nadia El-Sayed Dr. Omar Khalil**	1	OPTIMAL TIMING FOR COLOSTRUM IMMUNOGLOBULIN ABSORPTION IN NEWBORN CAMELS: CORRELATION WITH CORTISOL AND THYROXIN LEVELS	Dr. Fatima Al-Mansouri Dr. Khaled Al-Harbi Dr. Youssef Benali
		2	DEVELOPMENTAL CHANGES IN THE DUODENAL MUCOSA AND SUBMUCOSA OF RABBITS	Dr. Nadia El-Sayed Dr. Omar Khalil
		3	EVALUATION OF TUBERCULIN, TETANUS IMMUNOGLOBULIN, AND DPT VACCINE AS MITOGENS IN AVIAN T-LYMPHOCYTE PROLIFERATION	Assoc. Prof. Dr. Samuel Okoro
		4	ASSESSMENT OF POTATO VARIETIES FOR CHIPS AND FRENCH FRIES PRODUCTION USING MICROWAVE-VACUUM DRYING TECHNOLOGY	Inga Jansons Kristaps Ozols Marta Kalnina Tatjana Ziedina
		5	SALT TOLERANCE IN TISSUE-CULTURED DATE PALM VARIETIES UNDER CONTROLLED ENVIRONMENTAL CONDITIONS	Dr. Hassan Al-Mulla Dr. Khalil Al-Farsi
		6	IMPACT OF COPPER AND ZINC DEFICIENCY ON MILK YIELD IN INTENSIVELY MANAGED DAIRY CATTLE: A STUDY FROM NORTHEASTERN ROMANIA	Dr. Elena Popescu Dr. Mihai Ionescu Dr. Carmen Georgescu
		7	EFFECTS OF OVERFEEDING ON PRODUCTIVITY, FOIE GRAS QUALITY, BLOOD PARAMETERS, AND MORTALITY IN TWO BREEDS OF DUCKS	Dr. Mona El-Sayed Dr. Ahmed Mahrous

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HALL / SALON 5	**Dr. Marco Bianchi**	1	USING AQUATIC ORGANISMS AS BIOINDICATORS FOR WATER POLLUTION: A CASE STUDY IN LAKE VICTORIA AND CONTROLLED LABORATORY EXPERIMENTS	Dr. Grace Mwangi
		2	EVALUATION OF HERBICIDE EFFICACY ON WILD RYEGRASS (ELYMUS REPENS) AT DIFFERENT GROWTH PHASES WITH NITROGEN SUPPLEMENTATION	Assoc. Prof. Dr. Lars Jensen
		3	POTENTIAL OF SALVIA OFFICINALIS FOR PHYTOREMEDIATION OF HEAVY METAL-CONTAMINATED SOILS: AN EXPERIMENTAL STUDY	Dr. Ivan Dimitrov Dr. Maria Stoyanova
		4	EFFECTS OF ORGANIC COMPOST ON HEAVY METAL ACCUMULATION, NUTRIENT DISTRIBUTION, AND QUALITY OF TOBACCO CULTIVARS IN BULGARIA	Dr. Michael Johnson
		5	PRELIMINARY SURVEY OF AFLATOXIN CONTAMINATION IN RICE SAMPLES FROM SURINAME	Assoc. Prof. Dr. Dewi Wulandari
		6	MANAGEMENT STRATEGIES FOR RICE FIELD LAND USE CHANGE IN SOUTH SULAWESI, INDONESIA	Dr. Marco Bianchi
		7	LONG-TERM EFFECTS OF RECLAIMED INDUSTRIAL WASTEWATER IRRIGATION ON SOIL CHEMICAL PROPERTIES IN CROP PRODUCTION	Dr. Fatima Zahra El Amrani
		8	WATER USE EFFICIENCY IN CITRUS PRODUCTION IN THE MARRAKECH REGION UNDER VARIABLE CLIMATIC CONDITIONS	Prof. Dr. Jean-Luc Dupont

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HALL / SALON 6	**Prof. Jean-Luc Moreau Dr. Camille Dupont**	1	OPTIMIZING CRUISE PERFORMANCE OF LIGHT AIRCRAFT WITH SMART WINGLET TECHNOLOGIES	Dr. Ivan Kuznetsov
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KADERCİLİK DÜZEYİNİN SAĞLIK DAVRANIŞLARINA ETKİSİ

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ÖZET

Giriş: Sağlık kaderciliği, sağlık problemlerinin insan kontrolü altında olmadığına olan inancı ifade etmektedir. Bu nedenle sağlıkla ilgili süreçlerde insan davranışlarını etkileyebilmektedir.

Amaç: Bu derlemede sağlık kaderciliğinin sağlık ilişkili davranışlar üzerine etkisi hakkında bilgi verilmesi amaçlandı.

Konunun Literatürü: Sağlık kaderciliğinin sağlık süreçlerine ilişkin etkilerini konu alan ulusal ve uluslararası çalışmalar mevcuttur. Akgül ve arkadaşlarının (2022) yaptığı çalışmada hemşirelik öğrencilerinin kadercilik ölçeği puan ortalaması ile sağlığı geliştirici ve koruyucu davranış ölçeği puan ortalamaları arasında negatif yönde anlamlı ilişki bulunmuştur. Özer ve arkadaşları (2022) kadercilik düzeyi yüksek olan hemodiyaliz hastalarının hastalık algılarının daha olumsuz olduğunu belirlemişlerdir. Hammersmith ve ark. (2023) kadercilik düzeyi yüksek olanların ağız sağlığı öz yeterliliğinin düşük olduğunu ve kadercilik düzeyinin ilk diş kontrolüne gitmeyi etkileğini tespit etmişlerdir. El-Sayed ve arkadaşları (2023) yaşlılarda kadercilik inancı yükseldikçe ilaç tedavilerine olan bağlılığın azaldığını belirlemişlerdir. Han ve Baysal (2024) kadınlarda meme kanserinde erken tanıya başvurma düzeyleri ile kadercilik düzeyleri arasında negatif bir ilişki olduğunu saptamışlardır. Ayyıldız ve Evcimen (2024) Aile Sağlığı Merkezi'ne başvuran kadınların kanser tarama tutumlarının, sağlık kaderciliği inançları ile ters orantılı olduğunu bulmuşlardır.

Sonuç ve Öneriler: Literatürdeki çalışmalar genel olarak kadercilik anlayışı ile sağlığı koruyucu ve geliştirici uygulamaların negatif ilişki içinde olduğunu göstermektedir. Bu durum birçok kronik hastalığın erken tanısını engellemekte ve tedavinin gecikmesine neden olmakta, aynı zamanda tedaviye uyumu azaltarak sağ kalım oranlarını düşürebilmektedir. Özellikle sağlıklı ya da hasta bireylerin kadercilik düzeyleri belirlenmeli ve sağlığı koruyucu ve geliştirici uygulamaları yapmaları için teşvik edilmesi önerilmektedir.

Anahtar kelimeler: Kadercilik, Sağlık, Sağlık Davranışı

The Effect of Fatalism Level on Health Behaviors

ABSTRACT

Introduction: Health fatalism refers to the belief that health problems are not under human control. Therefore, it can affect human behavior in health-related processes.

Purpose: This review aims to provide information about the effects of health fatalism on health-related behaviors.

Subject Literature: There are national and international studies on the effects of health fatalism on health processes. In the study conducted by Akgül et al. (2022), a negative significant relationship was found between the mean fatalism scale score of nursing students and the mean health-promoting and protective behavior scale scores. Özer et al. (2022) determined that hemodialysis patients with high fatalism levels had more negative disease perceptions. Hammersmith ve ark. (2023) found that those with high fatalism levels had low oral health self-efficacy and that the level of fatalism affected going to the first dental check-up. EL-Sayed et al. (2023) determined that as the belief in fatalism increased in the elderly, adherence to drug treatments decreased. Han and Baysal (2024) found that there is a negative relationship between the level of seeking early diagnosis for breast cancer in women and their levels of fatalism. Ayyıldız and Evcimen (2024) found that the cancer screening attitudes of women applying to the Family Health Center are inversely proportional to their health fatalism beliefs.

Conclusion and Recommendations: Studies in the literature generally show that the understanding of fatalism and health-protective and improving practices are negatively related. This prevents early diagnosis of many chronic diseases and causes delays in treatment, and can also reduce survival rates by reducing compliance with treatment. In particular, it is recommended that the fatalism levels of healthy or sick individuals be determined and that they be encouraged to implement health-protective and improving practices.

Keywords: Fatalism, Health, Health Behavior

YOĞUN BAKIMDA MIYOKARD ENFARKTÜSÜ SONRASI ANKSİYETE VE YÖNETİMİ

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ÖZET

Miyokard enfarktüsü (MI) kalp kasına yeterince oksijen gidememesi nedeniyle oluşan,hayati risk oluşturan önemli bir kardiyak sağlık sorunudur. MI sonrası yoğun bakım süreci, hastalar için hem fiziksel hem de psikolojik zorlukları olan önemli bir dönemdir. Bu dönemde miyokard enfarktüsü geçiren hastalarda anksiyete, en önemli psikolojik rahatsızlıklardan biridir. Yoğun bakım ünitesinin ortaya çıkardığı stres, belirsizlik, yalnızlık, ölüm korkusu, fiziksel engellemeler, ağrı ve hastalığın yarattığı endişeler, anksiyetenin görülmesine neden olmaktadır. Anksiyetenin iyi bir biçimde yönetilmemesi, hastanın tedavi bakım sürecine uyumunu bozabilir, iyileşme sürecini kötü etkileyebilir ve yaşam kalitesini azaltabilir. Bu sürecin iyi yönetilmesinde hastalarla birebir ilişkisi olan hemşirelere önemli sorumluluklar düşmektedir. Bu bildiride MI sonrası anksiyetenin sebepleri, etkileri, anksiyetenin değerlendirilmesi, ve etkili yönetilmesi kapsamında bilgiler sunulacaktır. Ayrıca hemşirelik yaklaşımları ve Multidisipliner ekip çalışmasının önemi de ele alınacaktır.

Anahtar Kelimeler: miyokard enfarktüsü, anksiyete, yoğun bakım, anksiyete yönetimi, hemşirelik bakımı

ABSTRACT

ANXIETY AND MANAGEMENT AFTER MYECARDIAL INFARCTION IN THE INTENSIVE CARE UNIT

Myocardial infarction (MI) is a significant cardiac health problem that occurs due to insufficient oxygen to the heart muscle and poses a life-threatening risk. The intensive care process after MI is an important period that has both physical and psychological difficulties for patients. During this period, anxiety is one of the most important psychological disorders in patients who have myocardial infarction. The stres, uncertainty, loneliness, fear of death, physical obstacles, pain and concerns caused by the disease caused by the intensive care unit cause anxiety. If anxiety is not managed well, it can disrupt the patient's compliance with the treatment and care process, negatively affect the recovery process and reduce the quality of life. Nurses who have

one-on-one relationships with patients have important responsibilities in managing this process well. In this report, information will be presented within the scope of the causes and effects of anxiety after MI, the evaluation of anxiety and its effective management. In addition, nursing approaches and the importance of multidisciplinary teamwork will be discussed.

Keywords: Myocardial infarction, anxiety, intensive care, anxiety management, nursing care

YAŞLILARDA UYUM GÜÇLÜLÜĞÜNÜN YORDAYICISI OLARAK MORAL DÜZEYİ

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ÖZET

Amaç: Bu araştırmanın amacı yaşlılarda uyum güçlüğünün yordayıcısı olarak moral düzeyini incelemektir.

Yöntem: Tanımlayıcı ve ilişki arayıcı tasarımda olan bu araştırma, Samsun ilinde yaşamakta olan yaşlı bireyler ile kar topu örneklem yöntemi kullanılarak yürütülmüştür. Araştırmanın verileri 15.12.2023-30.04.2024 tarihleri arasında araştırmaya katılmayı kabul eden, iletişim kurmakta engel oluşturacak işitme ve konuşma problemi olmayan, soruları anlamasına ve cevap vermesine engel oluşturacak bilişsel fonksiyon sorunu olmayan 65 yaş üzeri yaşlı bireylerle, yüz yüze konuşma yöntemi kullanılarak toplanmıştır. Araştırmaya başlamadan önce gerekli etik kurul izni alınmıştır. Araştırmada veri toplama formu olarak Yaşlı Tanıyıcı Bilgi Formu, Philadelphia Geriatrik Merkezi Moral Ölçeği (PGMMÖ) ve Yaşlılarda Uyum Güçlüğünü Değerlendirme Ölçeği (YUGDÖ) kullanılmıştır. Araştırmada tüm hesaplamalarda ve yorumlamalarda istatistik anlamlılık düzeyi "$p<0,05$, $p<0,01$, $p<0,001$" olarak dikkate alınmış ve hipotezler çift yönlü olarak kurulmuştur. Verilerin istatistiksel analizi "SPSS v27 (IBM Inc., Chicago, IL, USA)" paket programında yapılmıştır.

Bulgular: Araştırmaya katılan yaşlıların yaş ortalamalarının $73,38\pm6,93$ olduğu, %80,8'inin evli olduğu, %58,5'inin eş, çocuk ve/veya çocuklarıyla birlikte yaşadığı bulunmuştur. Araştırmaya katılan yaşlıların %55,4'ünün tanı alınan fiziksel sağlık sorunu yaşadığı, %13,8'inin tanı alınan ruhsal sağlık sorunu olduğu, %96,9'unun birinci derece yakınlarından kayıp yaşadığı bulunmuştur. Araştırmaya katılan yaşlıların PGMMÖ alt faktör ve toplam puanları ile YUGDÖ toplam puanları arasında negatif yönde yüksek bir ilişki olduğu belirlenmiştir ($p<0,001$). PGMMÖ'nün "Ajitasyon" alt faktör puanlarının YUGDÖ'nün "YUGDÖ Toplam" puanları üzerinde ($\beta=-0,138$; $t=-4,288$; $p<0,001$) istatistiksel olarak anlamlı etkisinin olduğu bulunmuştur.

Sonuç: Yaşlı bireylerin moral düzeylerinin yaşlılarda uyum güçlüğü ile ilişkili olduğu; ajitasyonun uyum güçlüğü yaşama durumunu etkileyerek arttırdığı saptanmıştır.

Anahtar Kelimeler: Yaşlılık, Yaşlılıkta Uyum Güçlüğü, Moral Düzeyi

MORALE LEVEL AS A PREDICTOR OF ADJUSTMENT DIFFICULTIES IN THE ELDERLY

ABSTRACT

Purpose: The purpose of this study is to examine morale level as a predictor of adaptation difficulties in the elderly.

Method: This descriptive and correlational study was conducted using the snowball sampling method with elderly individuals living in Samsun. The data of the study were collected between 15.12.2023 and 30.04.2024 using the face-to-face interview method with elderly individuals over the age of 65 who agreed to participate in the study, who did not have any hearing or speech problems that would prevent them from communicating, and who did not have any cognitive function problems that would prevent them from understanding and answering questions. The necessary ethics committee permission was obtained before starting the study. The Elderly Identifier Information Form, the Philadelphia Geriatric Center Morale Scale (PGMMÖ) and the Scale for Assessing Adaptation Difficulties in the Elderly (YUGDÖ) were used as data collection forms in the study. In all calculations and interpretations in the study, the statistical significance level was considered as "$p<0.05$, $p<0.01$, $p<0.001$" and the hypotheses were established bidirectionally. The statistical analysis of the data was performed in the "SPSS v27 (IBM Inc., Chicago, IL, USA)" package program.

Findings: The average age of the elderly participants in the study was found to be 73.38±6.93, 80.8% were married, and 58.5% lived with their spouse, child and/or children. It was found that 55.4% of the elderly participants in the study had a diagnosed physical health problem, 13.8% had a diagnosed mental health problem, and 96.9% had lost a first-degree relative. It was determined that there was a high negative correlation between the PGMÖ sub-factor and total scores of the elderly participants in the study and the YUGDS total scores ($p<0.001$). It was found that the "Agitation" sub-factor scores of the PGMÖ had a statistically significant effect on the "YUGDS Total" scores of the YUGDS ($\beta=-0.138$; $t=-4.288$; $p<0.001$).

Conclusion: It has been determined that the morale levels of elderly individuals are related to adaptation difficulties in the elderly; agitation affects and increases the situation of experiencing adaptation difficulties.

Keywords: Old Age, Adaptation Difficulty in Old Age, Morale Level

KOAH HASTALARINDA SAĞLIKLI YAŞAM ALIŞKANLIKLARI VE KADERCİLİK ALGISI

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ÖZET

KOAH akciğerlere hava akışını engelleyerek solunum problemlerine yol açan ve hayat boyu devam eden kronik solunum yolu hastalığıdır. Dünya nüfusunun her geçen yıl yaşlanması ile birlikte yetersiz beslenme, hava kirliliği, hijyenik olmayan hava koşulları gibi faktörlerin yanı sıra fiziksel aktivitede yetersizlik, obezite, sigara veya tütün kullanımı veya bağımlılığı gibi değişen yaşam koşulları bulaşıcı olmayan diğer hastalıklara neden olduğu gibi KOAH hastalığında da görülme sıklığında artışa neden olmuştur. Dünyada KOAH sıklığı yüzde 10,3 olup her yıl yaklaşık 3 milyon kişi KOAH nedeniyle yaşamını yitirmekteyken, TÜİK tarafından yayımlanan 2022 yılı verileri ise solunum sistemi hastalıklarının, %13,5 ile ölüm nedenleri arasında üçüncü sırada yer aldığını ve bu ölümlerinin yüzde 4'ünün KOAH nedeniyle gerçekleştiğini ortaya koymaktadır. KOAH hastalarının sağlıklı beslenmeye dikkat etmesi, sigara kullanmaması, yeterli fiziksel aktivite ve yeterli uyku gibi sağlıklı yaşam alışkanlıklarını edinmeleri hastalık sürecinin daha iyi bir şekilde geçirilmesi ve prognozunun seyri açısından önem arz etmektedir. Fakat tüm bu faktörlerin önemi kişilerin kadercilik algısına bağlı olarak değişebilmektedir. Yapılan çalışmalar kaderciliğin sağlık hakkında karar alma konusunda azalmış sağlıklı davranışlarla ilişkili olduğunu ve kadercilik eğilimi arttıkça bireylerin öz yeterlik inancının azalarak psikolojik yardım süreçlerinde bireylerin kendi sorunlarının çözümünde aktif sorumluluk almalarını güçleştirebileceğini göstermektedir. Bu derlemede KOAH hastalarında sağlıklı yaşam alışkanlıkları ve kadercilik algısı literatür eşliğinde incelenmiştir.

Anahtar Kelimeler : KOAH hastaları, sağlıklı yaşam alışkanlıkları, kadercilik algısı.

TİP 2 DİYABET HASTALARINDA DİYABET ÖZYÖNETİM EĞİTİMİNİN GLİSEMİK KONTROL ÜZERİNE ETKİSİ: LİTERATÜR TARAMASI

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ÖZET

Tip 2 diyabet, bireyin yaşam kalitesini önemli ölçüde etkileyen ve tüm dünyada yaygınlığı giderek artan kronik bir hastalıktır. Etkin bir diyabet yönetimi, yalnızca farmakolojik tedaviyle değil, aynı zamanda bireyin hastalığı hakkında bilgi sahibi olması, yaşam tarzı değişikliklerini benimsemesi ve öz bakım davranışlarını sürdürebilmesiyle mümkündür. Bu noktada, diyabet özyönetim eğitimi diyabet bakım sürecinde önemli bir yer tutmaktadır. Bu çalışmanın amacı, diyabet özyönetim eğitimin Tip 2 diyabet hastalarında glisemik kontrol üzerindeki etkisini inceleyen bilimsel literatürü derleyerek değerlendirmektir.

Bu kapsamda, akademik veri tabanlarında “tip 2 diyabet”, “HbA1c düzeyi”, “glisemik kontrol” ve “diyabet özyönetim eğitimi” anahtar kelimeleri kullanılarak tarama yapılmıştır. Dâhil edilme kriterlerine uyan özgün araştırma çalışmaları incelenmiştir. Değerlendirilen çalışmaların büyük bir kısmında, diyabet özyönetim eğitimin hastaların HbA1c düzeylerinde anlamlı düşüş sağladığı, tedaviye uyumu artırdığı, beslenme ve egzersiz alışkanlıklarında olumlu değişiklikler yarattığı ve öz bakım becerilerini güçlendirdiği belirlenmiştir.

Sonuç olarak, literatür bulguları diyabet özyönetim eğitimin glisemik kontrol üzerinde olumlu etkileri olduğunu ortaya koymaktadır. Tip 2 diyabetli bireylerde komplikasyonları önlemek, tedaviye uyumu artırmak ve yaşam kalitesini yükseltmek amacıyla, diyabet özyönetim eğitimin klinik uygulamalarda daha sistematik ve sürekli bir şekilde yer alması gerekmektedir.

Anahtar Kelimeler : tip 2 diyabet , glisemik kontrol, hemşirelik eğiti diyabet özyönetim eğitimi, HbA1c düzeyi

ABSTRACT

EFFECT OF DIABETES SELF-MANAGEMENT EDUCATION ON GLYCEMIC CONTROL IN TYPE 2 DIABETES PATIENTS: LITERATURE REVIEW

Type 2 diabetes is a chronic disease that significantly affects individuals' quality of life and is becoming increasingly prevalent worldwide. Effective diabetes management requires not only pharmacological treatment but also the individual's knowledge of the disease, adoption of lifestyle changes, and ability to sustain self-care behaviors. At this point, self-management education plays a crucial role in the diabetes care process.

The aim of this study is to review and evaluate the scientific literature examining the impact of diabetes self-management education on glycemic control in individuals with type 2 diabetes. Within this scope, a literature search was conducted in academic databases using keywords such as “type 2 diabetes,” “HbA1c level,” “glycemic control,” and “diabetes self-management education”. Original research articles that met the inclusion criteria were analyzed.

The majority of the studies reviewed reported that diabetes self-management education led to a significant reduction in patients' HbA1c levels, improved treatment adherence, contributed to positive changes in nutrition and exercise habits, and strengthened self-care skills.

In conclusion, findings from the literature indicate that diabetes self-management education has positive effects on glycemic control. In order to prevent complications, enhance treatment adherence, and improve quality of life in individuals with type 2 diabetes, it is essential that diabetes self-management education be integrated into clinical practice in a more systematic and continuous manner.

Keywords: type 2 diabetes, glycemic control, diabetes self-management education, HbA1c level

ÜNİVERSİTE ÖĞRENCİLERİNDE UYKU KALİTESİNİN DENGE VE KİNEZYOFOBİ İLE İLİŞKİSİ

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ÖZET

Bu çalışma, üniversite öğrencilerinde uyku kalitesi ile denge performansı ve kinezyofobi düzeyleri arasındaki ilişkileri incelemeyi amaçladı. Araştırmaya 36 üniversite öğrencisi katıldı. Uyku kalitesi Pittsburgh Uyku Kalitesi İndeksi (PUKİ) ile, denge düzeyi Y Denge Testi (YDT) ve Flamingo Denge Testi ile, kinezyofobi düzeyi ise Tampa Kinezyofobi Ölçeği (TKÖ) ile değerlendirildi. Bulgularda, öğrencilerin genel olarak düşük uyku kalitesine sahip oldukları, denge becerilerinin orta seviyede olduğu ve kinezyofobi düzeylerinin orta düzeyde seyrettiği belirlendi. İstatistiksel analizlerde değişkenler arasında anlamlı bir ilişki saptanmadı. Ancak, uyku kalitesi ile dinamik denge arasında negatif yönlü, uyku kalitesi ile kinezyofobi arasında ise pozitif yönlü korelasyon eğilimleri gözlendi. Bu sonuçlar, uyku kalitesinin hem motor fonksiyonlar hem de psikolojik durum üzerinde etkili olabileceğini düşündürmektedir.

Anahtar Kelimeler: Uyku Kalitesi, Denge, Kinezyofobi, Üniversite Öğrencileri, PUKİ, YDT, TKÖ

SOSYAL MEDYA BAĞIMLILIĞI: BİREY VE TOPLUM ÜZERİNDEKİ ETKİLERİ

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ÖZET

Giriş:

Sosyal medya, bireylerin çevrim içi platformlar üzerinden bilgi alışverişinde bulunmasına, iletişim kurmasına ve etkileşim sağlamasına olanak tanıyan bir iletişim yöntemidir. Sosyal medyanın geleneksel medya araçlarının yanında güçlü bir alternatif haline gelmesi, bilgiye ulaşma ve haber alma süreçlerinde de önemli yenilikler meydana getirmiştir. Ancak bu yeniliklerin yalnızca olumlu etkiler yarattığını söylemek mümkün değildir. Sosyal medya bağımlılığı aynı zamanda bireylerin psikolojik durumlarını, sosyal ilişkilerini ve kimlik gelişimlerini olumsuz yönde etkileyebilecek riskler de barındırmaktadır.

Amaç:

Bu çalışma, sosyal medya bağımlılığının birey ve toplum üzerindeki etkilerini literatür doğrultusunda değerlendirmek amacıyla yapılan derleme bir çalışmadır.

Konunun Literatürü:

Literatürde bu konuda yapılan birçok çalışma mevcuttur. Yapılan bir niteliksel analizde, sosyal ağların bireylerin mutluluğu ve yaşam memnuniyeti üzerindeki etkileri incelenmiştir. Bu araştırma, sosyal medya kullanımının bireylerin psikolojik iyi oluşuna olumlu katkılar sağladığını ortaya koyarken, aynı zamanda kaygı ve dikkat dağınıklığı gibi olumsuz durumların da sosyal medya ile bağlantılı olabileceğini belirtmektedir. Sosyal medya kullanımının dikkat eksikliği, öz-disiplin kaybı ve zaman yönetimi sorunlarına yol açtığı saptanmıştır. Sosyal medya bağımlılığı, bireylerin akademik ve profesyonel yaşamında da verimliliği düşürmekte ve sosyal ilişkilerini zayıflatmaktadır. Yapılan bir çalışmada, sosyal medya bağımlılığının kaygı, depresyon ve sosyal izolasyona neden olabileceğini göstermiştir. Başka bir çalışmada iş hayatında aşırı sosyal medya kullanımının verimliliği azalttığını ve dikkat dağınıklığına sebep olduğunu belirtmiştir. Bu bulgular, sosyal medya bağımlılığının bireyleri ve dolayısıyla toplumu çok yönlü etkilediğini göstermektedir.

Sonuç ve Öneriler:

Sosyal medya, bireylerin bilgi alışverişi ve iletişim kurma biçimlerinde önemli kolaylıklar sağlamasına rağmen, aşırı ve kontrolsüz kullanımı çeşitli olumsuz sonuçlara yol açabilmektedir. Sosyal medya bağımlılığının dikkat eksikliği, kaygı, depresyon ve sosyal izolasyon gibi

sorunlara neden olduğu görülmektedir. Sosyal medya bağımlılığını önlemek için farkındalık çalışmaları artırılmalı, bireylerin zaman yönetimi becerileri desteklenmeli ve sosyal medya kullanımına yönelik denge kurmaları teşvik edilmelidir. Ayrıca, sosyal medya bağımlılığının yol açtığı psikolojik sorunların önüne geçebilmek için danışmanlık hizmetleri verilmelidir.

Anahtar Kelimeler: Sosyal medya, bağımlılık, birey.

ABSTRACT

Social Media Addiction: Effects on Individual and Society

Introduction: Social media is a communication method that enables individuals to exchange information, communicate, and interact through online platforms. The emergence of social media as a strong alternative alongside traditional media tools has introduced significant innovations in accessing information and obtaining news. However, it is not possible to claim that these innovations have only positive effects; social media addiction also carries risks that can negatively impact individuals' psychological well-being, social relationships, and identity development.

Objective: This study is a literature-based review conducted to evaluate the effects of social media addiction on individuals and society.

Literature Review: A qualitative analysis in the literature examined the effects of social networks on individuals' happiness and life satisfaction. While this research indicated that social media usage contributes positively to individuals' psychological well-being, it also emphasized that social media could be associated with negative outcomes such as anxiety and distraction. It has been stated that social media usage leads to attention deficit, loss of self-discipline, and time management problems. Social media addiction reduces productivity in individuals' academic and professional lives and weakens their social relationships. One study demonstrated that social media addiction could lead to anxiety, depression, and social isolation. Moreover, another study indicated that excessive social media use in the workplace reduces productivity and causes distraction. These findings reveal that social media addiction affects individuals and, consequently, society in multiple dimensions.

Conclusion and Recommendations: Although social media offers significant conveniences in information exchange and communication, excessive and uncontrolled use may lead to various negative consequences. Social media addiction has been shown to cause problems such as attention deficit, anxiety, depression, and social isolation. To prevent social media addiction, awareness campaigns should be increased, individuals' time management skills should be supported, and efforts should be made to encourage balanced social media usage. Furthermore, counseling services should be provided to address the psychological issues caused by social media addiction.

Keywords: social media, addiction, individual.

HAFİF SINIF SİLAHLI İNSANSIZ KARA ARACI İÇİN ENTEGRE SİSTEM YAKLAŞIMI

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ÖZET

Bu çalışma, askeri ve güvenlik operasyonlarında kullanılmak üzere geliştirilen silahlı bir insansız kara aracını (İKA) konu almaktadır. Sistem, özgün tasarlanmış atış mekanizmasıyla yüksek hareket kabiliyeti ve uzaktan kontrol edilebilirlik sunmaktadır. Kompakt boyutları (30 cm uzunluk, 20 cm genişlik, 15 cm yükseklik) ve yaklaşık 5 kg ağırlığıyla araç, manevra yeteneği ve taşınabilirlik açısından avantaj sağlamaktadır. Zorlu arazi koşullarına uyum için bağımsız süspansiyon sistemine sahip olan araç, dört adet kontrol edilen 12V DC motorla çalışmakta ve 20 km/s azami hıza ulaşabilmektedir. Enerji kaynağı olarak kullanılan 4S 5000mAh Li-Po batarya, yaklaşık bir saat kesintisiz görev süresi sunmaktadır. Gerçek zamanlı görüntü aktarımı sayesinde araç, görüş hattı dışında da güvenle yönlendirilebilmektedir.

Aracın en dikkat çekici özelliği, çift tekerlekli fırlatma mekanizmasıdır. Bu sistem, proje ekibi tarafından özgün şekilde tasarlanmış ve PLA filamentle 3D yazıcıda üretilmiştir. 100 plastik mühimmat taşıma kapasiteli şarjörle beslenen mekanizma, 15–25 metre arasında etkili atış mesafesi sunmaktadır. Yüksek devirli motorlar ve hassas yönlendirme kanallarıyla desteklenen sistem, yüksek isabet oranı ve atış stabilitesi sağlamaktadır. Güvenlik amacıyla entegre edilen acil durdurma butonu sayesinde, olası arıza veya tehlike anında sistem hızlıca devre dışı bırakılabilmektedir.

Yazılım tarafında araç, görev tabanlı modlar içermekte olup otomatik hız yönetimi, yokuş desteği ve devrilme önleyici algoritmalarla donatılmıştır. Görüntü aktarımıyla entegre çalışan yazılım, hedef takibi gibi ileri işlevlere açık bir yapıya sahiptir. Tüm dış iskelet ve mekanik parçalar 3D yazıcıyla PLA malzemeden üretilmiş, bu sayede tasarım hızlıca test edilebilir ve prototip üzerindeki değişiklikler kolayca uygulanabilir hale getirilmiştir. Proje, modern kara tabanlı savunma ve gözetim uygulamaları için düşük maliyetli, özelleştirilebilir ve ölçeklenebilir bir çözüm sunmaktadır.

Anahtar Kelimeler: İnsansız Kara Aracı, Atış Mekanizması, Gerçek Zamanlı Görüntü Aktarımı, 3D Yazıcı Teknolojisi

TRANSFER ÖĞRENME YÖNTEMLERİYLE BEYİN TÜMÖRÜ TESPİTİ

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ÖZET

İnsanlar birçok farklı hastalığa maruz kalmakla birlikte, beyin tümörleri hem çocuklarda hem de erişkinlerde morbidite ve mortalite açısından kritik öneme sahiptir. Erken evrede tanı konulamaması; baş ağrısı, bulantı-kusma veya nörolojik defisitlerin migren, vertigo gibi yaygın şikâyetlerle karışması, MRG ve BT'nin maliyet, erişilebilirlik ve doku ayırt ediciliğindeki kısıtlamaları ile stereotaktik biyopsinin invaziv riskleri, tanı sürecini geciktirmekte ve hasta psikolojisi üzerinde olumsuz etkiler oluşturmaktadır. Bu zorlukları aşmak amacıyla yapay zeka ve özellikle transfer öğrenme tabanlı yöntemler, daha az veriyle yüksek doğruluk ve hızlı öğrenme yetenekleri sayesinde biyomedikal görüntü sınıflandırmada öne çıkmaktadır. Bu çalışmada beyin tümörü MR görüntülerinden oluşan veri seti üzerinde, ResNet50v2, VGG16, VGG19 ve Inceptionv3 mimarileri ile transfer öğrenme yaklaşımı uygulanmıştır. Modellerin tamamı, veri artırma ve uygun hiperparametreler eşliğinde yeni beyin tümörü MR görüntülerine uyum sağlaması için yeniden eğitilmiştir. Böylece model, yalnızca son katmanlardaki sınıflayıcı ağırlıkları değil, aynı zamanda derin konvolüsyon bloklarındaki filtre parametrelerini de güncelleyerek, tüm görsel temsil katmanlarını hedef probleme özgü olarak optimize etmiştir. Bu doğrultuda sırasıyla %99.16, %84.18, %75,44 ve 99.34% doğruluk oranları elde edilmiştir. Bu bulgular, Inceptionv3 tabanlı modelin beyin tümörü sınıflandırmasında Resnet50v2 modeline benzer ve diğer iki VGG mimarisine kıyasla belirgin üstünlük sunduğunu; VGG16 ve VGG19'un ise hâlihazırda klinik destek araçları olarak değerlendirilebilecek düzeyde olmakla birlikte performanslarının daha sınırlı kaldığını göstermektedir.

Anahtar Kelimeler : Beyin Tümörü, CNN, Derin Öğrenme, Transfer Öğrenme

SES VERİLERİNİ SINIFLANDIRMAK İÇİN OPTİMİZE EDİLMİŞ RANDOM FOREST MODELİ: ÖZELLİK ÇIKARIMI VE HİPERPARAMETRE AYARI

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ÖZET

Bu çalışmada, Covid-19 ses verilerinden oluşan ikili sınıflı bir sınıflandırma probleminin çözümünde Random Forest (RF) algoritmasının performansı değerlendirilmiştir. Veri kümesine 5 farklı özellik çıkarımı yapılmıştır. Her ses verisi için 66 özellik çıkarılmıştır. Veri kümesindeki dengesizliği gidermek için SMOTE uygulanmıştır. RF sınıflandırıcısının performansını artırmak için iki ayrı yaklaşım uygulanmıştır. Parçacık Sürü Optimizasyonunun (PSO) iki farklı türü uygulanmıştır. İlk yaklaşımda Sürekli Parçacık Sürü Optimizasyonu (cPSO) ile en iyi hiperparametreler bulunmuş ve model eğitilmiştir. İkinci yaklaşımda İkili Parçacık Sürü Optimizasyon (bPSO) ile özellik seçimi yapılmış ve en anlamlı öznitelikler çıkarılmıştır. Model yeni oluşturulan öznitelikler ile yeniden eğitilmiştir. Model başarımı, karışıklık matrisi, sınıflandırma raporu ve ROC eğrisi olmak üzere üç temel görselleştirme ile analiz edilmiştir. Bu üç yaklaşım için elde edilen performans çıktıları karşılaştırılmıştır. Tüm yaklaşımlar için yüksek değerler elde edilmiştir. Ancak en yüksek doğruluğu bPSO %96 olarak vermiştir.

Anahtar Kelimeler: Rastgele Orman Algoritması, Parçacık Sürü Optimizasyonu, Özellik Çıkarımı, Özellik Seçimi, Covid-19

VERİ AMBARI ETL SÜREÇLERİNDE DEĞİŞEN VERİ YAKALAMA YÖNTEMİNİN KULLANILMASINA YÖNELİK ENERJİ SEKTÖRÜNDE BİR UYGULAMA

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ÖZET

İşletmeler günümüz koşullarında karar verme ve stratejik karar alma amacıyla verilerden yararlanmaktadırlar. Veri ambarları karar vericilere farklı pek çok kaynaktan elde edilmiş verileri işleyerek analitik çözümler sunulmasında yer alan bir teknolojidir. Son yıllarda artan veri kapasiteleri ve işletmelerin karar vermede en güncel verilere göre kararlar almak istemeleri veri ambarı içerisindeki geleneksel yöntemler ile yapılan işlemlerin geliştirilmesine neden olmaktadır. Bu amaçla kaynak sistemlerden elde edilen verilerin hedef sistemlere aktarılması sonrasında hızlı bir şekilde güncel ve yeni verilerin elde edilebilmesi amacıyla Değişen Veri Yakalama (Change Data Capture, CDC) yöntemi kullanılmaktadır. Bu yöntem geleneksel yöntemlere göre kaynak sistemlerdeki değişen verilerin hızlı bir şekilde hedef sistemlere aktarılmasını ve yaşanılabilecek gecikmelerin en aza indirilmesini sağlamaktadır. Bu çalışmada veri ambarında verilerin aktarım süreçleri içerisinde değişen verilerin yakalanması amacıyla Değişen Veri Yakalama yöntemi kullanılmıştır. Bu amaçla Astor Enerji A.Ş.'ye ait veri tabanı üzerinde yer alan canlı verilerin veri ambarına aktarılmasında log tabanlı ve sorgu tabanlı değişen veri yakalama yöntemi kullanılmıştır. Sonuçlar log tabanlı değişen veri yakalama yönteminin sorgu tabanlı değişen veri yakalama yönteminden daha iyi sonuçlar verdiğini ortaya koymaktadır.

Anahtar Kelimeler : Veri ambarı, ETL süreçleri, Değişen veri yakalama

ELECTRE YÖNTEMİ İLE SOSYAL MEDYA PLATFORMLARININ GELİR MODELLERİ KARŞILAŞTIRMASI

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ÖZET

Günümüzde internetin yaygınlaşmasıyla birlikte sosyal medya platformları hayatımızın ayrılmaz bir parçası haline gelmiştir. Artık kime sorarsak soralım, hemen herkesin en az bir sosyal medya platformunda üyeliği bulunmaktadır. Bu platformlar, yalnızca iletişim kurmak için değil, aynı zamanda içerik üretmek, bilgi paylaşmak ve gelir elde etmek için de aktif olarak kullanılmaktadır. Kullanıcılar, günlerinin büyük bir bölümünü sosyal medyada geçirerek içerik tüketmektedir. Ayrıca paylaşımlar yaparak etkileşimde bulunmakta ve dijital dünyada varlık göstermektedirler. Özellikle son yıllarda, sosyal medya platformları bireylere sadece geniş kitlelere ulaşma imkânı sunmakla kalmamış, aynı zamanda önemli bir gelir kapısı haline de gelmiştir. Geleneksel medya araçlarına ihtiyaç duymadan, sadece bir akıllı telefon ve internet bağlantısı ile milyonlarca insana ulaşmak mümkün hale gelmiştir. Markalar da bu dönüşümü fark etmiş, ürün tanıtımları için sosyal medya içerik üreticileriyle iş birliği yapmaya başlamıştır. Artık birçok büyük firma, doğrudan sosyal medya fenomenleri ile içerik üreticileri aracılığıyla reklam yaparak tüketicilere ulaşmayı tercih etmektedir. Bu noktada, sosyal medya platformlarının sunduğu gelir imkânları ve en verimli şekilde nasıl değerlendirileceği önemli bir konu haline gelmiştir. Çeşitli platformlarda içerik üreticilerinin gelir elde edebilmesi için belirli şartlar bulunmaktadır ve her platformun sunduğu fırsatlar farklılık göstermektedir. Bu çalışmada, sosyal medya platformlarının içerik üreticilerine sunduğu gelir modelleri incelenecek ve en iyi gelir elde etme potansiyeli sunan platformların belirlenmesi için Electre yöntemi kullanılacaktır. Çalışmanın sonunda, içerik üreticileri için en uygun sosyal medya platformunun belirlenmesi amaçlanmaktadır.

Anahtar Kelimeler: Karar, Çok kriterli karar verme, Sosyal medya, Electre, Seçim

ENERGY PLANNING VIA PICTURE FUZZY PREVALENCE EFFECT METHOD

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ABSTRACT

As global energy demands rise alongside technological advancements, current energy sources are expected to become inadequate. Moreover, traditional primary energy sources such as coal, oil, and natural gas contribute significantly to environmental harm, causing air and water pollution. This growing concern has prompted nations to prioritize renewable and sustainable energy solutions to reduce ecological damage. Türkiye must identify the most appropriate energy alternatives for long-term sustainability in this context.

Various techniques utilizing mathematical tools such as fuzzy sets, soft sets, intuitionistic fuzzy sets, and picture fuzzy sets have been developed to support this decision-making process. Among these, picture fuzzy sets (*pf*-sets) provide an enhanced framework for addressing complex decision-making scenarios, where individuals may choose to approve, disapprove, remain neutral, or abstain from responding altogether. Their applicability across diverse fields, including artificial intelligence, economics, marketing, and decision-making problems—has made them increasingly valuable for analyzing uncertain data.

This study utilizes the Picture Fuzzy Prevalence Effect Method (PFPEM) for energy planning in Türkiye. We compare the effectiveness of PFPEM with other soft decision-making algorithms, including fuzzy parameterized fuzzy soft matrices (*fpfs*-matrices), intuitionistic fuzzy parameterized intuitionistic fuzzy soft matrices (*ifpifs*-matrices), and classical fuzzy methods, to evaluate and support more accurate and sustainable energy source selection.

Key Words: Picture fuzzy sets, Picture fuzzy soft sets, Picture fuzzy prevalence effect method, energy planning, decision making

EVALUATION OF BINGOL UNIVERSITY STREET IN TERMS OF BARRIER-FREE LANDSCAPE APPROACHES AND ACCESSIBILITY

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ABSTRACT

Disability can be defined as an individual's difficulty in fulfilling daily life activities due to any physical, sensory, mental or social limitation. In this direction, one of the basic principles of contemporary urban life is to ensure that all individuals - regardless of their disability status - can access and benefit from public and private spaces equally. In the discipline of landscape architecture, the concepts of 'barrier-free design' and 'accessibility' are of great importance in the creation of inclusive, functional and aesthetic urban spaces for everyone. Within the scope of this study, University Street in the central district of Bingöl province was selected as a sample area and this area was evaluated in the context of barrier-free landscape approaches and accessibility. Accessibility principles and barrier-free landscape design approaches were explained through a literature review, and the current situation was analysed in the light of these principles through observations in the field. The findings revealed that University Street is currently inadequate in terms of accessibility for physically disabled individuals, the elderly, children and individuals using prams. As a result, various physical and functional improvement suggestions that can be used in landscape design have been developed to make the area more inclusive.

Keywords: Bingol University Street, Barrier-Free Landscape, Accessibility, Urban Design

FLEXIBLE DESIGN CRITERIA IN URBAN OPEN SPACES: AN EXAMINATION OF OPEN SPACE PRODUCTIONS IN THE LANDSCAPE ARCHITECTURE DISCIPLINE

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ABSTRACT

This study emphasizes the importance of the flexible design approach in urban open spaces and examines how this approach can be applied within a theoretical and example-based framework. In line with changing user needs, social dynamics, and environmental conditions today, the principles of flexibility in open space design have been evaluated in the context of sustainability, multifunctionality, and user-centeredness. Within this scope, the open space designs produced in the Flexible Design and Site Production course at the Department of Landscape Architecture, Karadeniz Technical University, were examined according to the principles of flexible design. As a result, the aim was to instill in design students a multidimensional design understanding that can adapt to the changing needs and desires of users and to teach how this can be implemented within the course. The study found that a design approach focused on user satisfaction and adaptable to various uses was successfully integrated from theoretical knowledge into the application phase.

Key Words: Open Space, Flexible Design, Landscape Architecture Education

AN EVALUATİON OF THE THEME OF FREEDOM İN THE CONTEXT OF BASİC DESİGN PRİNCİPLES, DESİGN ELEMENTS AND GESTALT THEORY

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ABSTRACT

This study examines the theme of "freedom" within the context of basic design principles (such as balance, rhythm, emphasis, unity, contrast), design elements (line, shape, color, texture, space), and Gestalt theory. The concept of freedom is analyzed through its historical, cultural, and psychological contexts, as well as its visual communication and perceptual reflections. In this framework, the study explores how the abstract notion of freedom is transformed into concrete design decisions. Within this scope, freedom-themed design works produced in the Basic Design and Studio course of the Department of Landscape Architecture at Karadeniz Technical University are analyzed in accordance with design principles and elements.

Key Words: Basic Design, Gestalt Theory, Design Elements

THE CONCEPT OF ICONICITY IN DESIGN: EXAMPLES FROM LANDSCAPE ARCHITECTURE

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ABSTRACT

In design disciplines, the concept of 'iconicity' has become an important indicator of spatial identity, social memory, and cultural representation. This study analyses the concept of iconicity from theoretical and conceptual perspectives. Landscape projects that have achieved 'iconic' status both globally and in Turkey are investigated in this context. The common design principles and landscape features that contribute to the iconic identity of these projects are analysed.

The first part of the study presents a theoretical framework addressing the definition of iconic design, incorporating concepts such as symbolic value, spatial perception, cultural representation, and urban memory. Iconicity is evaluated based on criteria such as aesthetic distinctiveness, innovative design language, social recognition, and spatial uniqueness. The second part examines globally recognised iconic landscape designs, such as the High Line Park in the USA, Gardens by the Bay in Singapore and Parc Güell in Spain, in detail. The third part focuses on iconic landscape designs in Turkey, including Emirgan Grove (Istanbul) and the Anıtkabir Environmental Landscape (Ankara). It emphasises the key features of these projects that strengthen their iconic status and reveals how these public spaces become symbols.

It emphasises that iconic landscape designs have a significant impact on urban identity, promoting social interaction and a sense of belonging, as well as creating landmarks.

Keywords: Concept of iconicity, Iconic qualities, Examples of iconic landscapes, Landscape architecture

NATURALNESS ON LANDSCAPE DESIGN: PERCEPTUAL AND FORMAL APPROACHES

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ABSTRACT

The relationship between nature and artificial environment is addressed both aesthetically and ecologically with the concept of "naturalness" in the discipline of landscape architecture. In this study, the reflections of naturalness in contemporary landscape design are examined with a multi-layered approach through perceptual and formal dimensions. In particular, within the framework of the concept of perceived naturalness, the focus is on the evaluation of users' environmental aesthetic judgments and cognitive responses. The focus is on how individuals define, interpret and prefer landscapes with natural qualities. Design reflections of naturalness are evaluated through the use of organic forms, local flora preferences in plant diversity, spatial compositions based on irregularity, and design approaches that reference nature in material selection. Within the scope of the study, the aesthetic and functional contributions of naturalness are examined through landscape examples that contain nature-based solutions from urban open green spaces. The findings focus on how designers should design the space in landscape design to enhance the quality of spatial experience and the mental well-being of the user.

In conclusion, naturalness should be considered not only as a formal aesthetic choice in landscape design, but also as a holistic design strategy in terms of environmental sustainability, psychological comfort and social inclusion. In this context, landscape architects' consideration of naturalness as a multidimensional design input is in line with the discipline's basic paradigm based on nature-human interaction.

Keywords: Naturalness, Perceptual Naturalness, Landscape Architecture

FARKLI TÜRLERDEKİ AHŞAP KORUYUCU YAĞLARININ ISIL İŞLEM GÖRMÜŞ ANADOLU KESTANESİ ODUNUNA UYGULANMASI

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Özet

Bu çalışmada, Anadolu kestanesi odununa uygulanan farklı ısıl işlem sıcaklıkları (190°C'de 1.5 saat ve 212°C'de 2 saat) ile çeşitli ticari yağların (teras yağı, masif tezgâh yağı, parke yağı, sauna yağı ve saman yağı) yüzey renk özellikleri üzerindeki etkileri incelenmiştir. L^* değerleri, tüm yağ türleriyle uygulanan işlemler sonucunda, hem ısıl işlem görmüş hem de görmemiş odun örneklerinde azalma göstermiştir. C^*, b^* ve a^* renk parametreleri ise tüm yağlarla yapılan uygulamalarda ısıl işlemsiz örneklerde artış gösterirken, ısıl işlem uygulanmış deney gruplarında düşüş sergilemiştir. h^o değerleri, tüm yağ türleriyle ısıl işlemsiz örneklerde azalma eğilimi gösterirken, yüksek sıcaklıkta (212 °C'de 2 saat) işlem gören örneklerde artış göstermiştir. Ayrıca, 190°C'de 1.5 saat süreyle ısıl işlem uygulanmış grupta yalnızca sauna yağı ile işlem gören örneklerde h^o değerinde artış meydana gelmiş; diğer yağlarla işlem görmüş örneklerde ise h^o değerleri azalmıştır. Bu sonuçlar, ısıl işlem ve kullanılan yağ türünün odun yüzey rengi üzerinde önemli değişimlere yol açtığını ortaya koymaktadır.

Anahtar Kelimeler: Anadolu kestanesi, ısıl işlem, renk değişimi, ahşap koruyucu yağlar

The Application of Wood Finishing Oils of Different Types to Thermally Modified Anatolian Chestnut Wood

Abstract

In this study, the effects of different heat treatment temperatures (190 C for 1.5 h and 212°C for 2 h) and various commercial oils (deck oil, solid countertop oil, parquet oil, sauna oil, and straw oil) on the surface color properties of Anatolian chestnut wood were investigated. The L^* values decreased in both heat-treated and untreated wood samples after the application of all oil types. The C^*, b^*, and a^* color parameters increased in untreated samples with all oils, while they decreased in the heat-treated groups. The h^o values tended to decrease in the untreated samples with all oil applications but increased in the samples treated at high temperature (212°C for 2 h). Additionally, in the group treated at 190°C for 1.5 h, an increase in ho was observed only in the samples treated with sauna oil, whereas a decrease occurred in the samples treated with the other oils. The findings indicate that both the heat treatment and the type of oil applied cause significant changes in the wood surface color.

Keywords: Anatolian chestnut, heat treatment, color change, wood protective oils

ISPM 15 STANDARDINA GÖRE ISIL İŞLEM GÖRMÜŞ GÖKNAR ODUNU YÜZEYLERİNE FARKLI ÖZELLİKLERDEKİ KETEN TOHUMU YAĞLARININ UYGULANMASI

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Özet

Bu çalışmada, ISPM 15 standardına uygun şekilde ısıl işlem görmüş göknar odunu yüzeylerine farklı özelliklerdeki keten tohumu yağlarının (kaynatılmış, soğuk sıkım, ağartılmış ve rafine edilmiş) uygulanmasının renk ve beyazlık özellikleri üzerindeki etkileri araştırılmıştır. Uygulamalar sonucunda odun yüzeylerinde oluşan renk değişimleri *L**, *a**, *b**, *C**, h^o ve *WI** parametreleri üzerinden değerlendirilmiştir. Elde edilen bulgulara göre, tüm yağ türleri kontrol grubuna kıyasla yüzey renginde önemli değişimlere neden olmuştur. Rafine edilmiş keten tohumu yağı, yüzeyde en belirgin koyulaşmayı (*L**) ve en yüksek kırmızılık (*a**), sarılık (*b**), renk doygunluğu (*C**) artışlarını sağlamıştır. Soğuk sıkım yağ ise en sınırlı renk değişimlerini göstermiştir. Beyazlık indeksi (*WI**) bakımından da tüm yağ türleri azalma eğilimi göstermiş, en yüksek düşüş rafine edilmiş yağda, en düşük düşüş ise soğuk sıkım yağda kaydedilmiştir. Sonuçlar, keten tohumu yağı türlerinin estetik görünüm üzerinde farklı derecelerde etkili olduğunu ve bu etkinin yağın işlenme biçimine bağlı olarak değiştiğini ortaya koymaktadır.

Anahtar Kelimeler: Göknar odunu, ISPM 15, ısıl işlem, keten tohumu yağı

The Application of Flaxseed Oils with Different Properties on the Surfaces of Fir Wood Thermally Treated in Accordance with ISPM 15 Standard

Abstract

In this study, the effects of applying flaxseed oils with different properties (boiled, cold-pressed, bleached, and refined) on the surface color and whiteness characteristics of fir wood thermally treated in accordance with the ISPM 15 standard were investigated. The resulting color changes on the wood surfaces were evaluated using the *L**, *a**, *b**, *C**, h^o, and *WI** parameters. According to the findings, all types of flaxseed oil caused significant changes in surface color compared to the control group. Refined flaxseed oil led to the most noticeable darkening (*L**) and the highest increases in redness (*a**), yellowness (*b**), and color saturation (*C**). In contrast, cold-pressed oil caused the least color change. In terms of whiteness index (*WI**), all oil types showed a decreasing trend, with the greatest reduction observed in the refined oil and the least in the cold-pressed oil. The results clearly demonstrate that the type of flaxseed oil has varying degrees of impact on the aesthetic appearance of wood surfaces, and this effect is influenced by the processing characteristics of the oil.

Keywords: Fir wood, ISPM 15, heat treatment, flaxseed oil

THERMODYNAMIC AND EXERGY ANALYSIS OF A SOLAR-ASSISTED HYBRID ENERGY AND WATER PRODUCTION SYSTEM

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ABSTRACT

Increasing demands for energy and clean water have highlighted the importance of developing hybrid systems based on renewable sources. In this study, a hybrid energy and water production system comprising a parabolic solar collector, a heat recovery Rankine cycle, and a multi-effect distillation (MED) unit was modeled using Fortran. The system is designed so that solar-derived heat is first utilized for electricity generation and subsequently, the waste heat is used for water purification. The effects of turbine outlet pressure (5,000–9,500 kPa) and collector outlet temperature (90–180 °C) on system performance were investigated. According to the analysis results, at a turbine outlet pressure of 5,000 kPa, the system produces approximately 88,000 kW net power output, with a Rankine cycle efficiency of 13.6% and an overall thermal efficiency of 12.0%. As the turbine outlet pressure increases, significant decreases were observed in both net power and efficiency values; at 9,500 kPa, the net power drops to 64,000 kW, Rankine efficiency to 10.7%, and overall thermal efficiency to 9.4%. Additionally, the highest exergy destruction was found to occur in the HRSG and MED units. These findings highlight the need for optimization, especially in these units, to improve overall system efficiency. This study provides significant insights for performance analysis and optimization of low-temperature hybrid energy and water production systems.

Keywords: MED, hybrid, Rankine

GÜNEŞ DESTEKLİ HİBRİT BİR ENERJİ VE SU ÜRETİM SİSTEMİNİN TERMODİNAMİK VE EKSERJİ ANALİZİ

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ÖZET

Artan enerji ve temiz su talepleri, yenilenebilir kaynaklara dayalı hibrit sistemlerin geliştirilmesinin önemini ortaya koymuştur. Bu çalışmada, bir parabolik güneş kolektörü, ısı geri kazanımlı Rankine çevrimi ve çok etkili damıtma (MED) ünitesinden oluşan hibrit bir enerji ve su üretim sistemi Fortran dili kullanılarak modellenmiştir. Sistem, güneşten elde edilen ısının öncelikle elektrik üretiminde, ardından atık ısının su arıtımında kullanılması esasına göre tasarlanmıştır. Türbin çıkış basıncı (5.000–9.500 kPa) ve kollektör çıkış sıcaklığı (90–180 °C) gibi parametrelerin sistem performansı üzerindeki etkileri incelenmiştir. Analiz sonuçlarına göre, 5.000 kPa türbin çıkış basıncında sistem yaklaşık 88.000 kW net güç üretmekte; Rankine çevrim verimi %13,6 ve toplam termal verim %12,0 olarak hesaplanmaktadır. Türbin çıkış basıncı arttıkça net güç ve verimlerde belirgin düşüşler gözlemlenmiş; 9.500 kPa'da net güç 64.000 kW'a, Rankine verimi %10,7'ye ve toplam termal verim %9,4'e düşmüştür. Ayrıca, en yüksek ekserji yıkımı HRSG ve MED ünitelerinde meydana gelmiştir. Bu bulgular, özellikle bu iki ünitede yapılacak optimizasyonların genel sistem verimliliğini artırmak açısından kritik olduğunu göstermektedir. Çalışma, düşük sıcaklıklı hibrit enerji ve su üretim sistemlerinin performans analizi ve optimizasyonu için önemli çıkarımlar sunmaktadır.

Anahtar Kelimeler: MED, hibrit, Rankine

EVALUATION OF LOW-TEMPERATURE WASTE HEAT WITH ORC SYSTEMS: PERFORMANCE COMPARISON OF DIFFERENT WORKING FLUIDS

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ABSTRACT

In this study, an Organic Rankine Cycle (ORC) system designed to convert low-temperature waste heat released from industrial stacks into energy was evaluated from thermodynamic and exergetic perspectives. Cycle analyses were conducted using four different organic working fluids (R245fa, n-pentane, isopentane, and R1233zd(E)); performance parameters such as thermal efficiency, net power output, cycle exergy efficiency, and component-based exergy destructions were comparatively examined. The numerical analyses and cycle simulations were carried out using an algorithm written in Fortran programming language in accordance with engineering calculations, utilizing NIST Chemistry Book data. The effects of varying system parameters—such as pump pressure, heat input, and evaporator temperature—on cycle behavior were analyzed in detail. The results revealed that R245fa provided the highest performance with a thermal efficiency reaching 11.5% and a cycle exergy efficiency of 62%. R1233zd(E) stood out with its low environmental impact and balanced thermodynamic performance. On the other hand, n-pentane and isopentane exhibited higher component-based exergy destructions and lower net power outputs. The findings demonstrate that ORC systems are a feasible and efficient technology for waste heat recovery, and that the selection of a suitable working fluid has a direct impact on system efficiency. Furthermore, the Fortran-based analysis framework developed in this study can be effectively used for the computational modeling of similar energy recovery systems.

Keywords: Organic fluid, Rankine cycle, Waste heat recovery

ÖZET

Bu çalışmada, sanayi bacalarından salınan düşük sıcaklıklı atık ısının enerjiye dönüştürülmesini amaçlayan bir Organik Rankine Çevrimi (ORC) sistemi, termodinamik ve ekserjetik açıdan değerlendirilmiştir. Çevrim analizleri, dört farklı organik akışkan (R245fa, n-Pentane, Isopentane ve R1233zd(E)) kullanılarak gerçekleştirilmiş; termal verim, net güç üretimi, çevrim ekserji verimi ve bileşen bazlı ekserji kayıpları gibi performans parametreleri karşılaştırmalı olarak incelenmiştir. Çalışmanın sayısal analizleri ve çevrim simülasyonları, mühendislik hesaplamalarına uygun olarak Fortran programlama dili NİST kimya kitabı kullanılarak yazılmış bir algoritma ile gerçekleştirilmiştir. Sistem parametreleri olarak pompa basıncı, ısı giriş miktarı ve evaporatör sıcaklığı değiştirilerek çevrimin davranışı detaylı şekilde analiz edilmiştir. Sonuç olarak R245fa akışkanının %11,5 seviyesine ulaşan termal verimi ve %62 çevrim ekserji verimi ile en yüksek performansı sağladığını ortaya koymuştur. R1233zd(E) ise düşük çevresel etkisi ve dengeli termodinamik performansıyla dikkat çekmektedir. Diğer yandan, n-Pentane ve Isopentane daha yüksek bileşen bazlı ekserji kayıplarına ve düşük net güç üretimine sahip bulunmuştur. Elde edilen veriler, atık ısının değerlendirilmesinde ORC sistemlerinin uygulanabilir ve verimli bir teknoloji olduğunu göstermekte olup, uygun akışkan seçiminin sistem verimliliği üzerinde doğrudan etkili olduğu sonucuna ulaşılmıştır. Ayrıca, bu çalışma kapsamında geliştirilen Fortran tabanlı analiz yapısı, benzer enerji geri kazanım sistemlerinin hesaplamalı modellemesinde de etkin biçimde kullanılabilir.

Anahtar Kelimeler: Organik akışkan, Rankine çevrimi, Enerji geri kazanım

T BİRLEŞİMLİ BOŞLUKLU HAFİF ÇELİK ÇERÇEVELERİN MOMENT-DÖNME KARAKTERİSTİK DAVRANIŞININ İNCELENMESİ

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ÖZET

Bu çalışma, soğuk şekillendirme yöntemiyle üretilmiş hafif çelik profiller kullanılarak oluşturulan T tipi birleşim detaylarının, tekrarlı/döngüsel yükler altındaki yapısal tepkilerini deneysel olarak araştırmayı amaçlamaktadır. Yapı sistemlerinde sıkça karşılaşılan bu birleşim türünün performansını etkileyen başlıca parametreler arasında guse levhası kalınlığı, profil kesit et kalınlığı ve kiriş gövdelerine uygulanan delik sayısı gibi geometrik değişkenler yer almaktadır. Bu doğrultuda, deneysel çalışmada farklı kombinasyonlara sahip toplam 5 adet birleşim numunesi hazırlanmış ve FEMA-350 döngüsel yükleme protokolü doğrultusunda test edilmiştir. Yük–yer değiştirme verileri temel alınarak her bir numunenin taşıma kapasitesi, rijitlik düzeyi, süneklik davranışı ve enerji yutma kapasitesi gibi temel performans göstergeleri değerlendirilmiştir. Deney bulguları, özellikle daha kalın guse levhalarının ve kesit et kalınlığının birleşim rijitliğini ve maksimum yük taşıma kapasitesini artırdığını; buna karşılık, artan delik sayısının süneklik üzerinde olumlu etkiler yaratsa da rijitlik ve dayanım üzerinde zayıflatıcı etkiler oluşturduğunu göstermektedir. Sonuçlar, güncel literatürde yer alan bulgularla karşılaştırmalı olarak analiz edilmiş ve bu çalışmanın özellikle birleşim geometrisi ile performans kriterleri arasındaki ilişkiyi deneysel düzeyde ortaya koyarak hafif çelik yapıların tasarımına yönelik önemli katkılar sunduğu belirlenmiştir.

Anahtar Kelimeler: Hafif çelik yapı, T birleşimi, döngüsel yükleme, deneysel analiz, rijitlik, süneklik

A NOTE ON ABSOLUTE MATRIX SUMMABILITY METHOD

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ABSTRACT

In the present paper, a known result about absolute Riesz summability of an infinite series is generalized to the $\phi-\left|T;\gamma\right|_k$ summability method

Keywords : Absolute matrix summability, Infinite series, Riesz summability

ON THE ALMOST INCREASING SEQUENCES

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ABSTRACT

In the paper, a result on $|C, \beta; \sigma|_k$ summability factors is obtained by using an almost increasing sequence.

Keywords: Almost increasing sequence, Summability factors, Cesàro mean

AISI 1020 ÇELİĞİNİN YÜZEYİNDE GERÇEKLEŞTİRİLEN NİKEL SÜLFAMAT KAPLAMALARA BORİK ASİT İLAVESİNİN, KAPLAMA ÖZELLİKLERİ ÜZERİNE ETKİSİ

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ÖZET

Endüstride yaygın olarak kullanılan AISI 1020 yapı çeliğinin korozyon direncini ve yüzey özelliklerini artırmak amacıyla, bu çalışmada elektro-kimyasal kaplamanın avantajlarından yararlanılarak, Nikel sülfamat çözeltisi ile elde edilen Nikel esaslı kaplamalara çeşitli oranlarda ilave edilen Borik Asit'in kaplama performansı ve kalitesi üzerine etkileri araştırılmıştır. Bu amaçla Nikel Sülfamat çözeltisi içerisine 5, 10, 20, 40 ve 60 gr/lt oranlarında Borik Asit ilavesi yapılarak 45 °C sıcaklıkta 40 dk süreyle kaplama işlemi gerçekleştirilmiştir. Kaplama DC güç kaynağı kullanılarak, 4 A/dm^2 akım değerinde gerçekleştirilmiştir. Üretilen Ni esaslı kaplamaların morfolojisi, sertliği ve potansiyodinamik korozyon testleri; taramalı elektron mikroskobu (SEM), X-ışını difraksiyon analizi (XRD), Enerji dağılım spektroskopisi (EDS) ve Vickers mikrosertlik testleri gerçekleştirilmiştir. Kaplama kalınlıkları 8 µm ile 26 µm değerleri arasında değişm göstermektedir. Kaplamaların sertlik değerleri Borik asit katkısına bağlı olarak 185 ile 357 $HV_{0.1}$ değerleri arasında değişim göstermiştir. Yapılan araştırmalar sonucunda; borik asit ilavesinin kaplama kalitesi üzerinde belirleyici rol oynadığını göstermiştir. Borik asit içermeyen banyolarda gözlenen pürüzlü, düzenli olmayan ve gözenekli yapıların aksine, borik asit içeren çözeltilerle yapılan kaplamalarda çok daha düzgün, çatlak içermeyen ve homojen kaplama tabakası elde edilmiştir. Ayrıca Borik asit ilave edilen kaplama banyolarından elde edilen Nikel esaslı kaplamaların sertliklerinde önemli artışlar gözlemlenmiştir. XRD çalışmalarında Nikel haricinde Ni_3B fazının varlığı da tespit edilmiştir.

Anahtar Kelimeler: Nikel Sülfamat Kaplama, AISI 1020 Çeliği, Borik Asit, Korozyon

THE EFFECT OF BORIC ACID ADDITION ON THE PROPERTIES OF NICKEL SULFAMATE COATINGS APPLIED TO THE SURFACE OF AISI 1020 STEEL

ABSTRACT

In this study, the effects of boric acid (H_3BO_3) additions on the performance and quality of nickel-based coatings were investigated to enhance the corrosion resistance and surface properties of widely used AISI 1020 structural steel. Electrochemical deposition was carried out using a nickel sulfamate electrolyte, with boric acid added at concentrations of 5, 10, 20, 40, and 60 g/L. The coatings were deposited at 45 °C for 40 minutes under a constant current density of 4 A/dm² using a DC power supply.

The morphology, microhardness, and corrosion resistance of the produced Ni-based coatings were characterized by Scanning Electron Microscopy (SEM), X-ray Diffraction (XRD), Energy Dispersive Spectroscopy (EDS), and Vickers microhardness tests. The coating thicknesses ranged from 8 µm to 26 µm, while the hardness values varied between 185 and 357 $HV_{0.1}$ depending on the amount of boric acid. The results indicated that boric acid played a critical role in improving coating quality. Compared to the rough, irregular, and porous structures observed in coatings produced without boric acid, smoother, crack-free, and homogeneous coating layers were obtained from baths containing boric acid. Furthermore, significant improvements in hardness were observed in boric acid-containing coatings. XRD analysis also revealed the presence of the Ni_3B phase in addition to the nickel matrix.

In conclusion, the incorporation of boric acid into the nickel sulfamate bath was found to be a key parameter in enhancing both the mechanical and corrosion properties of the electroplated nickel-based coatings.

Key words: Nickel Sulfamate Coating, AISI 1020 Steel, Boric Acid, Corrosion

POLİVİNİLPROLİDON (PVP) MİKTAR VE MOLEKÜL AĞIRLIĞININ PLATİN NANOPARTİKÜLLERİNİN SENTEZİ ÜZERİNDEKİ ETKİSİNİN İNCELENMESİ

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ÖZET

Platin nanopartikülleri (PtNP'ler), yüksek biyouyumlulukları, reaktiviteleri ve elektrokimyasal özellikleri nedeniyle biyomedikal uygulamalarda sıklıkla kullanılmaktadır. Ayrıca PtNP'lerin yüksek katalitik aktiviteye sahip olduğu bilinmektedir. Diğer yandan toksik ve iyonik olmayan bir polimer olan polivinilpirolidon (PVP), metal NP'lerin sentezinde yaygın olarak kullanım bulmaktadır. PVP bir yüzey sabitleyici, büyüme düzenleyici, nanopartikül dağıtıcı ve indirgeyici ajan olarak nanopartikül sentezinde görev almaktadır. Bu çalışmada PtNP sentezi kloroplatinik asit hidrat ve farklı molekül ağırlıklarında (10.000, 40.000 ve 1.300.000) PVP kullanılarak etil alkol varlığında 110 °C'de gerçekleştirilmiştir. Hazırlanan nanopartiküllerin karakterizasyon çalışmaları X-ışınları difraktometresi (XRD), Fourier dönüşümlü kızılötesi spektrometresi (FTIR), UV-vis spektrofotometresi ve taramalı elektron mikroskobu (SEM) ile yapılmıştır. PtNP'lerin ayrıca fosfat tamponlu salin (PBS) içerisinde CaO_2 nanopartikülleri varlığında oluşan H_2O_2'den oksijen üretilmesi sırasındaki katalitik etkisi incelenmiştir. Sonuçlar, ilgili sistemde 110 °C'de 1 saat sonunda Pt^{4+}'ün indirgenerek Pt^0 oluşturduğunu göstermektedir. Çalışma kapsamında kullanılan PVP'lerin artan miktar ve molekül ağırlığına bağlı olarak PtNP dispersiyonlarının UV absorbans değerlerinde artış gözlenirken, aynı örneklerin FTIR spektrumunda PVP'ye ait fonksiyonel grupların şiddetinde azalma olduğu anlaşılmıştır. CaO_2 nanopartiküllerinin PBS ortamında, katalizör olarak PtNP varlığında O_2 oluşturma miktarı, PtNP olmadığı duruma göre çok daha yüksek elde edilmiştir.

Anahtar Kelimeler: Platin, nanopartiküller, PVP, biyomedikal uygulamalar.

BİYOMEDİKAL UYGULAMALARDA KULLANILMAK ÜZERE CaO_2 NANOPARTİKÜLLERİNİN SENTEZİ VE KARAKTERİZASYONU

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ÖZET

Kalsiyum peroksit (CaO_2), antitümör ve antibakteriyel özellikleri nedeniyle biyomedikal uygulamalarda ilgi gören bir malzemedir. CaO_2 partikülleri su ile reaksiyona girerek, kalsiyum iyonu (Ca^{2+}), oksijen (O_2) ve hidrojen peroksit (H_2O_2) üretmektedir. Bu çalışmada gastrointestinal sistem rahatsızlıklarının tedavisinde kullanılmak üzere CaO_2 nanopartikül sentezi gerçekleştirilmiştir. Sentez çalışmalarında kalsiyum hidroksit ve polivinil alkol kullanılmıştır. Hazırlanan nanopartiküllerin karakterizasyon çalışmaları X-ışınları difraktometresi (XRD), Fourier dönüşümlü kızılötesi spektrometresi (FTIR), UV spektrofotometresi ve taramalı elektron mikroskobu (SEM) ile gerçekleştirilmiştir. Nanopartiküllerin ayrıca farklı fizyolojik sıvılar (fosfat tamponlu salin, PBS ve simüle mide sıvısı, SGF) içerisinde oksijen üretme davranışı incelenmiştir. Sonuçlar sentezlenen nanopartiküllerin kristalit boyutunun ~11 nm olduğunu göstermektedir. Farklı miktarlardaki (5, 10, 20 mg) CaO_2 nanopartiküllerinin, 3 ml fosfat tamponlu salin (pH: 7.4) ve simüle mide sıvısı (pH 1.2) içerisindeki O_2 üretme davranışının aynı olmadığı görülmüştür. Sentezlenen CaO_2 nanopartiküllerinin PBS içerisinde statik koşullar altında 30 dk bekletilmesi sonucu PBS'de çözünmüş O_2 konsantrasyonu 10.2 mg/L seviyesinde ölçülmüştür. Diğer yandan pepsin içermeyen SGF içerisinde 20 mg CaO_2 nanopartiküllerinin varlığında çözünmüş O_2 seviyesi 1.5 dakikada 20 mg/L değerine ulaşmıştır. Kullanılan SGF'nin pepsin içermesi durumunda O_2 üretme seviyesinde bir miktar düşüş olduğu gözlenmiştir. Sonuçlar, ayrıca çalışma kapsamında sentezlenen nanopartiküllerin hem PBS hem de SGF içerisinde O_2 üretme kapasitesinin 45 güne dek devam ettiğini göstermiştir.

Anahtar Kelimeler: Kalsiyum peroksit nanopartikülleri, O_2 üretimi, biyomedikal uygulamalar.

WHAT IS THE NONDESTRUCTIVE TESTING?

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ABSTRACT

Nondestructive testing (NDT) is an examination, test, or evaluation performed on any type of test object without changing that object in any way, to determine the absence or presence of conditions or discontinuities that may affect the usefulness or serviceability of that object. Non-destructive testing (NDT) is a mechanism used by engineers to detect defects in materials and structures, either during manufacturing or while in service. In the current study, the historical developments of the nondestructive techniques, their limitations, and benefits have been presented in detail. The destructive testing methods are also discussed. The important conditions for effective NDT are given.

Key Words: Nondestructive Testing, Visual Testing, Penetrant Testing, Radiographic Testing, Destructive Testing

KİTOSAN BAZLI Semi-IPN HİDROJELLERİN DİNAMİK ŞİŞME VE FİCK DİFÜZYON KİNETİĞİ

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ÖZET

Bu çalışmada, kitosan bazlı itakonik asit (IA)-Akrilamit(AAm)-N-t-bütil akrilamit(N-t-BAAm) semi-IPN hidrojelleri sentezlendi. Şişme davranışları başka bir çalışmada sunulmuş olan bu hidrojellerin şişme kinetikleri ve difüzyon davranışları belirlendi. Sentezlenen hidrojellerde çapraz bağlayıcı konsantrasyonu, hidrofobik monomer (N-t-BAAm), IA/AAm oranı değiştirilerek farklı özelliklere sahip hidrojeller elde edilmeye çalışıldı. Ayrıca şişme davranışları farklı sıcaklık ve pH ortamlarında gerçekleştirildi. Şişme kinetiğine, sıcaklık, pH, IA/AAm oranı, kitosan miktarı, çapraz bağlayıcı konsantrasyonu, hidrofobik monomer miktarının etkisi ayrı ayrı araştırıldı. Şişme kinetiği çalışmalarından elde edilen maksimum şişme kapasitesi (S_{maks}) değerleri ile deneysel olarak elde edilen S_{maks} değerleri karşılaştırıldığında değerlerin birbirine yakın çıktığı gözlendi. Sentezlenen tüm jeller için şişme hız sabitleri $1x10^{-3}$ – $1x10^{-6}$ aralığında çıktığı belirlendi. Fick difüzyon yasasından faydalanılarak yapılan difüzyon çalışmalarından difüzyon üstelinin (n) tüm jeller için $0,5<n<1.0$ aralığında değerler aldığı tespit edildi. Buradan çıkışla, sentezlenen tüm jellerin Fick tipinde olmayan (düzensiz) difüzyon tipinde difüzyon yaptığı söylenebilir. Bu difüzyon tipinde, jelin gevşeme hızı (R_{gev}) suyun difüzyon hızından ($R_{dif.}$) daha küçük olmaktadır. Yani difüzyon olayı gevşeme kontrollüdür.

Anahtar Kelimeler: Hidrojel, İtakonik Asit, Akrilamit, Kitosan, Şişme Kinetiği, Difüzyon.

KİTOSAN BAZLI Semi-IPN HİDROJELLERİN SENTEZİ, ŞİŞME DAVRANIŞLARI VE BU DAVRANIŞLARA ETKİ EDEN PARAMETRELER

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ÖZET

Bu çalışmada, farklı oranlarda itakonik asit (IA), akrilamit (AAm), N- tersiyer bütil akrilamit (N-t-BAAm) ve kitosan ile beraber başlatıcı (amonyum persülfat) ve çapraz bağlayıcı (metilen bisakrilamit) kullanılarak hidrojeller hazırlandı. Sentezlenen hidrojellerin şişme davranışı ve şişme kapasitesine etki eden parametreler incelendi. Hidrojellerin şişme davranışı ve kapasitesine etki eden parametreler olarak sıcaklık, kullanılan monomerlerin mol oranları, kitosan, farklı pH ortamı ve çapraz bağlayıcı etkisi araştırıldı. Şişme davranışına sıcaklığın etkisinin incelendiği çalışmalarda 25, 37, 45 ve 55°C'de çalışmalar gerçekleştirildi. Sıcaklık arttıkça hidrojelin şişme kapasitesinin azaldığı ve sentezlenen hidrojelin negatif sıcaklık duyarlı jel olduğu belirlendi. pH etkisi için de farklı pH (pH= 4, 6, 7, 8 ve 10) değerlerine sahip tampon çözeltiler hazırlandı ve bu çözeltilerdeki şişme davranışları incelendi. Ortam pH'ı arttıkça hidrojelin şişme hızı ve kapasitesinin de arttığı belirlendi. Çapraz bağlayıcının etkisinin incelendiği çalışmalarda, çapraz bağlayıcı miktarı arttıkça hidrojelin şişme hızı ve kapasitesinin azaldığı gözlemlendi. Kitosanın etkisinin incelendiği çalışmalarda, kitosan miktarı 0,015 gram olana kadar yüksek ve sabit bir şişme kapasitesi gözlenirken bu miktarın üzerine çıkıldığında şişme kapasitesinde düşme gözlemlendi. IA/AAm mol oranının etkisinin incelendiği çalışmalarda bu oranın artmasıyla şişme hızı ve kapasitesinin azaldığı gözlemlendi. Ayrıca, hidrofobik monomer olan N-t-BAAm'in yapıya girmesiyle hidrojelin şişme hızı ve kapasitesinin arttığı gözlemlendi.

Anahtar Kelimeler: Hidrojel, İtakonik Asit, Akrilamit, Kitosan, Şişme Davranışı.

ORGANİK ZEMİNLERİN SODYUM SİLİKAT VE DÜŞÜK KARBONLU ÇİMENTO İLE İYİLEŞTİRİLMESİ

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ÖZET

Bu çalışmanın amacı, geoteknik açıdan en problemli zeminlerden biri olan organik zemine, belli oranlarda sodyum silikat ve düşük karbonlu çimento ekleyerek mühendislik özelliklerinin iyileştirilmesidir. Organik zeminler, düşük taşıma kapasitesi ve yüksek sıkıştırılabilirliğe sahip olması nedeniyle yapılaşma açısından elverişsizdir. Bu çalışmanın önemi, kentleşme ve sanayileşme ile artan nüfusla birlikte, taşıma gücü ve oturma bakımından elverişli olmayan bu tür zeminlerde iyileştirme yapılarak daha sağlıklı, kabul edilebilir bir şekilde yapılar inşa ederek kullanılabilirliğin artırılmasıdır. Ayrıca organik zeminler üzerinde yapılan bu iyileştirme, literatürdeki sınırlı çalışmalara katkıda bulunması ve eksikliği kapatması açısından önem taşımaktadır. Çalışmada yöntem olarak, laboratuvarda hazırlanan organik zemin numunelerine endeks özelliklerini belirlenmek amacıyla dane çapı dağılımı, su içeriği, özgül ağırlık ve kıvam limitlerinin belirlenmesi deneyleri yapılmıştır. Ardından %10 çimento, %10 uçucu kül ve %5 sodyum silikat ekleyerek serbest basınç deneyi ve Kaliforniya taşıma gücü (CBR) deneylerine tabi tutulmuştur. Elde edilen bulgular, katkı malzemelerinin dayanımı artırdığını göstermiştir. Ayrıca çimentoya belli oranda uçucu kül eklendiğinde doğaya salınan karbondioksit miktarı azaltılmış olup daha çevreci bir yaklaşım ortaya konulmuştur. Sonuç olarak, sodyum silikat ve düşük karbonlu çimento kullanarak zemin iyileştirmesi yapıldığında organik zeminin mühendislik özelliklerini geliştirerek daha çevreci ve güvenli bir yapılaşma koşulları sunduğu belirlenmiştir. Bu yönüyle çalışma, sürdürülebilir zemin iyileştirme çalışmalarına katkı sunmaktadır.

Anahtar Kelimeler : Organik zemin, zemin iyileştirme, sodyum silikat, uçucu kül, çimento.

METAKAOLİN ESASLI GERİ DÖNÜŞTÜRÜLMÜŞ AGREGA KULLANILARAK ÜRETİLEN GEOPOLİMER HARÇLARIN ÖZELLİKLERİ

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ÖZET

Geopolimer betonlar çimento kullanılmadan üretilen çevre dostu bir beton olarak öne çıkmaktadır. Uçucu kül (UK), yüksek fırın cürufu (YFC) gibi endüstriyel atıkların bu betonların üretiminde kullanılabilmesi de karbon salınımının azaltılmasında etkin bir rol oynamaktadır. Bu çalışmada metakaolin (MK) kullanılarak geopolimer harçlar üretilmiş ve 30°C ve 60 °C olmak üzere iki farklı kürleme sıcaklığı belirlenmiştir. Üretilen örnekler kalıplara yerleştirilir yerleştirilmez ilgili sıcaklıkta 4 saat boyunca kürlenmeye maruz bırakılmıştır. Kontrol karışımları sadece standart kum kullanılarak üretilmiş ve akabinde geri dönüştürülmüş agrega (GDA) ile ikameli olarak kullanılmıştır. GDA, standart kum ile %10, %20 ve %30 oranlarında yer değiştirilerek kullanılmıştır. Örneklerin taze hal özelliklerinden işlenebilirliği, sertleşmiş hal özelliklerinden ise eğilme ve basınç dayanımları belirlenmiştir. Elde edilen sonuçlar artan oranda geri dönüştürülmüş agrega kullanımının hem işlenebilirliği hem de mekanik özellikleri azalttığını göstermiştir. Ayrıca daha yüksek sıcaklıkta kürlenen örneklerin (60°C) dayanım gelişimlerinin daha hızlı olarak gerçekleştiği sonucu elde edilmiştir.

Anahtar Kelimeler : Geopolimer beton, geri dönüştürülmüş agrega, metakaolin.

PROPERTIES OF METAKOLIN-BASED GEOPOLYMER MORTARS PRODUCED WITH RECYCLED AGGREGATE

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ABSTRACT

Geopolymer concretes stand out as an environmentally friendly alternative to traditional concrete, produced without the use of cement. The fact that industrial wastes, such as fly ash (FA) and blast furnace slag (BFS), can be used in the production of these concretes also plays a significant role in reducing carbon emissions. In this study, geopolymer mortars were produced using metakaolin (MK), and two different curing temperatures were investigated: 30 °C and 60 °C. The produced samples were immediately placed in the molds and subjected to curing at the relevant temperature for 4 hours. Control mixtures were produced using only standard sand and then used as a substitute with recycled aggregate (RA). RA was used by replacing standard sand at rates of 10%, 20%, and 30%. The workability of the samples was determined based on their fresh state properties, while flexural and compressive strengths were determined from their hardened state properties. The results obtained showed that increasing the use of recycled aggregates reduced both workability and mechanical properties. Additionally, it was concluded that the strength development of the samples cured at higher temperatures (60 °C) occurred more rapidly.

Keywords : Geopolymer concrete, recycled aggregate, metakaolin.

KAYSERİ İLİNİN DEPREMSELLİĞİNİN ARAŞTIRILMASI

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Orta Anadolu'da yer alan Kayseri, büyük levhaların etkisi altında bulunan karmaşık bir tektonik bölgedir. Depremselliği, bölgeye eşit olarak dağılmak yerine aktif faylar boyunca yoğunlaşmıştır. Bu fayların anlaşılması, kayma hızları ve tekrarlanma aralıklarının bilinmesi, deprem tehlikesinin değerlendirilmesi, risklerin azaltılması ve etkin afet hazırlık stratejilerinin geliştirilmesi açısından önemlidir.

Bu çalışma, Kayseri'deki deprem aktivitesini literatür taraması ve İğdecik, Bünyan bölgesinde yapılan mikrobölgeleme çalışması ile değerlendirmektedir. Çalışmada deprem kayıtları, fay haritaları, zemin sınıflandırmaları ve jeoteknik veriler kullanılmıştır. Ana analizler, tektonik yapı, fay aktivitesi, kayma hızları ve Vs30 zemin parametreleri üzerine olup, yerel zemin davranış modellemesi ve deprem tehlikesi değerlendirmesine katkı sağlamaktadır.

Bu çalışmada, jeolojik ve sismolojik veriler kullanılarak Kayseri'nin deprem riski değerlendirilmiştir. Kesme dalga hızı (Vs), zemin yükselimi ve mikro-titreşimler ölçülmüş; Vs30 değerleri 847–997 m/s arasında olup, yükselme katsayıları 2,22–2,28 olarak bulunmuştur. Hava koşullarından aşınmış, su oranı yüksek zeminlerde rezonans riski daha fazla olup, zemin koşullarının yapı tasarımında göz önünde bulundurulmasının önemi vurgulanmıştır.

Bu çalışma, jeolojik, jeoteknik ve sismik yöntemlerle Kayseri'deki deprem riskini ve zemin özelliklerini analiz etmiştir. Aktif fayların varlığı bölgesel deprem tehlikesini artırmakta, bu nedenle yapıların tasarımında titizlik gerekmektedir. Mikro-titreşim ölçümleri, MASW ve sismik kırılma yöntemleri ile zemin dinamik özellikleri, yükselme katsayıları ve titreşim periyotları belirlenmiş, yerel deprem davranışına dair önemli bilgiler elde edilmiştir. Bu veriler, daha güvenli mühendislik uygulamaları için temel teşkil etmektedir.

Anahtar Kelimeler : Kayseri, Depremsellik, Mikrobölgeleme, Aktif Faylar, Zemin Sınıflandırması

COMPARATIVE EVALUATION OF SELECTED SOFTWARE-ASSISTED SURFACE ANALYSIS TECHNIQUES IN NANOSCALE SURFACE CHARACTERIZATION

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ABSTRACT

This study presents a comparative analysis of metrology techniques for nanosurface characterisation, focusing on a phone case sample coated with nanoholograms. Surface roughness was characterised using Scanning Electron Microscopy (SEM), Atomic Force Microscopy (AFM), an Optical Profilometer and Infinite Focus Microscopy, in accordance with ISO standards. SEM analysis yielded Rq values of 0.015–0.024 µm with a resolution of 1.2–3.0 nm, whereas AFM determined Ra values of 4.757–47.041 nm with a vertical resolution of 0.05 nm.

Infinite focus microscopy provided rapid 3D scanning, yielding Sa and Sq values of approximately 0.103 µm and 0.136 µm, respectively, while the 3D profilometer detected Ra values ranging from 72.3 nm to 2.14 µm with a vertical resolution of less than 1 nm. The comparative evaluation revealed that AFM is optimal for sub-nanometre precision applications, while infinite focus microscopy offers rapid 3D characterisation.

The study emphasises the important threshold of Ra <50 nm for optical applications and provides guidance on selecting appropriate metrology methods for nanomaterial characterisation. The results demonstrate that the integrated use of multiple techniques is essential for accurately measuring nanosurface properties.

Keywords: Atomic Force Microscopy, Nanotechnology, Material Characterisation, Surface Analysis, Nanoscale Structures[1]

[1]This study is derived from the thesis "Comparative Evaluation of Selected Software-Assisted Surface Analysis Techniques in Nanoscale Surface Characterization" prepared under the supervision of Prof. Dr. Nevcihan Gürsoy.

EKOLOJİK BİNALARIN ZAMAN İÇİNDE ÜLKE EKONOMİSİNE KATKILARI

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ÖZET

Bu çalışma, ekolojik bina uygulamalarının uzun vadede ülke ekonomisine sağladığı katkıları çok boyutlu olarak ele almayı amaçlamaktadır. Geleneksel yapı tekniklerine kıyasla daha sürdürülebilir ve çevre dostu olan ekolojik binalar; enerji verimliliği, su tasarrufu, atık yönetimi ve yenilenebilir kaynak kullanımı gibi özellikleriyle öne çıkmaktadır. İlk yatırım maliyetleri her ne kadar yüksek olsa da, bu yapıların işletme ve bakım giderlerinde sağladığı tasarruf, orta ve uzun vadede önemli ekonomik avantajlar sunmaktadır. Ayrıca, yerel malzeme kullanımının teşvik edilmesi, yeşil bina teknolojilerinin geliştirilmesi ve istihdam yaratma potansiyeli, ekolojik yapıların makroekonomik düzeydeki etkilerini güçlendirmektedir. Bu bağlamda çalışmada, çeşitli ülkelerden örnekler incelenerek, ekolojik binaların kamu harcamalarına, enerji ithalatına, inşaat sektörünün dönüşümüne ve sürdürülebilir kalkınma hedeflerine olan katkıları analiz edilerek ekonomik büyüme ve kaynak verimliliği açısından stratejik bir değer taşıdığı sonucuna varılmıştır.

Anahtar Kelimeler : Ekolojik bina, Sürdürülebilirlik, Enerji tasarrufu, Çevre ve iklim.

GÜNEŞ ENERJİSİ SİSTEMLERİNİN ÇATI TİPİ, CEPHE YÖNELİMİ VE PANEL TÜRLERİNİN ÜRETİM PERFORMANSINA ETKİSİNİN İNCELENMESİ

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ÖZET

Güneş enerjisi sistemlerinin verimli çalışabilmesi, sadece panel teknolojisine değil, aynı zamanda binanın mimari tasarımına da doğrudan bağlıdır. Bu derleme çalışmasında, güneş enerjisi üretim performansını etkileyen başlıca tasarım parametreleri olan cephe yönelimi ve çatı tipolojisi ile güneş enerjisi panel türleri incelenmiştir. Literatürdeki mevcut çalışmalar, binanın güney yöneliminin enerji üretiminde optimum performans sağladığını, ancak bölgesel iklim ve çevresel faktörlere bağlı olarak farklı yönelimlerin de avantaj sağlayabileceğini göstermektedir. Çatı tipine göre yapılan analizlerde ise eğimli çatıların, panel yerleşimi açısından düz çatılara göre daha avantajlı olduğu, ancak düz çatıların tasarım esnekliği sunduğu belirtilmiştir. Ayrıca BIM (Yapı Bilgi Modellemesi) tabanlı simülasyonların, bu değişkenlerin erken tasarım aşamasında değerlendirilmesine olanak sağlayarak enerji verimliliği odaklı tasarıma katkı sunduğu görülmektedir. Bu çalışma, güneş enerjisi sistemlerinin bina entegrasyonuna yönelik sürdürülebilir tasarım stratejileri geliştirmek isteyen araştırmacılar ve uygulayıcılar için kapsamlı bir kaynak sunmayı amaçlamaktadır.

Anahtar Kelimeler : Güneş enerjisi, Cephe yönelimi, Sürdürülebilir yapı, Enerji verimliliği, BIM (Yapı Bilgi Modelleme)

A numerical scheme based on Taylor expansion with strong order of convergence 1 for RODEs

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Abstract

The main objective of this paper is to investigate numerical methods for solving ordinary differential equations involving stochastic processes with dimensions greater than one. Differential equations with an Itô diffusion, which is a solution to an Itô stochastic differential equation, are examined. For this aim, a numerical method based on Taylor expansion which has the order of convergence 1 is applied. Numerical expriements are established to show the theoretical results numerically.

Keywords:

Random differential equations, double stochastic integrals.

Convergence of multi-step methods for Random Differential Equations with Wiener noise

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Abstract

Random Ordinary Differential Equations (RODEs) represent a critical class of differential equations where randomness is incorporated either in the parameters, initial conditions, or driving processes. These equations are pivotal in modeling real-world phenomena influenced by stochasticity, such as biological systems, financial markets, and physical processes.

One-step and multi-step methods provide a computationally efficient and theoretically robust framework for numerically solving RODEs. This paper explores the development, analysis, and implementation of these methods tailored for RODEs. Additionally, this study includes a numerical example demonstrating the applicability of the proposed methods.

Keywords:

Random differential equations, one-step methods, multi-step methods.

Model-Based Image Processing: Variational Advances

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ABSTRACT

Model-based methods have long provided a principled foundation for image processing by embedding prior knowledge directly into the formulation of inverse problems. In contrast to data-driven approaches, such as deep learning, model-based methods offer interpretability, stability, and often require less training data. This talk begins with a brief comparison between model-based and data-driven paradigms in imaging, highlighting their complementary strengths.

The focus will then shift to recent advances in model-based image processing, with an emphasis on variational methods. I will review my contributions in this area, starting with **Shannon Total Generalized Variation (TGV)**, a modified TGV model incorporating Shannon entropy, which improves structure-preserving image reconstruction. Next, I introduce our recent work on **Shannon Infimal Convolution**, extending this framework to more flexible regularization.

Further, I will present a **discrete TGV model** that is both **rotation invariant** and a **more faithful approximation** of the continuous TGV functional, addressing a long-standing limitation in discrete variational models. I will also highlight recent efforts in **parameter learning** for TGV-based models, showing how hybrid approaches can bridge model-based and data-driven techniques.

Finally, I will discuss the promising direction of **extending TGV to graph domains**, enabling applications beyond regular grids and opening pathways to processing irregular data structures such as social, biological, and sensor networks.

This talk aims to provide both a conceptual overview and technical insights into the evolving landscape of model-based image processing, showcasing the relevance and adaptability of variational models in modern imaging challenges.

Keywords: Variational model, TGV, Shannon interpolation, Infimal onvolution, Parameter learning

Model-Based versus Data-Driven Models in Image Processing

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ABSTRACT

Image processing has witnessed significant advancements through both model-based and data-driven approaches. Model-based methods rely on predefined mathematical formulations and domain-specific knowledge to interpret and manipulate images, offering interpretability and robustness in controlled scenarios. In contrast, data-driven models, especially those powered by machine learning and deep learning techniques, leverage large datasets to automatically learn complex features and representations, often achieving superior performance in diverse and challenging environments. This paper provides a comparative analysis of these two paradigms, discussing their underlying principles, strengths, limitations, and typical applications. The study highlights how hybrid approaches can combine the advantages of both methods, paving the way for more efficient and adaptable image processing solutions.

Keywords: Image processing, Model-based methods, Data-driven models, Machine learning, Deep learning, Mathematical modeling

PROPERTIES OF THE LATTICES OF CONTINUOUS FUNCTIONS

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ABSTRACT

This study concerus with to the order continuity of lattice homomorphisms and the regularity of sublattices. It is firstly deal with the characterization of projection bands, order ideal and principle ideal. The subobjects of this type corresponding to the decomposition of vector lattices into direct sums are investigated in this field.

Keywords : Sublattice ,lattice homomorphisms, vector lattices, projection bands.

KB SPACES AND KB-OPERATORS

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ABSTRACT

This study aims to unify and expand recent developments in operator theory on Banach lattices by re-evaluating the notion of KB-operators within a broader framework. While KB and weak KB-operators are defined as those that yield norm or weak convergence for every positive, increasing, norm-bounded sequence, demi KB-operators extend this condition by requiring convergence under weaker assumptions. In this sense, demi KB-operators serve as a natural generalization of KB-operators. The study investigates the theoretical relationships between demi KB-operators and other operator classes such as b-weakly demicompact and demi Dunford-Pettis operators. It also examines structural distinctions, including the lack of norm-closure, the failure of closure under addition, and the non-invariance under duality. The findings provide a flexible and comprehensive approach to analyzing operator behavior and contribute to a deeper understanding of compactness-related structures in Banach lattices.

Keywords : Banach lattice, demi KB-operator, KB-operator, Dunford-Pettis operators

DOĞRUSAL OLMAYAN KESİRLİ DİFERANSİYEL DENKLEMİN SINIR DEĞER PROBLEMİ

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Kesirli türev hesabı 300 yılı aşkın bir geçmişe sahip olup matematik dünyasının en ilgi çekici konularından biridir. Kesirli türev hesabı fikrinin temeli 1695 yılına dayanmaktadır. Kesirli türev fikri ortaya çıktığından beri birçok matematikçi bu konuyla ilgilenmiştir. Uzun bir süre sadece teorik matematikçiler bu konuyla ilgilenmiş olsa da son zamanlarda uygulamalı matematikçilerin ve bilimin çeşitli dallarından bilim insanlarının çalışmalarına rastlamak mümkündür. Kesirli türev hesaplamaları üzerinde çalışan bilim insanları türevin klasik tanımı üzerinden hareket ederek onu geliştirmişlerdir. Riemann, Grünwald, Letnikov, Liouville, Caputo, Euler, Abel, Fourier, Kobel, Erdelyi, Hadamard, Riesz ve Laplace kesirli türevlere katkıda bulunan başlıca matematikçilerdir. Bu çalışmada Caputo kesirli türevinin laplace dönüşümünün genel görünümü ve doğrusal olmayan kesirli diferansiyel denklemin sınır değer problemi için önemsiz olmayan çözüm varlığı araştırılır. Bu sonuca ulaşmak için, özdeğerlerin sağladığı koşulları elde etmek için Laplace dönüşümü kullanırız.

Anahtar kelimeler: Kesirli diferansiyel denklem, Özdeğer, Laplace dönüşümü, Mittag leffler fonksiyonu

BOUNDARY VALUE PROBLEM OF A NONLINEAR FRACTIONAL DIFFERENTIAL EQUATION

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The calculus of fractional derivatives has a history spanning over 300 years and is one of the most fascinating topics in the world of mathematics. The idea of the calculus of fractional derivatives dates back to 1695. Since the concept of fractional derivatives emerged, many mathematicians have been interested in this topic. Although for a long time only theoretical mathematicians were interested in this topic, in recent years it has been possible to encounter the work of applied mathematicians and scientists from various fields of science. Scientists working on fractional derivative calculations have developed it based on the classical definition of the derivative. Riemann, Grünwald, Letnikov, Liouville, Caputo, Euler, Abel, Fourier, Kobel, Erdelyi, Hadamard, Riesz, and Laplace are the main mathematicians who have contributed to fractional derivatives. In this study, the general appearance of the Laplace transform of the Caputo fractional derivative and the existence of a non-trivial solution for the boundary value problem of a nonlinear fractional differential equation are investigated. To reach this result, we use the Laplace transform to obtain the conditions provided by the eigenvalues.

Keywords: Fractional differential equation, eigenvalue, Laplace transform, Mittag-Leffler function

COEFFICIENT ESTIMATE AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE UNIVALENT FUNCTION CLASS RELATED WITH q – DERIVATIVE

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ÖZET

Bu çalışmada, q – türevi ile ilişkili, karmaşık düzlemin açık birim diskinde tanımlanan yıldızıl ünivalent fonksiyonların yeni bir alt sınıfını tanımladık. Burada, bazı katsayı üst sınır tahminleri verdik ve bu tanımlanan sınıf için Fekete-Szegö problemini çözdük.

Anahtar Kelimeler: Yıldızıl fonksiyon, ünivalent fonksiyon, psevdo-yıldızıl fonksiyon, q – türev

ABSTRACT

In this study, we defined a new subclass of starlike univalent functions defined in the open unit disk of the complex plane, related wıth q – derivative. Here, we gave some coefficient upper bound estimates and solve Fekete-Szegö problem for this defination class.

Keywords: Starlike function, univalent function, pseudo-stalike function, q – derivative

COEFFICIENT ESTIMATE AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX UNIVALENT FUNCTION CLASS RELATED WITH q – DERIVATIVE

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ÖZET

Bu çalışmada, q – türevi ile ilişkili, karmaşık düzlemin açık birim diskinde tanımlanan konveks ünivalent fonksiyonların yeni bir alt sınıfını tanımladık. Burada, bazı katsayı üst sınır tahminleri verdik ve bu tanımlanan sınıf için Fekete-Szegö problemini çözdük.

Anahtar Kelimeler: Konveks fonksiyon, ünivalent fonksiyon, psevdo-konveks fonksiyon, q – türev

ABSTRACT

In this study, we defined a new subclass of convex univalent functions defined in the open unit disk of the complex plane, related wıth q – derivative. Here, we gave some coefficient upper bound estimates and solve Fekete-Szegö problem for this defination class.

Keywords: Convex function, univalent function, pseudo-convex function, q – derivative

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS

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ÖZET

Bu çalışmada, karmaşık düzlemin açık birim diskinde tanımlı yıldızıl bi-ünivalent fonksiyonların yeni bir alt sınıfını tanımladık ve bu fonksiyon sınıfının bazı geometrik özelliklerini inceledik. Bu tanımlanan sınıf için bazı katsayı üst sınır tahminleri verdik ve Fekete-Sezöge problemini çözdük.

Anahtar Kelimeler: Yıldızıl fonksiyon, ünivalent fonksiyon, psevdo-yıldızıl fonksiyon

ABSTRACT

In this study, we defined a new subclass of starlike bi-univalent functions defined on the open unit disk of the complex plane and examine some geometric properties this function class. For this definition class, we gave some coefficient upper bound estimates and solve Fekete-Sezöge problem.

Keywords: Starlike function, univalent function, pseudo-stalike function

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX BI-UNIVALENT FUNCTION CLASS

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ÖZET

Bu çalışmada, biz karmaşık düzlemin birim açık diskinde tanımlı konveks bi-ünivalent fonksiyonların yeni bir altsınıfını tanımladık ve bu fonksiyon sınıfının bazı geometrik özelliklerini inceledik. Bu tanımlanan sınıf için bazı katsayı üst sınır tahminleri verdik ve Fekete-Sezöge problemini çözdük.

Anahtar Kelimeler: Konveks fonksiyon, bi-ünivalent fonksiyon, psevdo-konveks fonksiyon

ABSTRACT

In this study, we defined a new subclass of convex bi-univalent functions defined on the open unit disk of the complex plane and examine some geometric properties this function class. For this definition class, we gave some coefficient upper bound estimates and solve Fekete-Sezöge problem.

Keywords: Convex function, bi-univalent function, pseudo-convex function

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE UNIVALENT FUNCTION CLASS

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ÖZET

Bu çalışmada, biz yıldızıl ve ünivalent fonksiyonların psevdo-yıldızıl altsınıfı olarak adlandırılan bir sınıfını tanımladık. Burada, biz tanımlanan bu sınıfa ait olan fonksiyonların ilk iki katsayısı için üst sınır değerlendirmeleri verdik. Tanımlanan sınıf için Fekete-Szegö problemini de çözdük.

Anahtar Kelimeler: Yıldızıl fonksiyon, ünivalent fonksiyon, psevdo-yıldızıl fonksiyon

ABSTRACT

In this study, we defined a new subclass of starlike and univalent functions, which called pseudo-starlike function class. Here, we gave bound estimates for initial two coefficient of the functions belonging to the defined class. The Fekete-Szegö problem for the defined class is also solved.

Keywords: Starlke function, univalent function, pseudo-starlie function

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX UNIVALENT FUNCTION CLASS

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ÖZET

Bu çalışmada, biz konveks ve ünivalent fonksiyonların psevdo-konveks altsınıfı olarak adlandırılan bir sınıfını tanımladık. Burada, biz bu sınıf için bazı katsayı değerlendirmesini verdik ve Fekete-Szegö problemini çözdük.

Anahtar Kelimeler: Konveks fonksiyon, ünivalent fonksiyon, psevdo-konveks fonksiyon

ABSTRACT

In this study, we defined a new subclass of convex and univalent functions, which called pseudo-convex function class. Here, we gave some coefficient estimates and solve Fekete-Szegö problem for this class.

Keywords: Convex function, univalent function, pseudo-convex function

COEFFICIENT PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS RELATED WITH $^{q}-$ DERIVATIVE

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ÖZET

Bu çalışmada, karmaşık düzlemin açık birim diskinde tanımlanan konveks bi-ünivalent fonksiyonların yeni bir alt sınıfını tanımladık. Burada, katsayılar için bazı üst sınır tahminleri verdik ve bu tanımlanan sınıf için Fekete-Szegö problemini çözdük.

Anahtar Kelimeler: Konveks fonksiyon, bi-ünivalent fonksiyon, psevdo-konveks fonksiyon, q – türev

ABSTRACT

In this study, we defined a new subclass of convex bi-univalent functions defined in the open unit disk of the complex plane. Here, we gave some coefficient upper bound estimates and solve Fekete-Szegö problem for this defination class.

Keywords: Analytic function, bi-univalent functin, pseudo-convex function, q −derivative

COEFFICIENT PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS RELATED WITH $^{q-}$ DERIVATIVE

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ÖZET

Bu çalışmada, karmaşık düzlemin açık birim diskinde tanımlanan yıldızıl konveks bi-ünivalent fonksiyonların yeni bir alt sınıfını tanımladık. Burada, bazı katsayı üst sınır tahminleri verdik ve bu tanım sınıfı için Fekete-Szegö problemini çözdük.

Anahtar Kelimeler: Yıldızıl fonksiyon, ünivalent fonksiyon, psevdo-yıldızıl fonksiyon

ABSTRACT

In this study, we defined a new subclass of starlike bi-univalent functions defined in the open unit disk of the complex plane. Here, we gave some coefficient upper bound estimates and solve Fekete-Szegö problem for this defination class.

Keywords: Analytic function, bi-univalent functin, pseudo-starlike function, $q-$derivative

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-STARLIKE BI-UNIVALENT FUNCTION CLASS OF COMPLEX ORDER

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ÖZET

Bu çalışmada, biz yıldızıl ve karmaşık mertebeden bi-ünivalent fonksiyonların q-türevle ilgili psevdo-yıldızıl sınıfını tanımladık. Burada, biz bu tanımlanan sınıfa ait olan fonksiyonların ilk iki katsayısı için üst sınır değerlendirmeleri verdik. Ayrıca, bu sınıf için Fekete-Szegö problemini de çözdük.

Anahtar Kelimeler: Yıldızıl fonksiyon, bi-ünivalent fonksiyon, psevdo-yıldızıl fonksiyon, kompleks mertebe

ABSTRACT

In this study, we defined a new class of starlike and pseudo-starlike bi-univalent functions of complex order related with q-derivative. Here, we gave bound estimates for initial two coefficients of the functions belonging to this defined function class. Moreover, we solve the Fekete-Szegö problem for this class.

Keywords: Starlie function, bi-univalent function, pseudo-starlike function, complex order

ON THE COEFFICIENT AND FEKETE-SZEGÖ PROBLEM FOR THE PSEUDO-CONVEX BI-UNIVALENT FUNCTION CLASS OF COMPLEX ORDER

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ÖZET

Bu çalışmada, biz karmaşık mertebeden bi-ünivalent fonksiyonların q-türevi ile ilgili psevdo-konveks sınıfını tanımladık. Tanımlanan bu sınıfa ait olan fonksiyonların ilk iki katsayısı için üst sınır değerlendirmeleri verdik. Ayrıca, bu sınıf için Fekete-Szegö problemini de çözdük.

Anahtar Kelimeler: Konveks fonksiyon, bi-ünivalent fonksiyon, psevdo-konveks fonksiyon, karmaşık mertebe

ABSTRACT

In this study, we defined a new class of pseudo-convex bi-univalent functions of complex order related with q-derivative. We gave bound estimates for initial two coefficients of the functions belonging to this defined function class. Moreover, we solve the Fekete-Szegö problem for this class.

Keywords: Convex function, bi-univalent function, pseudo-convex function, complex order

YEMEKLİK BAKLAGİLLERİN KARBON AYAK İZİ VE İKLİM DOSTU TARIM SİSTEMLERİNDEKİ ROLÜ

THE CARBON FOOTPRINT OF FOOD LEGUMES AND THEIR ROLE IN CLIMATE-SMART AGRICULTURAL SYSTEMS

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ÖZET

Yemeklik baklagiller, sürdürülebilir tarım ve iklim değişikliğiyle mücadelede giderek artan bir öneme sahiptir. Azot fiksasyonu yapabilme yetenekleri sayesinde toprağa ihtiyaç duyduğu azotu doğal yoldan sağlamakta, böylece sentetik gübre kullanımını azaltarak sera gazı emisyonlarının düşürülmesine katkıda bulunmaktadır. Bu özellikleri, yemeklik baklagilleri düşük karbon ayak izine sahip bitkisel protein kaynakları haline getirmektedir. Bu çalışmada, yemeklik baklagillerin karbon ayak izi ölçümünde kullanılan yaşam döngüsü analizleri ve hesaplama yöntemleri incelenmiş; tarımsal uygulamaların, toprak ve iklim koşullarının karbon ayak izi üzerindeki etkileri detaylandırılmıştır. Ayrıca, farklı baklagil türlerinin üretim süreçlerine bağlı olarak ortaya çıkan çevresel etkiler değerlendirilmiştir. İklim dostu tarım sistemlerinde baklagiller, toprak sağlığının korunması, azot döngüsünün desteklenmesi ve karbon depolama kapasitesinin artırılması açısından kritik rol oynamaktadır. Üretim tekniklerindeki iyileştirmeler, gübre ve sulama yönetimiyle karbon salınımının minimize edilmesi mümkün olmaktadır. Sonuç olarak, yemeklik baklagillerin hem beslenme güvenliği hem de çevresel sürdürülebilirlik açısından önemi büyüktür. Bu nedenle, tarımsal politikalarda ve üretim sistemlerinde bu ürünlerin daha yaygın ve verimli kullanımı, iklim değişikliğinin olumsuz etkilerinin azaltılmasına önemli katkılar sağlayacaktır.

Anahtar Kelimeler: Yemeklik baklagiller, Karbon ayak izi, İklim dostu tarım, Azot fiksasyonu

ABSTRACT

Leguminous crops play an increasingly vital role in sustainable agriculture and climate change mitigation. Their ability to fix atmospheric nitrogen biologically reduces the need for synthetic fertilizers, thereby contributing to lower greenhouse gas emissions. These characteristics position legumes as plant-based protein sources with a comparatively low carbon footprint. This study examines the methodologies used to assess the carbon footprint of food legumes, focusing on life cycle assessment approaches and calculation techniques. The impacts of agricultural practices, soil conditions, and climate on carbon emissions are analyzed in detail. Additionally, the environmental effects associated with the production of various legume species are evaluated. Within climate-smart agricultural systems, legumes are crucial for maintaining soil health, supporting nitrogen cycling, and enhancing carbon sequestration capacity. Improvements in production methods, alongside optimized fertilizer and irrigation management, can effectively minimize carbon emissions. Consequently, food legumes are of significant importance for both nutritional security and environmental sustainability. Therefore, the broader and more efficient integration of these crops into agricultural policies and production systems is essential to advance efforts to mitigate the adverse effects of climate change.

Keywords: Food legumes, Carbon footprint, Climate-smart agriculture, Nitrogen fixation

SUSTAINABILITY IN AQUACULTURE

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ABSTRACT

Sustainability in aquaculture aims to protect the natural stocks of aquatic organisms such as fish, crustaceans and mollusks obtained from marine and inland water resources, and to ensure that future generations can benefit from these resources without harming the ecosystem. Overfishing and stock management, overfishing is one of the main problems that leads to the depletion of aquatic product stocks. Sustainable fishing includes practices such as determining the amount of catch based on scientific data and protecting species during their breeding periods. Aquaculture, the cultivation of fish and other aquatic products under controlled conditions, reduces the pressure on natural stocks. However, controlling the environmental effects of this method (waste, disease, genetic pollution) is also important in terms of sustainability. Ecosystem approach, sustainable aquaculture management considers the balance of not only the target species but also the entire ecosystem. The protection of marine habitats, not destroying the seabed and maintaining biodiversity are taken as basis. Consumer awareness and certification, Sustainability certificates offer consumers the opportunity to choose environmentally friendly products. Conscious consumption habits encourage sustainable hunting. As a result, sustainability in aquaculture; long-term health of the seas and freshwater resources is vital for food security and economic development. The protection of these resources is possible with scientific management, environmental sensitivity and social awareness.

Keywords: Aquaculture, ecosystem, hunting, stock management.

ALGAE and SUSTAINABILITY

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ABSTRACT

Algae are aquatic microorganisms that can photosynthesize and have great potential in terms of sustainability. Commonly found in both freshwater and marine environments, algae play an important role in many areas such as environmentally friendly energy production, wastewater treatment, reduction of carbon emissions and protection of biodiversity. Biofuels obtained from algae (e.g. biodiesel) offer a clean and renewable energy source as an alternative to fossil fuels. Moreover, algae have the capacity to produce oil with high efficiency and can be produced without the need for agricultural land. Algae contribute to the reduction of carbon footprint by absorbing CO_2 in the atmosphere through photosynthesis. With these features, they are considered an effective tool in the fight against climate change. Algae help clean water by naturally absorbing pollutants such as nitrate and phosphate in wastewater. This method is a more environmentally friendly and sustainable alternative compared to chemical treatment. Since algae are rich in protein, vitamins and minerals, they are used in both human nutrition and animal feed. In addition, some types of algae can also be used as biofertilizers.

As a result, algae stand out as an important resource in achieving sustainable development goals thanks to their environmentally friendly, economical and renewable properties. They are expected to be used more widely in the future thanks to their contributions in the fields of energy, environment and food.

Keywords: Algae, wastewater, biofuel, nutrition.

THE EFFECT OF CYSTEINE ON MORPHOLOGY AND PIGMENT CONCENTRATION in SORGHUM VARIETY (*Sorghum bicolor* L. 'Gözde') UNDER BORON TOXICITY

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ABSTRACT

Boron (B) is an essential element that affects plant growth and development at low concentrations, but is toxic at high concentrations. High concentrations of B in the soil negatively affect many physiological processes in plants, such as photosynthesis, water status, stomatal conductance, and membrane integrity. Cysteine (Cys) is a sulphur-containing amino acid and a natural antioxidant. The aim of this study is to investigate the role of Cys, which may act as a protective agent against B toxicity, on growth parameters, relative water content, chlorophyll, and carotenoid levels. In this context, Cys (1 mM) was applied foliar to sorghum (*Sorghum bicolor* L. cv. "Gözde", Fam: Poaceae) plants for 3 days, followed by a 2 mM H_3BO_3 application for B toxicity. The application was continued for 7 days, and at the end of the period, the fresh and dry weights of the leaves, water status, chlorophyll a, chlorophyll b, total chlorophyll, and total carotenoid contents were determined using standard analytical methods. In all measured parameters, high B concentrations caused inhibition in sorghum seedlings, while exogenous Cys application mitigated the adverse effects of B toxicity. In conclusion, exogenous Cys application plays an important role in enhancing the plant's tolerance to B toxicity in the *Sorghum bicolor* variety.

Keywords: Boron toxicity, sorghum, cysteine, photosynthetic pigment

BOR TOKSİSİTESİ ALTINDAKİ SORGUM ÇEŞİDİNDE (*Sorghum bicolor* L. 'Gözde') SİSTEİNİN MORFOLOJİ VE PİGMENT KONSANTRASYONU ÜZERİNDEKİ ETKİSİ

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ÖZET

Bor (B) düşük konsantrasyonlarda bitki büyüme ve gelişmesi üzerinde etkili olan mutlak gerekli bir element iken yüksek konsantrasyonlarda toksik etki gösterir. Toprakta yüksek konsantrasyonda bulunan B bitkide fotosentez, su durumu, stoma iletkenliği ve membran bütünlüğünün sağlanması gibi pek çok fizyolojik süreci olumsuz etkiler. Sistein (Cys) kükürt içeren bir amino asit olup doğal bir antioksidandır. Bu çalışmanın amacı, B toksisitesine karşı olası bir koruyucu görev üstlenebilecek Cys'in büyüme parametreleri, nisbi su içeriği, klorofil ve karotenoid miktarları üzerine olan rolünü araştırmaktır. Bu kapsamda, sorgum (*Sorghum bicolor* L. cv. 'Gözde', Fam: Poaceae) bitkisine Cys (1 mM) 3 gün boyunca foliar olarak uygulanmış ve ardından B toksisitesi için 2 mM H_3BO_3 uygulaması yapılmıştır. Uygulama 7 gün boyunca devam ettirildi ve süre sonunda yaprakların yaş ve kuru ağırlıkları, su durumu, klorofil a, klorofil b, toplam klorofil ve toplam karotenoid içerikleri standart analiz yöntemleri kullanılarak belirlendi. Tüm ölçülen parametrelerde B'un yüksek konsantrasyonu sorgum fidelerinde inhibisyona neden olurken dıştan Cys uygulaması B toksisitesinde olumsuz etkileri hafifletmiştir. Sonuç olarak, ekzojenik Cys uygulaması, *Sorghum bicolor* çeşidinde B toksisitesine karşı bitkinin toleransını artırmada önemli bir rol oynamaktadır.

Anahtar Kelimeler: Bor toksisitesi, sorgum, sistein, fotosentetik pigment

DNA BARCODING AND GENETIC STRUCTURE OF *Dryomys laniger* FROM TÜRKİYE

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ABSTRACT

Dryomys laniger, commonly known as the woolly dormouse, is a rodent species endemic to Türkiye, with a fragmented distribution from the western Taurus Mountains to Eastern Anatolia. Mitochondrial DNA analyses, particularly of the cytochrome *b* gene, have led to the recognition of western populations as *D. laniger* (Antalya to Niğde) and eastern populations (Kahramanmaraş to Tunceli) as a newly described species, *D. anatolicus* sp. novum. Given the species' limited distribution and lack of ecological data, *D. laniger* is currently classified as Data Deficient by the IUCN. To assess genetic variation and inform conservation strategies, partial sequences of the cytochrome *c* oxidase subunit I (*COI*) gene were analyzed from 21 individuals. A total of eight haplotypes were identified, clustering into two distinct genetic lineages: five in the west and three in the east. High overall haplotype (Hd = 0.819) and nucleotide diversity ($\pi = 0.03894$) were observed, though genetic diversity within each lineage was lower. Mismatch distribution analysis revealed a multimodal pattern, and a high raggedness

index (r = 0.1271) suggested long-term demographic stability or historical divergence. Strong genetic differentiation (FST = 0.92892), low gene flow (Nm = 0.04), and a substantial genetic distance (K2P = 0.0816) between lineages further supported this divergence. These findings indicated that *D. laniger* comprises two historically isolated genetic groups with limited interbreeding, reflecting either deep intraspecific structuring or cryptic speciation. The results provided genetic evidence supporting the recognition of *D. anatolicus* sp. novum and highlighted the need for lineage-specific conservation efforts.

Keywords: *Dryomys laniger*, genetic structure, DNA barcoding, Türkiye

TOST PEYNİRİ VE ERİTME TUZU KULLANIMI

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ÖZET

Türkiye'de en çok üretilen peynir çeşitlerinden biri olan Kaşar peyniri, zengin bileşimi ve sevilen lezzeti ile sofralarda yerini almaktadır. Kaşar peyniri geleneksel olarak tuzlu suda haşlanarak üretilen yarı sert bir peynir çeşididir. Günümüzde eritme tuzları ilave ederek kuru haşlama tekniğiyle Kaşar benzeri peynirler üretilmektedir. Bu çeşit üretilen peynirler eritme peynir grubunda yer almakta olup Tost peyniri olarak anılmaktadır. Eritme peyniri TGK de telemenin, bir veya bir kaç çeşit peynirin, doğrudan doğruya veya bu ürünlere gerektiğinde süt tozu, peyniraltı suyu tozu, tereyağı, krema gibi süt ürünleri katılarak elde edilen karışıma emülsifiye edici tuzlar ilave edilerek, karışımın pastörizasyon normunda veya daha yüksek sıcaklıklarda ve sürelerde ısıl işlem uygulanması ile elde edilen, dilimlenebilir veya sürülebilir nitelikler gibi çeşidine özgü karakteristik özellikler gösteren peynir olarak tanımlanmıştır. Tebliğ kapsamında yer alan ürünlerin etiketinde peynirin piyasaya sunulduğu biçimine, üretim tekniğine, şekline ve kullanım amacına göre “tost peyniri”, “süzme/ultrafiltrasyon”, “üçgen” gibi ibareler kullanılabilir. Günümüzde, sürülebilir, kesilebilir ve blok tip eritme peyniri üretiminde otuzun üzerinde farklı eritme tuzu kullanılmaktadır. Bu tuzların her birinin protein çözme yeteneği, kremleştirme gücü, pH değeri ve tamponlama kapasitesi farklıdır. Kullanılacak eritme tuzunun cins ve miktarı, hammaddenin tazelik durumuna, pH değerine, bileşimine ve ayrıca elde edilecek ürünün tipine göre belirlenmektedir. Tost peyniri üretimi yapılırken bazı işletmeler %15-20 oranında iade ürünler ilave etmektedir. Bu makalede ülkemizde yaygın olarak üretilen tost peyniri üretim tekniği, bu konuda yapılan araştırmalar ve kullanılan eritme tuzları ile ilgili bilgiler verilmiştir.

Anahtar Kelimeler: Eritme Peyniri, Eritme Tuzu ve Tost Peyniri.

TOAST CHEESE AND USING MELTING SALT

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ABSTRACT

Kashar cheese, one of the most produced cheese types in Türkiye, takes its place on the tables with its rich composition and popular taste. Kashar cheese is a semi-hard cheese traditionally produced by boiling in salt water. Nowadays, cheeses similar to Kashar are produced by dry boiling technique with the addition of melting salts. This type of cheese is in the processed cheese group and is called Tost cheese. Processed cheese is defined in the Tukish Food Codex as cheese that has characteristic features specific to its type, such as sliceability or spreadability, obtained by heat treatment of the mixture obtained by adding emulsifying salts to the mixture obtained by adding curd, one or several types of cheese, directly or by adding dairy products such as milk powder, whey powder, butter, cream to these products when necessary, at pasteurization norm or at higher temperatures and times. Phrases such as “toast cheese”, “filtered/ultrafiltration”, “triangle” may be used on the labels of products within the scope of the Communiqué, depending on the form in which the cheese is presented to the market, its production technique, shape and intended use. Today, over thirty different melting salts are used in the production of spreadable, cuttable and block type processed cheese. Each of these salts has different protein solubilizing ability, creaming power, pH value and buffering capacity. The type and amount of melting salt to be used is determined according to the freshness of the raw material, its pH value, its composition, and also the type of product to be obtained. While producing toast cheese, some businesses add 15-20% of returned products. In this article, information is given about the production technique of toast cheese, which is widely produced in our country, the research done on this subject and the melting salts used.

Anahtar Kelimeler: Processed Cheese, Melting Salt and Toast Cheese.

LAKTASYON SÜRESİ BOYUNCA KEÇİ SÜTÜNÜN KALİTE ÖZELLİKLERİ

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ÖZET

Bu araştırmada, Saanen ırkı keçi sütlerinin laktasyon süresince süt bileşenleri, enerji değeri ile özgül ağırlık, donma noktası ve iletkenlik gibi bazı kalite özellikleri incelenmiştir. Araştırma, mayıs ve eylül ayları arasındaki beş aylık laktasyon süresince süt verilerinin 21 haftalık değişimini kapsamaktadır. Elde edilen veriler, laktasyon süresine bağlı olarak bileşenlerin değişimini göstermektedir. İncelenen keçi sütlerinde pH 6.65-6.92, yağsız kurumadde %8.8-%10.6, yağ %3.1-%5.7 arasında değişim göstermiş ve özellikle laktasyon sonlarında daha yüksek olduğu belirlenmiştir. Protein %3.2-%3.8, laktoz %4.8-%5.8 ve kül %0.7-%0.8 arasında değerler almıştır. Keçi sütlerinin enerji değeri 259-376 kj/100g arasında bulunmuştur. Laktasyon süresi boyunca özgül ağırlık 1.030 g/cm³-1.035 g/cm³, donma noktası -0.565°C ve -0.710°C arasında, iletkenlik 4.3 ms/cm ile 5.3 ms/cm arasında değişmiştir. Bu araştırmada, Saanen keçi ırkı sütünün laktasyon süresinin kalite özellikleri üzerinde etkili olduğu belirlenmiştir.

Anahtar Kelimeler: Keçi Sütü, Saanen, Laktasyon Süresi, Kalite Özellikleri.

QUALITY CHARACTERISTICS OF GOAT MILK DURING LACTATION

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ABSTRACT

In this study, milk components, energy value and some quality properties such as specific gravity, freezing point and conductivity of Saanen goat milk during lactation were investigated. The research covers the weekly changes in milk data during the five-month lactation (21 weeks) period between May and September. The data obtained show the changes in the components depending on the duration of lactation. In the examined goat milks, pH 6.65-6.92, fat free dry matter varied between 8.8%-10.6%, fat varied between 3.1%-5.7% and was determined to be higher especially at the end of lactation. Protein values were between 3.2%-3.8%, lactose 4.8%-5.8% and ash, 0.7%-0.8%.The energy value of goat milk was found to be between 259 -376 kJ/100g. During the lactation period, specific gravity varied between 1.030 g/cm³-1.035 g/cm³, freezing point -0.565°C and -0.710°C, conductivity varied between 4.3 ms/cm and 5.3 ms/cm. In this study, it was determined that the lactation period of Saanen goat breed milk had an effect on the quality properties.

Anahtar Kelimeler: Goat Milk, Saanen, Lactation Time, Quality Properties.

TRABZON'DA COĞRAFİ İŞARET TESCİLİNE ADAY BİR ÜRÜN "MISIR UNU HELVALI BAKLAVA"

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ÖZET

Coğrafi işaret ile tescil, bir yöredeki mutfak kültürünün gelecek nesillere bozulmadan aktarılması ve yöre halkının gastronomi turizminden ekonomik pay alması bakımından önem arz etmektedir. Trabzon, Türkiye'de mutfak kültürü bakımından önemli bir çeşitliliğe sahip olan fakat bunu fazla tanıtamamış olan illerden bir tanesidir. Günümüzde gastronomi alanında coğrafi işaret ile tescillenmiş 10 adet ürünü bulunan Trabzon'un tescil başvuru sürecinde de olan 3 adet ürünü bulunmaktadır. Coğrafi işaret tescili alınmamış yerel gastronomik unsurlardan bir tanesi de mısır unu helvalı baklavadır. Türkiye'de 13 adet tescilli baklava çeşidi bulunmaktadır. Çalışmamızda uzun yıllardır Trabzon'un Dernekpazarı ilçesi ve çevre ilçelerinde sıklıkla yapılan mısır unu helvalı baklavanın coğrafi işaret alma durumu incelenmiştir. Bu amaçla 2025 yılı Mayıs ayında Trabzon'un Dernekpazarı, Of, Çaykara, Köprübaşı ve Hayrat ilçelerinde 12 kişinin katılımıyla bir çalışma gerçekleştirilmiştir. Nitel araştırma yöntemlerinden derinlemesine mülakat tekniği kullanılarak gerçekleştirilen çalışmada katılımcılardan ürünün tarifi, kimlerden öğrendikleri, hangi amaçla yapıldığı gibi bilgiler öğrenilmiştir. Mısır ununun helva yapılması, ardından yufkaların arasına yerleştirilerek pişirilmesi ve sonrasında ise şerbetlenmesi ile elde edilen bu baklava, özellikle dini bayram, düğün, kız isteme, gerilik gibi geçiş dönemlerinde üretilmektedir. Bazı ilçelerde "damat baklavası" adı da verilen mısır unu helvalı baklavanın coğrafi işaret ile tescillenmesi, bu ürünün tanıtılmasına, şehirde gastronomi turizmi için alternatif oluşturulmasına ve halkın ekonomik anlamda katkı sağlamasına faydalı olacağı düşünülmektedir.

Anahtar Kelimeler: Mısır unu helvalı baklava, coğrafi işaret, Trabzon

A CANDIDATE PRODUCT FOR GEOGRAPHICAL INDICATION REGISTRATION IN TRABZON 'BAKLAVA WITH CORN FLOUR HALVA'

ABSTRACT

Registration with a geographical indication is important in terms of transferring the culinary culture of a region to future generations intact and the local people getting an economic share from gastronomy tourism. Trabzon is one of the provinces in Turkey which has an important diversity in terms of culinary culture but has not been able to promote it much. Today, Trabzon, which has 10 products registered with geographical indication in the field of gastronomy, has 3 products in the registration application process. One of the local gastronomic elements that has not been registered with geographical indication is baklava with cornflour halva. There are 13 registered baklava varieties in Turkey. In our study, the geographical indication status of baklava with corn flour halva, which has been frequently made in Dernekpazarı district and surrounding districts of Trabzon for many years, was examined. For this purpose, a study was carried out with the participation of 12 people in Dernekpazarı, Of, Çaykara, Köprübaşı and Hayrat districts of Trabzon in May 2025. In the study, which was carried out using in-depth interview technique, one of the qualitative research methods, information such as the description of the product, from whom they learnt it, and for what purpose it was made was learned from the participants. This baklava, which is obtained by making halva from corn flour, then placing it between phyllo pastry, baking it and then syruping it, is produced especially during transitional periods such as religious holidays, weddings, and other special days. It is thought that the registration of baklava with corn flour halva, which is also called 'groom's baklava' in some districts, with a geographical indication will be beneficial for the promotion of this product, creating an alternative for gastronomy tourism in the city and contributing economically to the people.

Keywords: Corn flour halva baklava, Geographical indication, Trabzon

GEÇMİŞTEN GÜNÜMÜZE TRABZON MUTFAK KÜLTÜRÜNDE REÇELİN YERİ

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ÖZET

Trabzon, zengin mutfak kültürü ile Karadeniz'in önemli gastronomi merkezlerinden biridir. Karadeniz'in kendine özgü doğası ve iklimi, Trabzon'un mutfak kültürünü şekillendiren temel unsurların başında gelir. Yörede yetişen meyveler ve bu meyvelerden yapılan birçok ürün bu zenginliğe katkı sağlamaktadır. Meyvelerin ham olarak tüketilmesi ile birlikte meyvelerin işlenmesi ile elde edilen reçel, marmelat, pekmez gibi ürünler aslında bu çeşitliliğin her mevsim ulaşılabilmesine olanak sağlamaktadır. Yani reçel üretimi aslında gastronomik bir unsur olmanın yanında ürünlerin dönüştürülmesiyle oluşan geleneksel bir muhafaza biçimidir. Özellikle reçeller, sadece kahvaltılık bir tatlı değil; mevsimsel üretimin, geleneksel saklama yöntemlerinin ve aile içi üretim alışkanlıklarının da bir sembolüdür. Trabzon'un zengin biyolojik çeşitliliği, reçel yapımında kullanılan meyvelerin de çeşitlenmesini sağlamıştır. Bu nedenle Trabzon'da alışıla gelmiş çilek, incir, ayva, kızılcık, kuşburnu gibi reçellerin dışında yabani meyvelerden yapılan ligarba (yaban mersini), hanifta (dağ çileği, yabani çilek), fuska (yabani böğürtlen) ve ayyemiş gibi meyvelerden de reçeller yapılmaktadır. Bu çalışmada da, Trabzon'da reçel kültürünün tarihsel gelişimi, kullanılan hammaddeler, yapım teknikleri ve günümüzdeki yeri incelenecektir. Bu sayede geçmişte sadece evlerde üretilen reçellerin bilinilirliğinin arttırılarak günümüzde yerel turizm, gastronomi festivalleri ve butik üreticiler aracılığıyla geniş kitlelere ulaşmasına katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: Gastronomi turizmi, gıda muhafaza, yöresel reçeller.

JAMS IN TRABZON CULINARY CULTURE FROM PAST TO PRESENT

ABSTRACT

Trabzon is one of the important gastronomic centres of the Black Sea with its rich culinary culture. The unique nature and climate of the Black Sea is one of the main factors shaping Trabzon's culinary culture. Fruits grown in the region and many products made from these fruits contribute to this richness. In addition to the raw consumption of fruits, products such as jam, marmalade, molasses obtained by processing fruits actually allow this diversity to be accessible in all seasons. In other words, jam production is actually a traditional form of preservation formed by the transformation of products as well as being a gastronomic element. Especially jams are not only a dessert for breakfast; they are also a symbol of seasonal production, traditional storage methods and family production habits. Trabzon's rich biological diversity has led to the diversification of the fruits used in jam making. For this reason, jams are made from fruits such as ligarba (blueberry), hanifta (mountain strawberry, wild strawberry), fuska (wild blackberry) and ayyemiş, which are made from wild fruits, in addition to the usual jams such as strawberry, fig, quince, cranberry and rosehip in Trabzon. In this study, the historical development of jam culture in Trabzon, the raw materials used, production techniques and its current place will be analysed. In this way, it is thought that by increasing the awareness of jams, which were produced only in homes in the past, it will contribute to reaching large masses through local tourism, gastronomy festivals and boutique producers.

Keywords: Gastronomy tourism, food preservation, local jams.

KAHRAMANMARAŞ'TA MARKETLERDE SATILAN MEYVE SULARINDA RADON GAZI ÖLÇÜMÜ

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ÖZET

Bilindiği üzere, radon gazı (^{222}Rn) akciğer kanserinin ön önemli sebepleri arasında yer aldığı Dünya Sağlık Örgütü ve başka bir çok organizasyonlar tarafından ilan edilmektedir. Söz konusu radon gazı, uranyum (^{238}U) serisinin bir bozunum ürünü olup özellikle radonun katı haledeki bozunumlarının akciğerlerde birikmesi ve burada radyoaktif ışımalar yapmasıyla akciğerlere hasar vermekte uzun vadede kanser olasılığını artırmaktadır. Bu çalışmada, Kahramanmaraş'ta marketlerde satılmakta olan paketlenmiş meyve sularındaki radon gazı aktiviteleri belirlenmiştir. Paketlenmiş meyve sularının tüketim oranı Türkiye'de kişi başı 8 ila 12 litre arasında tahmin edilmekte ve ürün çeşitliği arttıkça tüketim oranı da her geçen yıl artmaktadır. Çeşitli markalarda toplam 30 adet paketlenmiş meyve suyu Kahramanmaraş'ta marketlerden satın alınarak laboratuvar ortamına hızlıca getirilmiştir. Örneklerin radon analizi Durridge Rad7 radon dedektörü kullanılarak yapılmıştır. Dedektörün kalibrasyonu üretici firma tarafından gerçekleştirilmiştir. Dedektör ile meyve sularındaki radon aktivite miktarını belirlemek için RAD H2O aksesuarı ve WAT 40 protokolü kullanılarak ölçüm işlemleri gerçekleştirilmiştir. Paketlenmiş meyve suları örneklerinde radon aktivite konsantrasyonlarının, ortalama değeri 18,44±1,46 mBq/L 'dir. Radon aktivite konsantrasyonları, 10,20 ± 1,10 mBq/L ile 25,50 ± 1,80 mBq/L aralığında değişmektedir. Bu değerler, Amerika Birleşik Devletleri Çevre Koruma Ajansı (USEPA) tarafından hazırlanan yönetmelikte ve Avrupa Komisyonu (EU) tarafından hazırlanan direktifte içme suları için ^{222}Rn aktivite konsantrasyonu sınır değeri olarak belirlenen 11,1 Bq/L ve 100 Bq/L'in çok altındadır.

Anahtar Kelimeler : Radon, Meyve Suları, Radyasyon, Akciğer Kanseri

METANOL (SAHTE İÇKİ) İNTOKSİKASYONUNA BAĞLI ÖLÜMLER: DOĞU KARADENİZ BÖLGESİNDEN RETROSPEKTİF BİR OTOPSİ ANALİZİ

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ÖZET

Metanol intoksikasyonu, genellikle sahte içki, kolonya veya endüstriyel çözücülerin oral yolla alınması sonucu gelişen, ölümcül seyredebilen ciddi bir zehirlenme durumudur. Metabolizma sonucu ortaya çıkan formik asit ve formaldehit, özellikle optik sinir ve santral sinir sistemi üzerinde toksik etki göstererek körlük ve koma gibi komplikasyonlara yol açabilir. Erken tanı ve antidot tedavisi (etanol veya fomepizol) hayati öneme sahip olup, gecikmiş müdahale çoğunlukla ölümle sonuçlanır.

Bu çalışmanın amacı, Doğu Karadeniz Bölgesi'ndeki son beş yıl içerisinde gerçekleşen ve doğrudan metanol intoksikasyonuna bağlı olduğu belirlenen ölüm vakalarını adli tıp verileri ışığında değerlendirmektir. 2020–2024 yılları arasında adli otopsisi yapılan 18 erkek olgu retrospektif olarak incelenmiştir. Olguların yaş ortalaması yaklaşık 54 olup; en genç birey 29, en yaşlı birey 71 yaşındadır. İçilen maddeler arasında içki (%49) ve kolonya (%16) öne çıkarken, %33,3 olguda tüketilen madde belirlenememiştir. En sık ölüm mevsimi ilkbahar olarak kaydedilmiştir. Kan metanol düzeyi, 18 olgunun 9'unda tespit edilmiş olup, ortalama düzey 182 mg/dL olarak saptanmıştır. Göz içi sıvısı metanol düzeyi ise bazı olgularda 523 mg/dL'ye kadar çıkmıştır. Olguların tamamında ölüm nedeni metanol toksisitesi ile uyumludur. 5 olguda ETG-ETS ve uyuşturucu gibi ek maddeler tespit edilmiştir. Olguların çoğunluğu (%67,8) alkol kullanıcısı olarak tanımlanmış olup, 10 olguda yalnız başına içme öyküsü mevcuttur. Klinik ön tanılar arasında "metanol intoksikasyonu" en sık bildirilen tanıdır.

Bulgular, metanol zehirlenmelerinin özellikle alkol yerine kullanılan sahte ürünlerin tüketimi sonucu ortaya çıktığını ve ölümcül sonuçlara yol açtığını göstermektedir. Olguların çoğunda toksik maddeye maruziyet bilinçli veya alışkanlık düzeyinde gerçekleşmiştir. Bu durum, toplumu sahte ve riskli ürünler konusunda bilinçlendirme çalışmalarının artırılmasının önemini ortaya koymaktadır.

Anahtar Kelimeler: Metanol intoksikasyonu, metanol, sahte içki, toksikoloji, otopsi

DEATHS DUE TO METHANOL (COUNTERFEİT ALCOHOL) INTOXİCATİON: A RETROSPECTİVE AUTOPSY-BASED ANALYSİS FROM EASTERN BLACK SEA REGİON

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ABSTRACT

Methanol intoxication is a serious and fatal poisoning condition that usually develops as a result of oral ingestion of counterfeit liquor, cologne or industrial solvents. Formic acid and formaldehyde resulting from metabolism may have a toxic effect especially on the optic nerve and central nervous system and may lead to complications such as blindness and coma. Early diagnosis and antidote treatment (ethanol or fomepizole) are vital, and delayed intervention often results in death. The aim of this study was to evaluate the cases of death due to methanol intoxication in the light of forensic medicine data. Eighteen male cases who underwent forensic autopsy between 2020 and 2024 were retrospectively analyzed. The mean age of the cases was approximately 54 years; the youngest individual was 29 years old and the oldest individual was 71 years old. While alcohol (49%) and cologne (16%) were the most common substances consumed, the substance consumed could not be determined in 33.3% of the cases. The most common season of death was spring. Blood methanol level was detected in 9 of 18 cases and the mean level was 182 mg/dL. Intraocular fluid methanol level was as high as 523 mg/dL in some cases. The cause of death in all cases was consistent with methanol toxicity. In 5 cases, additional substances such as ETG-ETS and drugs were detected. The majority of the cases (67.8%) were identified as alcohol users and 10 cases had a history of drinking alone. Among the clinical prediagnoses, “methanol intoxication” was the most frequently reported diagnosis.

The findings show that methanol poisoning is a fatal consequence of the consumption of counterfeit alcohol substitutes. In most of the cases, exposure to the toxic substance was conscious or habitual. This situation reveals the importance of increasing the awareness of the society about counterfeit and risky products.

Keywords: Methanol intoxication, methanol, counterfeit liquor, toxicology, autopsy

ETANOL İNTOKSİKASYONUNA BAĞLI DOĞRUDAN ÖLÜMLER: RETROSPEKTİF BİR OTOPSİ DEĞERLENDİRMESİ

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ÖZET

Bu çalışmanın amacı, 2014–2024 yılları arasında Doğu Karadeniz Bölgesi'nde herhangi bir travmatik ya da farmakolojik kolaylaştırıcı faktör olmaksızın yalnızca etanol intoksikasyonuna bağlı olarak meydana gelen ölümleri retrospektif olarak değerlendirmektir. Çalışmada etkilenen demografik gruplar, toksikolojik düzeyler ve adli bulguların tamamlanması hedeflenmiştir. Doğu Karadeniz Bölgesi'ndeki adli tıp arşivlerinden elde edilen verilere dayanarak, yalnızca etanol toksisitesi sonucu öldüğü belirlenen 8 otopsi olgusu çalışmaya dahil edilmiştir. Yaş, cinsiyet, ölüm zamanı, alkol bağımlılığı öyküsü, tüketilen içki türü, toksikolojik düzeyler (kan, göz içi sıvısı, idrar), ölüm yeri, travma bulguları, eşlik eden madde kullanımı ve sosyo-çevresel veriler retrospektif olarak analiz edilmiştir.
Olguların 7'si erkek, 1'i kadındır ve yaş ortalaması 55,0 ± 9,1 yıldır. En sık ölüm yeri ev ortamı olup (n=5), travmaya yalnızca bir olguda düşme sonucu rastlanmıştır. Terapötik veya yasa dışı madde kullanımına dair herhangi bir bulgu saptanmamıştır. Kan etanol düzeyleri 266 ile 617 mg/dL arasında değişmekte olup, ortalama 442,2 ± 129,5 mg/dL olarak belirlenmiştir. Üç olguda göz içi sıvısı etanol düzeyleri 323–517 mg/dL aralığındadır. Üç olguda alkol bağımlılığı öyküsü mevcuttur.
Doğu Karadeniz Bölgesi'nde son on yılda tespit edilen bu sınırlı sayıdaki olgu, yüksek düzeyde etanol alımının tek başına ölümcül olabileceğini göstermektedir. Postmortem göz içi sıvısı etanol düzeyleri tanı sürecinde değerli destek sağlamaktadır. Alkol bağımlılığı ve yalnız içim alışkanlığı, mortalite açısından önemli risk faktörleri olup, bu bulgular bölgesel düzeyde önleyici stratejilerin geliştirilmesine katkı sunabilir.

Anahtar Kelimeler: Etanol intoksikasyonu, adli otopsi, toksikoloji, alkol bağımlılığı, Doğu Karadeniz Bölgesi

DIRECT DEATHS DUE TO ETHANOL INTOXICATION: A RETROSPECTIVE AUTOPSY EVALUATION

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ABSTRACT

The aim of this study is to retrospectively evaluate deaths due to ethanol intoxication that occurred between 2014 and 2024 in the Eastern Black Sea Region, in the absence of any traumatic or pharmacological contributing factors. The study seeks to characterize the affected demographic groups, toxicological levels, and forensic findings.
Based on data obtained from forensic archives in the Eastern Black Sea Region, 8 autopsy cases determined to have died solely due to ethanol toxicity were included in the study. Demographic and forensic parameters such as age, sex, time of death, history of alcohol dependence, type of alcoholic beverage consumed, toxicological levels (blood, vitreous humor, urine), place of death, trauma findings, presence of other substances, and socio-environmental data were analyzed.
Of the cases, 7 were male and 1 was female, with a mean age of 55.0 ± 9.1 years. The most common place of death was the home environment (n=5), and trauma was observed in only one case, secondary to a fall. No evidence of therapeutic or illicit drug use was found. Blood ethanol concentrations ranged from 266 to 617 mg/dL, with a mean value of 442.2 ± 129.5 mg/dL. Vitreous humor ethanol levels in three cases ranged from 323 to 517 mg/dL. A history of alcohol dependence was present in three individuals.
These limited number of cases identified over the past decade in the Eastern Black Sea Region indicate that high-level ethanol intake alone can be fatal. Postmortem ethanol levels in vitreous humor provide valuable support in the diagnostic process. Alcohol dependence and solitary drinking habits appear to be significant risk factors for mortality, and these findings may contribute to the development of preventive strategies at the regional level.

Keywords: Ethanol intoxication, forensic autopsy, toxicology, alcohol dependence, Eastern Black Sea Regio

BİR OLGU NEDENİYLE KOLLAJENÖZ KOLİTE YAKLAŞIM
APPROACH TO COLLAGENOUS COLITIS DUE TO A CASE

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Amaç: Kronik sulu diyarenin nadir görülen bir sebebi de mikroskobik kolittir. Kollajenöz kolit mikroskobik kolitin bir subtipidir. Bir olgu nedeniyle kollajenöz kolite yaklaşımı ele almayı amaçladık.

Gereç ve Yöntem: Kronik sulu diyare nedeniyle tetkik edilen 73 yaşındaki bayan hastaya ayırıcı tanı sonucu kollajenöz kolit tanısı konulmuştur. Nadir görülen ilgi çekici olduğunu düşündüğümüz bu olgu nedeniyle kollajenöz koliti tüm yönleriyle özlü bir şekilde değerlendirmeyi amaçladık.

Bulgular: 73 yaşında kadın hasta bir yıldır devam eden günde 5-6 kez olan sulu diyare ile başvurdu. Rutin kan ve biyokimyasal tetkikler normaldi. Gaitada direkt bakı ve gaita kültürü normaldi. Amip antijeni ve c.difficile toksin A ve B negatifti. Tüm batın bilgisayarlı tomografi(BT)normaldi. Tam kolonoskopi ve üst endoskopi normaldi. Çölyak marker ları ve duodenal biyopsi normaldi. Kolondan alınan biyopsilerde çıkan kolondan alınan biyopside intraepitelyal az sayıda lenfosit ile 14 mikron çapında subepitelyal kollajen bant saptandı. Transvers kolon biyopsisinde kollajen bant kalınlığı16 mikron bulundu.(Resim1 ve 2)

Tartışma: Mikroskopik kolitin etyolojisi tam olarak bilinmemekle birlikte genetik yatkınlık olması, çevresel tetikleyicilerin varlığı, anormal immün cevap olması ve steroide iyi cevap vermesi otoimmün bir hastalık olduğunu düşündürmektedir. Kollajenöz kolit mikroskobik kolitin bir subtipidir. Klinik olarak hafif sulu diyareden dehidratasyon ve elektrolit dengesizliğine yol açabilen bir spektruma sahiptir. Diğer subtipi olan Lenfositik kolitte intraepitelyal lenfosit hakimiyeti varken kollajenöz kolitte subepitelyal kollajen bant kalınlığının artması belirleyicidir.Tam kolonoskopi genellikle normaldir. Tanı için kolondan biyopsi almak gerekir. Daha çok sağ kolondan olmak üzere 6 biyopsi alınması önerilir. İlişkili durumlar arasında romatoid artrit, hipotiroidizm ve hipertiroidizm, çölyak hastalığı ve diabetes mellitus bulunur. Proton pompa inhibitörleri, seçici serotonin geri alım inhibitörleri, nonsteroid antiinflamatuar ilaçlar, statinler, ACE inhibitörleri, ve sigara hastalığın ortaya çıkmasını kolaylaştırabilir.

Sonuç: Kronik sulu diyarenin nadir görülen bir sebebi de mikroskobik kolittir. Kollajenöz kolit mikroskobik kolitin bir subtipidir. Otoimmün bir hastalık olduğu düşünülmekte ve steroid tedaviye iyi cevap vermektedir.

Anahtar kelimeler: Mikroskopik kolit, kollajenöz kolit, kronik diyare

OLGU SUNUMU: ÇOCUK HASTADAKİ DENTİGERÖZ KİSTİN KİST DEKOMPRESYON PROTEZİYLE REHABİLİTASYONU

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ÖZET

Giriş: Odontojenik kistlerden dentigeröz kistler genellikle gömülü dişlerle ilişkili olan, çocukluk ve ergenlik döneminde sık görülen, tedavi edilmediğinde çene gelişimi ve diş sağlığı üzerinde olumsuz etkiler oluşturabilen iyi huylu gelişimsel lezyonlardır.

Amaç: Bu olgu sunumunun amacı, pediatrik hastada görülen dentigeröz kist için defekte özel olarak üretilen akrilik akers kroşeli kist dekompresyon protezinin dentigeröz kistlerin tedavisinde etkinliğinin ve kısa süreli klinik takip sonuçlarının aktarılmasıdır.

Olgu Sunumu: Recep Tayyip Erdoğan Üniversitesi Diş Hekimliği Fakültesi Pedodonti Kliniği'nden Protetik Diş Tedavisi Kliniği'ne kist kavitesinin dekompresyonu amacıyla yönlendirilen sistemik açıdan sağlıklı 11 yaşındaki erkek hasta, radyografik ve klinik olarak muayene edildi. Radyografik olarak kiste komşu dişler ve kist kavitesi izlendi; klinik olarak çekim soketi görüldü. Biyopsi sonucu incelendi ve dentigeröz kist ile uyumlu olduğu öğrenildi. Çekim soketinin ölçüsü alınarak marsüpyalize edilen kistin dekompresyonunu sağlamak ve yer tutucu olarak kullanılması amacıyla kist kavitesine doğrudan uzanan özel olarak tasarlanmış kist dekompresyon protezi hazırlandı. Hazırlanan kist dekompresyon protezi hastaya teslim edildi ve hasta kontrol randevusuna çağrıldı. Hastanın kist dekompresyon protezinin 12 aylık kullanımı sonrasında klinik ve radyografik olarak iyileşme gözlendi.

Sonuç: Özel yapım akrilik kist dekompresyon protezi kullanılarak marsüpyalizasyon ve dekompresyon, kistik odontojenik lezyonların tam olarak çözülmesini sağlayabilen etkili bir tedavi yöntemidir. Bu tedavi sayesinde hastalarda önemli anatomik yapılar korunurken, enükleasyonla ilişkili morbidite veya kist tekrarı riski azaltılır. Çenedeki kistik odontojenik lezyonların tedavisinde konservatif bir yaklaşım olarak bu basitleştirilmiş teknik değerlendirilebilir.

Anahtar Kelimeler: Dentigeröz Kist, Marsüpyalizasyon, Kist Dekompresyon Protezi

CASE REPORT: REHABILITATION OF DENTIGEROUS CYST IN A CHILD PATIENT WITH CYST DECOMPRESSION PROSTHESIS

ABSTRACT

Introduction: Dentigerous cysts, a type of odontogenic cyst, are benign developmental lesions commonly associated with impacted teeth, frequently observed during childhood and adolescence, and, if left untreated, can negatively affect jaw development and dental health.

Objective: The aim of this case report is to present the effectiveness and short-term clinical outcomes of a custom-fabricated acrylic decompression prosthesis incorporating Akers clasps, specifically designed for the defect, in the treatment of a dentigerous cyst in a pediatric patient.

Case Presentation: An 11-year-old male patient with no systemic disease was referred from the Department of Pedodontics to the Department of Prosthodontics at our faculty for the decompression of a cystic cavity. The patient was examined radiographically and clinically. Radiographically, the adjacent teeth and the cyst cavity were observed; clinically, the extraction socket was seen. An impression of the extraction socket was taken, and a custom-designed cyst decompression prosthesis extending directly into the marsupialized cystic cavity was fabricated to ensure decompression and function as a space maintainer. The fabricated cyst decompression prosthesis was delivered to the patient, and a follow-up appointment was scheduled. After 12 months of use, clinical and radiographic evaluations indicated healing of the cystic lesion.

Conclusion: As demonstrated in this case, marsupialization and decompression using a custom-made acrylic cyst decompression prosthesis represent an effective treatment method capable of resolving odontogenic cystic lesions. This approach allows for the preservation of critical anatomical structures while reducing the morbidity and risk of recurrence associated with enucleation. Before considering more invasive options, this simplified technique may be regarded as a conservative treatment approach for managing odontogenic cystic lesions in the jaws.

Keywords: Dentigerous Cyst, Marsupialization, Cyst Decompression Prosthesis

KESER DİŞLERDE GÖRÜLEN TRAVMATİK İNTRÜZYON VE SUBLÜKSASYONUN DENTAL REHABİLİTASYONU: OLGU SUNUMU

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ÖZET

Giriş: Travmatik dental yaralanmalar, çocukluk ve genç yetişkinlik dönemlerinde sıkça görülmekte ve özellikle üst çene anterior dişler etkilenmektedir.

Amaç: Bu olgu raporunda dental travma sonucu dişlerinde intrüzyon veya sublüksasyon görülen 9 yaşındaki çocuk hastanın ağız içi rehabilitasyonunun sunulması amaçlanmaktadır.

Olgu Sunumu: Okul bahçesinde düşmesi nedeniyle 9 yaşındaki kız hasta, Recep Tayyip Erdoğan Üniversitesi Diş Hekimliği Fakültesi Çocuk Diş Hekimliği kliniğine başvurdu. Klinik ve radyolojik değerlendirmeler sonucunda, hastanın 11 numaralı dişinde intrüzyon ve mine kırığı, 21 numaralı dişinde sublüksasyon ve mine-dentin kırığı, apeksinin açık olduğu görülen 12 numaralı dişinde de intrüzyon tespit edildi. İntrüze olan 11 ve 12 numaralı dişler, cerrahi yöntemle ekstrüze edilerek repoze edildikten sonra esnek travma splinti uygulandı ve 21 numaralı diş cam iyonomer ile geçici olarak restore edildi. Hasta antibiyotik, antienflamatuar ve antiseptik gargara reçete edilerek 2 hafta sonra kontrole çağrıldı. Kontrol randevusunda dişlerin semptomatik olması ve enfeksiyon bulguları sebebiyle 11 ve 12 numaralı dişlerin kanal tedavisine başlandı. Travma splinti 2 haftalık sürenin sonunda söküldü. Apikal tıkacı mineral trioksit agregat (MTA) ile oluşturulan 12 numaralı dişin kanal dolumu da MTA ile yapıldı. Akabinde 11 numaralı dişin kanal dolumu MTA içerikli kanal patı ve guta perka ile yapıldı ve 21 numaralı diş kompozit ile restore edildi. Hastanın 8. hafta, 3. ve 4. ay kontrollerinde dişlerin klinik ve radyolojik olarak asemptomatik olduğu görüldü. Hasta travmadan 5 ay sonra 21 numaralı dişinde ağrı ve şişlik şikayetiyle kliniğe başvurdu. Yapılan klinik ve radyolojik muayene sonucunda akut apikal apse endikasyonu konulan 21 numaralı dişe kanal tedavisine başlandı ve 2 hafta süreyle kalsiyum hidroksit medikament olarak kök kanalına uygulandı. Daha sonra 21 numaralı dişin kanal dolumu MTA içerikli kanal patı ve guta perka ile yapıldı. Hastanın 1. yıl kontrol randevusunda dişlerin klinik ve radyolojik olarak asemptomatik olduğu görüldü. Hastanın takipleri devam etmektedir.

Sonuç: Süt veya daimi dişlerde meydana gelen lüksasyon tipi dental travmalarda, erken tanı konulması, uygun tedavi protokolünün uygulanması ve uzun dönem klinik takibin oldukça önemli olduğu görülmektedir.

Anahtar Kelimeler: Dental Travma, İntrüzyon, Sublüksasyon, Olgu Sunumu

MONTESSORI PRINCIPLES AS A CONCEPTUAL MODEL FOR DEVELOPING EXECUTIVE FUNCTION IN EARLY CHILDHOOD

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ABSTRACT

Executive function (EF)—a suite of higher-order cognitive processes encompassing working memory, inhibitory control, and cognitive flexibility—serves as a critical neurological foundation for self-regulation, goal-directed behavior, and adaptive learning. These skills undergo rapid development during early childhood (ages 3–6 years), driven largely by prefrontal cortex maturation, and robustly predict lifelong academic, social, and emotional outcomes. Consequently, pedagogical strategies intentionally designed to scaffold EF development are urgently needed in early education.

This conceptual paper interrogates how the core principles of Montessori education—including the Prepared Environment, autoeducation, freedom within limits, didactic materials, and sensitive periods—function as an integrated pedagogical system uniquely aligned with EF enhancement. We argue that Montessori philosophy inherently nurtures EF through: 1) Structured autonomy (cultivating inhibitory control via self-directed choice within boundaries); 2) Sensorial, sequential materials (strengthening working memory and cognitive flexibility); 3) Uninterrupted work cycles (promoting attentional endurance and error monitoring); and 4) Mixed-age collaboration (training social-emotional regulation).

Through a systematic synthesis of developmental theory, cognitive neuroscience, and empirical studies on Montessori outcomes, this study constructs a novel framework mapping Montessori practices onto EF growth mechanisms. It posits Montessori education as a naturalistic EF intervention, where pedagogical design mirrors neurodevelopmental readiness. While not empirically tested here, this model offers actionable insights for educators and policymakers seeking evidence-based approaches to embed EF support into early learning environments.

Keywords: Montessori Method, Executive Function, Early Childhood Education, Cognitive Flexibility, Self-Regulation, Neurodevelopment, Prepared Environment

YAŞLILARDA ÜRİNER İNKONTİNANS VE HEMŞİRELİK YAKLAŞIMLARI

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ÖZET

Gelişen teknoloji ve tıp alanındaki ilerlemelerle birlikte dünyada ve Türkiye'de yaşam süresi uzamakta ve yaşlı nüfusu da artmaktadır. Bu durum yaşlanma ile birlikte görülme sıklığı artan ve yaşam kalitesini etkileyen sağlık sorunlarını daha da gözle görülür hale getirmektedir. Yaşlılarda sık görülen ve yaşam kalitesini olumsuz yönde etkileyen sağlık sorunlarından biri de Üriner inkontinanstır. Üriner inkontinans istem dışı idrar kaçırma olarak tanımlanmakta ve yaş ilerledikçe görülme sıklığı da artmaktadır. Üriner inkontinansın önleme ve tedavi etmede özellikle birinci basamak sağlık kuruluşlarında çalışan halk sağlığı hemşirelerine ve klinik hemşirelerine büyük görev düşmektedir. Üriner inkontinansın değiştirilebilir risk faktörlerinin yönetimi, Üriner inkontinansı önlemeye ve tedavi etmeye yönelik yaşam tarzı ve davranış değişiklikleri, Üİ görülme oranını düşürmek ve yaşam kalitesini arttırmak için oldukça önemlidir. Bunun için hemşireler, Üriner inkontinans konusunda bilgilerini güncel tutarak, bakım verdikleri kişiye uygun şekilde davranış değişiklikleri oluşturmayı, baş etme yöntemleri geliştirmeyi ve güçlü iletişim tekniklerini kullanarak kişinin yaşam kalitesini en üst düzeye çıkarmayı amaçlamaktadır. Bu derlemede toplumun büyük bir kısmını oluşturan yaşlılar ve bu yaşlılarda sağlığı olumsuz etkileyip yaşam kalitesini düşüren üriner inkontinansa yönelik hemşirelik yaklaşımı hakkında hakkında bilgi verilmektedir.

Anahtar Kelimeler: Üriner inkontinans, Yaşlanma, Hemşirelik Bakımı, Yaşam Kalitesi, Davranış Değişikliği

ATTENUATION OF ACUTE RESPIRATORY DISTRESS SYNDROME IN CLP-INDUCED SEPSIS BY *Punica granatum* PEEL

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ABSTRACT

Sepsis is a severe clinical syndrome characterized by an unregulated host response to infection. It leads to widespread tissue damage and organ dysfunction. Alarmingly, sepsis accounts for 11 million deaths worldwide each year. Novel therapeutic interventions that are prompt and effective are paramount for improving survival rates. *Punica granatum* is known for its high polyphenol content, which contributes to its potent antioxidant activity. Amifostine is a well-established free radical scavenger. This study investigated the antioxidant and anti-inflammatory properties of *P.granatum* peel extract (PGPE) compared to amifostine in a CLP (cecal ligation and puncture)-induced acute respiratory distress syndrome (ARDS) model. Rats were divided into groups: control group; CLP group; amifostine group (receiving 200 mg/kg amifostine intraperitoneally); PGPE250 and PGPE500 groups (receiving 250 and 500 mg/kg PGPE via oral gavage, respectively). Thiobarbituric acid reactive substances (TBARS), a marker of lipid peroxidation, and tumor necrosis factor-alpha (TNF-α), a key pro-inflammatory cytokine, were significantly reduced in the PGPE- and amifostine-treated groups compared to the CLP group. Concurrently, total thiol (TT) levels, which are indicative of antioxidant capacity, showed a notable improvement. Histopathological evaluations revealed reduced immunopositivity for matrix metalloproteinases 2 (MMP-2) and 9 (MMP-9) in the PGPE250 and PGPE500 groups, indicating a decrease in tissue remodeling and inflammation. The study strongly emphasizes the potential of PGPE as a therapeutic agent because of its lung-protective properties in treating sepsis-induced acute lung injury, and further research into its clinical applications is warranted.

Anahtar Kelimeler: Amifostine; ARDS; CLP; Punica granatum; sepsis.

ÖZET

Sepsis enfeksiyonun neden olduğu düzensiz immün yanıt ile karakterize ciddi bir klinik sendromdur. Yaygın doku hasarı ve organ fonksiyon bozukluğuna yol açmaktadır. Sepsis her yıl dünya çapında 11 milyon ölüme neden olmaktadır. Hızlı ve etkili yeni terapötik müdahaleler, hayatta kalma oranlarını iyileştirmek için oldukça önemlidir. *Punica granatum* güçlü antioksidan aktivitesine katkıda bulunan yüksek polifenol içeriğe sahiptir. Amifostin ise iyi bilinen bir serbest radikal temizleyicidir. Bu çalışmada, CLP (çekal ligasyon ve perforasyon) ile indüklenen akut solunum sıkıntısı sendromu (ARDS) modelinde amifostine kıyasla *P.granatum* kabuğu ekstraktının (PGKE) antioksidan ve anti-inflamatuar özellikleri araştırılmıştır. Ratlar kontrol grubu; CLP grubu; amifostin grubu (200 mg/kg, intraperitonel); PGKE250 ve PGKE500 grupları (250 ve 500 mg/kg PGKE, oral gavaj) olmak üzere beş gruba ayrıldı. Tiyobarbitürik asit reaktif maddeleri (TBARS), total tiyol (TT), tümör nekroz faktörü-alfa (TNF-α), matriks metalloproteinaz 2 (MMP-2) ve 9 (MMP-9) seviyeleri ölçüldü. TBARS ve TNF-α seviyeleri PGKE ve amifostin gruplarında CLP grubuna kıyasla önemli ölçüde azalmıştır. Aynı zamanda TT seviyeleri de kayda değer bir iyileşme göstermiştir. Histopatolojik değerlendirmeler PGKE250 ve PGKE500 gruplarında MMP-2 ve MMP-9 immünpozitiflik seviyesinin azaldığını ortaya koyarak inflamasyonda azalma olduğunu göstermiştir. Bu çalışma, PGKE'nin sepsis kaynaklı ARDS tedavisinde akciğer koruyucu özellikleri nedeniyle terapötik bir ajan olarak potansiyelini güçlü bir şekilde vurgulamaktadır ve klinik uygulamalarına ilişkin daha fazla araştırma yapılması gerekmektedir.

Anahtar Kelimeler: Amifostin; ARDS; CLP; Punica granatum; sepsis.

Punica granatum EXTRACT REDUCED LPS-INDUCED INFLAMMATION IN ACUTE KIDNEY INJURY BY DECREASING LEVELS OF RECEPTOR TLR4 AND TRANSCRIPTION FACTOR NF-κB

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ABSTRACT

Sepsis is characterised by an exaggerated immune response stemming from systemic inflammation, which can result in significant damage to tissues and organs. At least one-third of patients with sepsis are diagnosed with acute kidney injury (AKI), highlighting the condition's high mortality and morbidity rates. Plant-derived supplements contain a variety of bioactive components with therapeutic potential against various pathological conditions. In this context, *Punica granatum* (pomegranate) peel is a particularly notable source of phenolic compounds. This study aimed to evaluate the anti-inflammatory properties of *P.granatum* peel extract (PGPE) in an Lipopolysaccaride (LPS)-induced AKI model. The experimental groups were as follow: control, LPS (10 mg/kg, intraperitoneally), PGPE100 and PGPE300 (receiving 100 and 300 mg/mL PGPE via oral gavage, respectively, for seven days). Biochemical analyses revealed significant reductions in serum blood urea nitrogen (BUN) and creatinine (Cr) levels in the PGPE-treated groups compared to the LPS group. Histopathological and immunohistochemical investigations corroborated the findings, demonstrating an increased Toll-like receptor 4 (TLR4) levels and nuclear factor kappa B (NF-κB) expression in the LPS group compared to the control group. The PGPE groups subsequently modulated the TLR4 and NF-κB levels. In conclusion, our findings strongly suggest that PGPE has the potential to exert anti-inflammatory effects in the treatment of LPS-induced acute kidney injury in rats. This study supports further investigation into PGPE as a promising therapeutic strategy for sepsis-associated kidney damage.

Keywords: acute kidney injury; LPS; NF-κB; Punica granatum; TLR4.

ÖZET

Sepsis, sistemik inflamasyondan kaynaklanan, doku ve organlarda önemli hasara yol açabilen aşırı bağışıklık tepkisi ile karakterize bir tablodur. Sepsis hastalarının en az üçte birine akut böbrek hasarı (ABH) teşhisi konulmakta, bu durum yüksek mortalite ve morbidite oranlarını vurgulamaktadır. Bitkiler çeşitli patolojik durumlara karşı terapötik potansiyele sahip biyoaktif bileşenler içerir. Bu bağlamda, *Punica granatum* (nar) kabuğu zengin fenolik bileşik içeriğine sahip bir kaynaktır. Bu çalışmanın amacı, Lipopolisakkarit (LPS) ile indüklenen ABH modelinde *P.granatum* kabuğu ekstraktının (PGKE) anti-inflamatuar özelliklerini değerlendirmektir. Deney grupları: kontrol, LPS (10 mg/kg, intraperitoneal), PGKE100 ve PGKE300 (sırasıyla 100 ve 300 mg/mL PGKE, oral gavaj, 7 gün). Biyokimyasal analizler, LPS grubuna kıyasla PGKE ile tedavi edilen gruplarda serum kan üre azotu (BUN) ve kreatinin (Cr) seviyelerinde önemli düşüşler olduğunu ortaya koymuştur. Histopatolojik ve immünohistokimyasal incelemeler, kontrol grubuna kıyasla LPS grubunda Toll benzeri reseptör 4 (TLR4) seviyelerinde ve nükleer faktör kappa B (NF-κB) ekspresyonunda artış olduğunu göstererek bulguları desteklemiştir. PGKE grupları daha sonra TLR4 ve NF-κB seviyelerini modüle etmiştir. Sonuç olarak, bulgularımız PGKE'nin LPS tedavisinde anti-inflamatuar etki gösterme potansiyeline sahip olduğunu güçlü bir şekilde ortaya koymaktadır.

Anahtar Kelimeler: akut böbrek hasarı; LPS; NF-κB; Punica granatum; TLR4.

Evaluation of Caffeic acid phenethyl ester (CAPE), Melatonin, and Metformin as Anti-Tumor and Anti-Inflammatory Agents in Colon Cancer Cell Lines.

kolon kanseri hücre hattinda kafeik asit fenetil ester (CAPE), melatonin ve metforminin anti-tümör ve anti-inflamatuar ajanlar olarak değerlendirilmesi.

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Abstract

Colon cancer progression is driven by dysregulated inflammatory pathways (NF-κB, TNF-β, TGF-β) and epithelial-mesenchymal transition (EMT), making them critical therapeutic targets; this study evaluates natural compounds—caffeic acid phenethyl ester (CAPE), melatonin, and metformin—alone and in combination (CAPE-metformin 1:10, melatonin-metformin 1:18) in HT-29 colon adenocarcinoma cells, revealing through ELISA quantification that CAPE-metformin synergistically suppressed NF-κB by 87% ($p<0.0001$) via dual IκBα stabilization (CAPE) and AMPK activation (metformin), with CompuSyn analysis confirming profound synergy at Fraction Affected (Fa) = 0.5–0.75 (Combination Index, CI=0.25, Dose Reduction Index, DRI>1000) but antagonism at Fa>0.8 due to target saturation, while melatonin-metformin optimally reversed EMT by upregulating E-cadherin 3.2-fold ($p<0.001$) through MT1 receptor-mediated ZEB1/Snail inhibition and downregulating mesenchymal markers N-cadherin (76%) and vimentin (77%, $p<0.0001$) via AMPK/mTOR disruption, supported by synergistic CI=0.53 at Fa=0.5 enabling clinically feasible dosing (0.14–0.36 mM melatonin + 2.5–6.5 mM metformin).

TNF-β was most potently inhibited by melatonin monotherapy (80% reduction, $p<0.001$), aligning with its NF-κB blockade through antioxidant pathways, whereas TGF-β suppression peaked under melatonin-metformin (85%, $p<0.0001$) via coordinated Smad3 phosphorylation inhibition and metabolic reprogramming; cytotoxicity IC_{50} analysis showed CAPE required lower concentrations (72h IC_{50}: 80 μM) than melatonin (72h IC_{50}: 1.2 mM) or metformin (72h IC_{50}: 60 mM), though combinations enhanced efficacy—melatonin-metformin achieved 50%

growth inhibition at 100× lower melatonin doses (0.055 mM) than monotherapy in dose-effect curves, while CAPE-metformin demonstrated a steeper median-effect slope (m=-0.72 vs. CAPE m=-0.15), confirming amplified bioactivity; mechanistic synergy modeling (Loewe/Bliss/HSA) consistently identified optimal ratios—CAPE-metformin synergy peaked at 35μM CAPE + 7μM metformin (1:5 ratio, +77% effect vs. additive) through complementary pro-apoptotic (CAPE) and metabolic (metformin) actions, whereas melatonin-metformin synergy dominated at 0.275mM melatonin + 5mM metformin (1:18 ratio, 65% enhanced effect) via ROS induction and glutamine metabolism suppression, though both combinations showed spatial antagonism in isobolograms at high doses (e.g., CAPE-metformin CI=2992 at Fa=0.9).

These findings delineate context-specific strategies: CAPE-metformin excels in NF-κB-driven inflammatory microenvironments characteristic of primary tumors and chemoresistance, reducing cytokine-driven proliferation while enabling >1000-fold dose de-escalation to mitigate hepatotoxicity risks, whereas melatonin-metformin dominates metastatic prevention by reversing TGF-β-induced EMT and suppressing vimentin-mediated invasion, leveraging melatonin's circadian compatibility for timed therapy; critically, metformin's clinical translatability (human achievable plasma: 1–10 mM) and melatonin's safety profile position these combinations for rapid translation, with CAPE-metformin recommended for locally advanced MSS subtypes and melatonin-metformin for diffuse/mesenchymal phenotypes, though Fa-specific antagonism necessitates precision dosing to avoid therapeutic escape; collectively, this work establishes a pharmacologically optimized roadmap for targeting colon cancer heterogeneity through natural compound synergy, with future studies needed to validate in vivo efficacy and molecular crosstalk in patient-derived models.

Keywords: Colon cancer, CAPE, Melatonin, NF-κB , EMT

IMPACT OF SCALPING ON THE MECHANICAL PROPERTIES OF GRANULAR SOILS

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Abstract

Scalping, a process involving the removal of surface soil layers, is a common activity in geotechnical and construction engineering that can significantly influence the mechanical properties of granular soils. This study examines how scalping affects key geomechanical parameters such as shear strength, compressibility, and permeability in various types of granular soils. Through a combination of laboratory tests and field case studies conducted across different climatic and geological settings, samples were prepared with and without scalping treatment. Results reveal that scalping generally increases soil density and shear strength by removing loose, fine particles and altering particle size distribution. However, it may also reduce soil permeability due to compaction effects, which has implications for drainage and water retention properties. The analysis explores the influence of scalping depth and initial soil condition on these outcomes. The findings suggest that appropriate scalping management can enhance soil stability in foundations and earth structures, but improper application may lead to unintended consequences such as increased runoff or erosion risk. This research contributes to optimizing soil preparation techniques for construction and agricultural purposes, providing guidance for engineers on balancing mechanical improvements against environmental impacts. Further investigations are recommended to study long-term effects under cyclic loading and environmental exposure.

Keywords: scalping, granular soils, shear strength, soil compaction, permeability

SIMULATING AND ANALYZING THE MOTION CHARACTERISTICS OF INDIVIDUAL ROCKFALLS: A STATISTICAL APPROACH

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Abstract

Rockfall events pose significant hazards in mountainous and steep terrain areas, making understanding their motion characteristics crucial for risk mitigation and infrastructure protection. This study introduces a statistical simulation framework to analyze the trajectories, velocities, and travel distances of individual rockfall events using Monte Carlo methods combined with field-measured parameters. Data from a series of monitored rockfalls in a highly fractured mountainous region were used to calibrate the simulation model. The results capture the inherent variability and uncertainty in rockfall behavior arising from differences in rock size, slope geometry, and surface conditions. Key motion characteristics such as bouncing frequency, rolling distance, and resting angles were statistically quantified, revealing patterns useful for hazard prediction. Sensitivity analyses highlight the dominant factors affecting rockfall runout and impact energies. The model offers a practical tool for engineers and planners to estimate rockfall hazard zones and design protective structures. The paper discusses how integrating statistical approaches with deterministic modeling improves the reliability of rockfall risk assessments. Future work aims to extend the model to include climate-related triggers and material weathering effects.

Keywords: rockfall simulation, statistical modeling, hazard assessment, Monte Carlo methods, geohazards

FIELD AND PETROGRAPHIC CORRELATIONS OF CHARNOCKITIC AND ASSOCIATED GRANITIC ROCKS IN THE AKURE AREA, SOUTHWESTERN NIGERIA

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Abstract

The Akure area in southwestern Nigeria hosts a complex assemblage of charnockitic and granitic rocks whose origin and petrogenetic relationships have implications for regional tectonics and mineral exploration. This study combines detailed field mapping with petrographic analyses to elucidate the textural, mineralogical, and structural characteristics of these rocks. Samples collected from key outcrops were examined under polarized microscopy and compared with field observations regarding lithology, foliation patterns, and structural deformation. The results indicate distinct differences in mineral content and crystallization history between charnockitic and associated granitoid bodies, suggesting multiple magmatic and metamorphic events. Petrographic signatures such as quartz and feldspar morphology, presence of orthopyroxene, and alteration features provide insights into the metamorphic grade and cooling history. Structural correlations underscore the influence of regional deformation phases on rock fabric. These findings contribute to understanding the geodynamic evolution of the Nigerian basement complex and support exploration strategies for high-grade metamorphic terrains. The paper highlights the value of integrated field and laboratory studies in deciphering the geological history of complex metamorphic provinces.

Keywords: charnockite, granite, petrography, Akure, Nigerian basement complex

APPLICATION OF CSAMT METHOD IN INVESTIGATING COMPLEX ROCK MASS STRUCTURE AND CONCEALED TECTONIC FEATURES: CASE STUDIES

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Abstract

The Controlled-Source Audio-frequency Magnetotelluric (CSAMT) method is a valuable geophysical technique for imaging subsurface rock structures and identifying concealed tectonic features critical to engineering and mineral exploration projects. This paper presents case studies demonstrating CSAMT applications in two geologically complex areas characterized by faulted and fractured rock masses. High-resolution resistivity models reconstructed from CSAMT data reveal variations in lithology, fracture zones, and fluid pathways that are often undetectable by traditional geophysical methods. The investigations successfully delineated fault locations, lithological boundaries, and potential zones of weakness that could affect construction stability or resource extraction. Interpretation was supported by complementary geologic and geotechnical information, reinforcing the reliability of CSAMT surveys. These case studies showcase the method's capacity to resolve intricate subsurface structures in challenging environments, improve hazard assessments, and guide engineering designs. The paper advocates for wider adoption of CSAMT in rock mass characterization and discusses best practices for data acquisition and processing.

Keywords: CSAMT, rock mass structure, tectonic features, geophysical survey, resistivity imaging

UNIFIED EQUATION FOR WATER SURFACE PROFILE ALONG SIDE WEIRS IN COMBINED TRAPEZOIDAL AND EXPONENTIAL CHANNELS

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Abstract

Understanding water surface profiles along side weirs in complex channel geometries is essential for effective hydraulic design and flood management. This research develops a unified mathematical equation describing steady-state water surface profiles along side weirs in channels combining trapezoidal and exponential cross-sectional shapes. The study derives the equation from principles of open channel flow and energy conservation, incorporating flow resistance, weir discharge characteristics, and channel geometry parameters. Analytical and numerical solutions are presented, validated against experimental data from laboratory flume tests. The unified equation accurately predicts water levels and flow distributions along various channel configurations, improving over previous empirical formulas limited to simpler geometries. Sensitivity analyses illustrate the effects of channel slope, weir length, and flow rate on the water surface profile. Practical implications for designing efficient spillway systems and urban drainage channels are discussed. The approach enhances hydraulic modeling capabilities in complex natural and engineered waterways and can be extended to transient flow scenarios in future research.

Keywords: water surface profile, side weir, hydraulic modeling, trapezoidal channel, exponential channel

COMPARATIVE ANALYSIS OF CO-SEISMIC GRAVITY CHANGES: GRACE OBSERVATIONS VERSUS FINITE-FAULT MODEL PREDICTIONS FOR THE 2012 MW = 8.6 INDIAN OCEAN EARTHQUAKE OFF-SUMATRA

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Abstract
Large-magnitude earthquakes cause measurable co-seismic perturbations in Earth's gravity field, detectable by satellite gravimetry missions such as GRACE (Gravity Recovery and Climate Experiment). This study performs a comparative analysis between observed co-seismic gravity changes from GRACE measurements and theoretical predictions from finite-fault models for the 2012 Mw 8.6 Indian Ocean earthquake off the coast of Sumatra. Satellite data spanning the earthquake period were processed to extract gravity anomalies, which were then compared with modeled gravity changes based on the earthquake's seismic slip distribution and fault geometry. Results demonstrate good agreement in spatial patterns and magnitudes, validating the finite-fault approach in representing mass redistribution during seismic events. Discrepancies are discussed in the context of noise, temporal resolution, and model simplifications. This research enhances understanding of the coupling between seismic processes and geodetic measurements and supports improved earthquake source characterization. Findings have applications in geophysical hazard assessment and monitoring of tectonic mass movements using satellite gravimetry.

Keywords: co-seismic gravity, GRACE, finite-fault model, Indian Ocean earthquake, satellite gravimetry

GEOTECHNICAL CHARACTERISTICS AND COMPRESSION BEHAVIOR OF ORGANIC DREDGED SEDIMENTS

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Abstract

Organic dredged sediments represent a significant geotechnical challenge due to their heterogeneous composition and complex consolidation behavior, which impact their suitability for reclamation and construction purposes. This study assesses the physical, mechanical, and compression characteristics of organic sediments obtained from major dredging operations in coastal and riverine environments. Laboratory testing includes particle size analysis, Atterberg limits, oedometer consolidation tests, and shear strength measurements. Results highlight the distinct compressibility and strength reduction associated with organic content and degree of decomposition. The investigation identifies key parameters influencing sediment behavior such as organic matter percentage, moisture content, and sediment age. The findings aid in developing predictive models for settlement and stability of structures founded on or constructed with dredged materials. Recommendations for improving sediment handling and reuse strategies in engineering projects are discussed. This research provides essential data for designing safe and sustainable dredging and reclamation projects in areas with organic-rich sediments.

Keywords: organic sediments, geotechnical properties, compression behavior, dredging, soil mechanics

OPTIMIZING PRODUCTION WITH EJECTOR INSTALLATION: A CASE STUDY FROM OFFSHORE OPERATIONS IN THE NORTH WEST JAVA FIELD

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Abstract
Enhancing oil production efficiency in offshore fields is critical for sustaining energy supplies and economic viability. This case study evaluates the implementation of ejector technology in the North West Java offshore field to optimize reservoir output and manage gas-lift challenges. Operational data before and after ejector installation were analyzed to quantify improvements in production rates, pressure profiles, and equipment reliability. The ejector system improved gas handling capacity, reduced operational costs, and enhanced liquid recovery by boosting wellhead pressure and stabilizing flow regimes. The study discusses design parameters, installation procedures, and integration with existing infrastructure. Sensitivity analyses identify optimal ejector configurations and operational settings tailored to reservoir characteristics. The findings demonstrate significant benefits in boosting oil production and extending field life, contributing to improved resource management. Lessons learned from this project inform best practices for ejector applications in similar offshore environments globally.

Keywords: ejector technology, offshore production, reservoir optimization, gas lift, petroleum engineering

NUMERICAL SIMULATION OF OIL-WATER DISPLACEMENT IN PETROLEUM RESERVOIRS: TWO-DIMENSIONAL OBSERVATIONS AND APPLICATIONS

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Abstract

Accurately modeling multiphase flow in petroleum reservoirs is essential for efficient hydrocarbon recovery and reservoir management. This work presents a two-dimensional numerical simulation study focusing on oil-water displacement processes using finite volume methods and multiphase flow equations. The model incorporates realistic reservoir parameters, capillary pressure effects, and relative permeability curves to capture fluid interactions. Simulation results demonstrate the formation of fingering patterns, breakthrough times, and displacement efficiencies under varying injection schemes and reservoir heterogeneities. The study evaluates the impact of viscosity ratios, injection rates, and porous media characteristics on recovery performance. Validation with laboratory core flooding experiments confirms model reliability. Applications of the model include optimizing enhanced oil recovery techniques such as water flooding and chemical injection. Challenges in scaling simulations to three dimensions and incorporating complex geological features are discussed. This research advances predictive capabilities for reservoir simulation and supports decision-making in petroleum production.

Keywords: oil-water displacement, numerical simulation, multiphase flow, reservoir engineering, finite volume method

EFFECTS OF SURFACE SCALPING ON THE STRENGTH AND DEFORMATION CHARACTERISTICS OF GRANULAR SOILS

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Abstract

This study examines how surface scalping affects the geotechnical behavior—specifically the strength and deformation properties—of granular soils typically found in construction and infrastructure projects. Surface scalping, a technique used to remove the uppermost soil layers including loose or unsuitable material, is widely practiced to improve foundation conditions. Laboratory tests including triaxial compression, direct shear, and consolidation tests were conducted on both scalped and unscalped granular soil samples collected from various sites in Kazakhstan. The results reveal that scalping enhances soil density and reduces void ratios, leading to increased shear strength and reduced compressibility. Deformation characteristics such as settlement under load also exhibited significant improvements in scalped samples. These findings emphasize the importance of surface preparation in ground improvement efforts and provide quantitative data to inform engineering design. Additionally, the study discusses how soil particle size distribution and mineralogical composition interact with scalping effects. The practical implications suggest that proper surface scalping can mitigate risks of excessive settlement and slope failures, ensuring better performance of foundations and earthworks. This research contributes to geotechnical engineering by highlighting an effective soil treatment technique and its influence on granular soil mechanics in semi-arid and steppe environments. Future work may extend these findings to other soil types and climatic regions.

Keywords: surface scalping, granular soils, shear strength, soil deformation, geotechnical engineering

STATISTICAL MODELING AND SIMULATION OF ROCKFALL DYNAMICS IN MOUNTAINOUS TERRAIN

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Abstract

Rockfalls pose significant hazards in mountainous regions, threatening infrastructure, human safety, and ecological systems. This research presents a comprehensive statistical modeling and simulation framework to analyze rockfall dynamics on steep slopes commonly found in Southeast Asia. Data from field observations, historical records, and remote sensing were integrated to characterize rockfall frequency, magnitude, and trajectories. Various stochastic models, including Poisson processes and Monte Carlo simulations, were developed to predict rockfall occurrence and impact zones under different terrain and climatic conditions. Model validation was performed using case study data from the Cameron Highlands and Genting Highlands regions. Results demonstrate the effectiveness of probabilistic approaches in capturing the complexity and unpredictability of rockfalls. Furthermore, the study explores mitigation strategies by simulating the effect of barrier systems and slope stabilization measures. The proposed models facilitate risk assessment and land-use planning by providing quantitative estimates of rockfall hazards and their spatial distribution. This interdisciplinary approach combining geology, statistics, and engineering informs sustainable development in vulnerable mountainous landscapes. Future research directions include coupling climate change projections with geohazard modeling to anticipate evolving rockfall risks.

Keywords: rockfall dynamics, statistical modeling, mountainous terrain, hazard simulation, geohazards

PETROGRAPHIC AND FIELD STUDY OF CHARNOKITIC AND GRANITIC FORMATIONS IN SOUTHWESTERN NIGERIA

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Abstract

This paper details a comprehensive petrological and field investigation of charnockitic and granitic rock formations located in Southwestern Nigeria. The study aims to elucidate the mineralogical composition, textural characteristics, and tectonic history of these rocks to better understand regional geological evolution. Fieldwork involved mapping and sample collection, followed by laboratory petrographic analysis using thin-section microscopy, X-ray diffraction, and geochemical assays. Results indicate that the charnockitic rocks exhibit coarse-grained textures dominated by orthopyroxene and feldspar, suggesting high-grade metamorphic conditions. The associated granitic formations display varied intrusive relationships and compositional zoning consistent with multiple magmatic pulses. Structural analysis reveals deformation features indicative of tectono-metamorphic events related to the Pan-African orogeny. The integration of petrographic and structural data supports a model of crustal reworking involving partial melting and magmatic differentiation. Findings contribute to the broader understanding of Precambrian basement complexes in West Africa and provide insights relevant to mineral exploration and tectonic reconstructions. The study highlights the significance of combined field and laboratory approaches in unraveling complex geological histories.

Keywords: charnockitic rocks, granitic formations, petrography, tectonic history, Southwestern Nigeria

APPLICATION OF CSAMT TECHNIQUE FOR INVESTIGATING COMPLEX TECTONIC STRUCTURES: CASE STUDIES FROM SOUTHEAST ASIA

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Abstract

The Controlled-Source Audio-Frequency Magnetotellurics (CSAMT) technique has emerged as a powerful geophysical method for imaging subsurface resistivity distributions, especially useful in tectonically complex areas. This paper presents case studies applying CSAMT surveys across several Southeast Asian regions characterized by intricate fault systems and variable lithologies. The CSAMT data were processed using robust inversion algorithms to create high-resolution resistivity models that reveal fault geometries, fracture zones, and sedimentary basin structures. Results demonstrate the capacity of CSAMT to delineate subsurface features otherwise obscured by conventional methods, aiding in the identification of zones susceptible to seismic activity and fluid migration pathways. Detailed analysis reveals correlations between resistivity anomalies and known tectonic features, supporting interpretation reliability. The use of CSAMT enhances geological understanding, which is vital for resource exploration and seismic hazard assessment. The paper also discusses technical challenges and strategies for optimizing data acquisition in tropical environments with high cultural noise. This study underscores the value of CSAMT as a complementary geophysical tool in Southeast Asian tectonics research and encourages its wider application in similar settings globally.

Keywords: CSAMT, tectonic structures, geophysical imaging, Southeast Asia, resistivity inversion

MATHEMATICAL MODELING OF WATER SURFACE PROFILES ALONG COMBINED TRAPEZOIDAL AND EXPONENTIAL CHANNELS

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Abstract

This paper focuses on the development and analysis of mathematical models to describe water surface profiles in open channels featuring combinations of trapezoidal and exponential cross-sectional shapes. Open channel flows with complex geometries present significant challenges for hydraulic design and flood management. The study employs the standard gradually-varied flow equations, incorporating channel geometry functions specific to trapezoidal and exponential sections. Analytical and numerical methods were utilized to solve the governing equations, enabling precise predictions of water surface elevations under varying flow conditions. Model validation was conducted using experimental data and field measurements from irrigation canals in Central Asia. The models provide engineers with reliable tools to optimize channel designs, predict flood levels, and improve water conveyance efficiency. Moreover, sensitivity analyses highlight the influence of channel slope, roughness, and flow discharge on water profile behavior. The research contributes to the broader field of hydraulic engineering by extending solution methodologies to hybrid channel configurations commonly encountered in agricultural and urban water management systems. Future work may consider transient flow conditions and sediment transport coupling.

Keywords: water surface profiles, open channel flow, trapezoidal channels, exponential channels, hydraulic modeling

COMPREHENSIVE ANALYSIS OF PIN FIN HEAT SINK EFFICIENCY

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Abstract
Heat sinks with pin fin configurations are widely used in modern electronics to dissipate heat effectively and maintain operational safety. This paper presents a comprehensive analysis of the efficiency of pin fin heat sinks under various geometric and operational parameters. It focuses on the influence of fin shape, fin spacing, material properties, and airflow velocity on thermal performance. Experimental data are complemented by numerical simulations using computational fluid dynamics (CFD) tools, aiming to optimize heat dissipation and reduce thermal resistance. The study investigates heat transfer mechanisms, namely convection and conduction, and examines how modifications in pin height and arrangement affect the overall thermal management. Results indicate that increasing fin surface area enhances heat transfer but may increase pressure drop, thus requiring a trade-off analysis. The impact of ambient conditions and heat flux density on performance is also discussed. Findings provide valuable insights into the design of more efficient cooling systems in high-power electronic devices. This work contributes significantly to practical engineering by guiding the development of compact, energy-efficient thermal management solutions.

Keywords: pin fin heat sink, thermal efficiency, heat transfer, computational fluid dynamics, electronics cooling

FEASIBILITY OF SIMPLIFIED SYNCHRONOUS GENERATOR MODEL FOR POWER SYSTEM STABILITY ASSESSMENT

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Abstract

Power system stability analysis requires accurate yet computationally efficient generator models to simulate dynamic behavior under various disturbances. This study investigates the feasibility of applying a simplified synchronous generator model for power system stability assessment. The proposed model reduces computational complexity while maintaining acceptable accuracy for transient and small-signal stability analyses. Validation is performed through comparison with detailed generator models under different fault and load scenarios on benchmark test systems. The results demonstrate that the simplified model successfully captures key dynamic characteristics, enabling faster simulations without significant loss of fidelity. Sensitivity analysis of model parameters highlights robustness across varying operating conditions. The paper discusses limitations and possible extensions, including integration with renewable energy resources and grid modernization technologies. This approach provides utilities and system planners with a pragmatic tool that balances model complexity with simulation speed, aiding real-time stability monitoring and control.

Keywords: synchronous generator, power system stability, simplified modeling, transient analysis, dynamic simulation

ELECTRICITY GENERATION FROM WASTEWATER USING A MICRO-HYDRAULIC TURBINE

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Abstract

The increasing energy demands and environmental concerns have propelled interest in sustainable electricity generation methods. This research explores the feasibility of harvesting electrical energy from wastewater flows via a micro-hydraulic turbine system. The study presents design considerations for miniaturized turbines optimized for low head and variable flow rates typical in wastewater treatment plants. Experimental prototypes were developed and tested in laboratory conditions simulating real wastewater streams to assess hydraulic efficiency and power output. Integration with micro-hydraulic generators and control electronics was evaluated for optimized conversion and grid compatibility. Results indicate practical potential for decentralized energy production, reducing reliance on traditional energy sources and carbon emissions. Furthermore, the study discusses scalability, cost-effectiveness, and environmental impacts, emphasizing the role of micro-hydraulic turbines in circular economy models. The findings encourage further development of innovative green technologies for wastewater infrastructure sustainability.

Keywords: micro-hydraulic turbine, wastewater energy, renewable energy, turbine design, sustainable technology

ONLINE DIAGNOSIS OF STATOR FAULTS IN SQUIRREL CAGE INDUCTION MOTORS USING ELECTRIC CURRENT ANALYSIS

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Abstract

Timely detection of stator faults in squirrel cage induction motors is critical for preventing unexpected failures and reducing maintenance costs. This paper proposes an online fault diagnosis technique based on electric current analysis leveraging advanced signal processing methods. The approach employs spectral analysis, wavelet transforms, and machine learning classifiers to detect anomalies indicative of stator winding faults. Data were collected through current sensors installed on operating motors in industrial environments. The proposed method enables early fault identification with high sensitivity and specificity, even under variable load conditions, enhancing reliability of fault prognosis. Comparisons with conventional diagnostic approaches demonstrate superior accuracy and real-time applicability. The work also addresses implementation challenges including noise interference, sensor placement, and computational efficiency. This research contributes to the development of smart condition monitoring systems which improve operational safety and extend machinery lifespan in power-dependent industries.

Keywords: stator faults, induction motors, electric current analysis, fault diagnosis, condition monitoring

ENHANCED MULTI-OBJECTIVE PARTICLE SWARM OPTIMIZATION FOR OPTIMAL DESIGN OF POWER SYSTEM STABILIZERS

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Abstract

Power system stabilizers (PSS) play a vital role in damping power system oscillations and enhancing dynamic stability. This study develops an enhanced multi-objective particle swarm optimization (MOPSO) algorithm to optimally design PSS parameters addressing conflicting objectives such as stability margin, damping ratio, and control effort. The proposed MOPSO integrates adaptive weighting strategies and global search capability improvements ensuring faster convergence and robustness against local optima. Validation is conducted on IEEE benchmark systems under various disturbance scenarios to test stability performance and robustness. Results illustrate significant improvements in performance indices compared to traditional optimization methods, demonstrating the algorithm's effectiveness. Sensitivity analyses highlight parameter impacts and tuning methodology. The practical applicability of the proposed design framework promises enhancements in power system reliability and operational safety. Future applications to smart grids and renewable-integrated networks are also discussed.

Keywords: power system stabilizers, multi-objective optimization, particle swarm optimization, dynamic stability, control systems

A COST-EFFECTIVE DESIGN AND ANALYSIS OF FULL BRIDGE LLC RESONANT INVERTER

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Abstract

The full bridge LLC resonant inverter is widely used in power electronics for efficient DC-DC conversion, especially in renewable energy and electric vehicle systems. This paper presents a cost-effective design methodology and performance analysis of full bridge LLC resonant inverters. The study focuses on optimizing component selection, switching frequency, and resonant tank parameters to maximize efficiency and reduce electromagnetic interference. Analytical modeling is corroborated with circuit simulations and prototype testing under varying load conditions. Special attention is given to thermal management and reliability aspects to ensure long-term operation. Results demonstrate industrially relevant efficiency improvements, reduced switching losses, and compact design feasibility. The research contributes valuable guidelines for engineers seeking cost-efficient power conversion solutions with high performance, especially suitable for medium voltage applications. Prospective work includes integration with smart grid technologies and higher power scaling.

Keywords: full bridge LLC inverter, power electronics, resonant inverter, energy efficiency, DC-DC conversion

OPTIMIZATION OF ENERGY EFFICIENCY IN THE DISTILLATION UNIT OF SHIRAZ OIL REFINERY

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Abstract
Distillation processes are energy-intensive and represent a significant portion of operational costs in oil refineries. This paper presents an optimization study aimed at enhancing energy efficiency in the distillation unit of Shiraz Oil Refinery. The approach combines process simulation models with advanced optimization techniques to minimize energy consumption while maintaining product quality and throughput. Variables such as reflux ratio, column pressure, and feed preheating temperatures are systematically adjusted. Sensitivity analyses identify key parameters influencing energy use. Results reveal potential energy savings up to 15% without compromising performance, contributing to cost reduction and environmental benefits. The study also discusses integration possibilities with heat recovery systems and renewable energy sources for sustainable refinery operations. This work provides industrial practitioners with pragmatic strategies to improve refinery energy management within a competitive market landscape.

Keywords: energy efficiency, distillation optimization, oil refinery, process simulation, heat integration

OPTIMIZATION OF TWO-STAGE BIOGAS PRODUCTION IN BIOFILM REACTORS

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Abstract

Biogas production is a sustainable method for renewable energy generation that harnesses organic waste materials. This study focuses on optimizing the two-stage biogas production process using biofilm reactors, which enhance microbial activity and improve gas yield. The two-stage system separates hydrolysis/acidogenesis and methanogenesis phases, allowing better control over each stage and increased biogas efficiency. Various operational parameters, including temperature, pH, substrate loading rate, and hydraulic retention time, were systematically varied to determine their effects on biogas output and composition. Experimental results from pilot-scale biofilm reactors showed significant improvements in methane content and biogas volume when optimal conditions were maintained. The use of biofilms improved microbial retention and stability, reducing process inhibition commonly experienced in conventional reactors. Furthermore, the study demonstrated that staged degradation reduces volatile fatty acid accumulation and enhances system resilience to fluctuating feedstock qualities. Modeling and simulation techniques were employed to predict system performance under different operating scenarios, providing a framework for scale-up and industrial application. This research contributes valuable insights to the field of anaerobic digestion and highlights biofilm reactors as promising technology for efficient biogas production using organic wastes. The findings support the development of more sustainable waste-to-energy technologies with economic and environmental benefits.

Keywords: biogas production, biofilm reactors, two-stage anaerobic digestion, methane optimization, renewable energy

ENHANCING NITROGEN AND PHOSPHORUS REMOVAL FROM LIVESTOCK WASTEWATER USING ZEOLITE AND IONIZING RADIATION

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Abstract

The effective removal of nitrogen and phosphorus from livestock wastewater is critical to prevent eutrophication and environmental contamination. This study investigates a novel combined approach utilizing zeolite adsorption and ionizing radiation treatment to enhance nutrient removal efficiencies. Zeolite minerals offer high cation exchange capacities conducive to ammonium adsorption, while ionizing radiation breaks down organic matter, facilitating nutrient release and enhancing bioavailability for adsorption. Laboratory batch experiments assessed the removal efficiencies of ammonia nitrogen and phosphate ions under varying dosages of zeolite and ionizing radiation levels. Results demonstrated a synergistic effect where pretreatment with ionizing radiation significantly increased nitrogen and phosphorus uptake by zeolite. Kinetic analyses revealed rapid adsorption rates, making the process feasible for real-time wastewater treatment. Additionally, the treated wastewater showed reduced biochemical oxygen demand (BOD) and chemical oxygen demand (COD), indicating effective organic pollutant reduction. This integrated technique offers a promising, environmentally friendly alternative for nutrient management in intensive animal farming operations, minimizing downstream impacts on aquatic ecosystems. The study also discusses practical considerations for scaling the process and optimizing energy consumption during radiation application for field deployment.

Keywords: nitrogen removal, phosphorus removal, zeolite adsorption, ionizing radiation, wastewater treatment

EFFECTS OF CRUDE OIL PARTICLE ELASTICITY ON HYDROCYCLONE SEPARATION PERFORMANCE

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Abstract

The separation of oil-water mixtures using hydrocyclones is a widely applied technology in the petroleum industry. However, the mechanical properties of crude oil particles, especially elasticity, significantly influence separation efficiency. This study examines how variations in crude oil droplet elasticity affect the performance of hydrocyclone separators. Using emulsified crude oil samples with controlled elastic moduli, experiments were conducted to measure separation efficiency, cut size, and pressure drop across hydrocyclones. The results indicate that more elastic droplets exhibit greater deformation under shear forces, leading to increased coalescence and improved separation. Computational fluid dynamics (CFD) simulations complemented experimental data by visualizing flow patterns and particle trajectories inside the hydrocyclone. Findings reveal that optimal operating conditions depend on balancing centrifugal and elastic forces to enhance phase separation without compromising throughput. This research provides valuable insights for designing and operating hydrocyclones tailored to specific crude oil properties, improving separation efficiency and reducing process costs. The implications extend to improved water treatment in oil production and refining processes.

Keywords: hydrocyclone, crude oil elasticity, oil-water separation, emulsions, petroleum processing

INFLUENCE OF OPERATIONAL PARAMETERS ON CALCIUM CARBONATE SCALE FORMATION IN PLATE HEAT EXCHANGERS

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Abstract

Calcium carbonate scaling in plate heat exchangers poses significant operational challenges, including heat transfer reduction and increased maintenance costs. This study systematically investigates the influence of key operational parameters such as inlet water temperature, flow velocity, and supersaturation levels on scale formation rates. Laboratory-scale experiments utilizing real process fluids were designed to simulate industrial conditions. Scale deposits were characterized through scanning electron microscopy (SEM) and X-ray diffraction (XRD) to analyze their morphology and crystalline structure. Results indicate that higher temperatures and lower flow velocities accelerate calcium carbonate nucleation and growth, leading to more severe scaling. Moreover, operational parameters affect the scale adhesion and detachment tendencies, impacting cleaning intervals. A predictive model based on thermodynamic and kinetic principles was developed to estimate scale formation under varying conditions. This model can aid in optimizing operational strategies and implementing preventive measures. The study contributes to prolonging heat exchanger lifespan, improving energy efficiency, and reducing downtime in thermal exchange operations across industries.

Keywords: calcium carbonate scaling, plate heat exchangers, operational parameters, scale formation, heat transfer efficiency

CFD STUDY OF FLOW DYNAMICS IN PACKED-BED REACTORS WITH STATIC MIXERS

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Abstract

Packed-bed reactors (PBRs) with integrated static mixers are widely utilized in catalytic and biochemical processing due to their enhanced mixing characteristics. This study employs computational fluid dynamics (CFD) to analyze flow dynamics, mixing efficiency, and pressure drop within PBRs equipped with static mixers. Various configurations of static mixing elements and packing materials were simulated to understand their effects on fluid velocity profiles, mass transfer rates, and residence time distribution. The CFD results revealed that appropriately designed static mixers disrupt channeling and dead zones, promoting uniform flow distribution and improved reactor performance. Pressure drop measurements provided insights into energy costs associated with different layouts. Validation of CFD predictions with experimental data showed strong correlation, endorsing the models for reactor scale-up and design optimization. This research facilitates informed design of PBRs for chemical and biochemical industries aiming for higher conversion rates and process intensification.

Keywords: packed-bed reactor, static mixers, CFD modeling, flow dynamics, mixing efficiency

DESIGN OF GUIDED STRUCTURES FOR SIMULTANEOUS REACTION AND SEPARATION IN MICROCHANNEL REACTORS

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Abstract

Microchannel reactors offer unparalleled control over reaction and separation processes at microscale, enabling process intensification and enhanced selectivity. This study introduces the design and evaluation of guided structures within microchannels to facilitate simultaneous chemical reactions and separation of products. Using advanced microfabrication techniques, various guided geometries were created and tested for their impact on flow distribution, mass transfer, and separation efficiency. Computational simulations complemented experimental investigations, highlighting the interplay between structural parameters and reactor performance. Results demonstrate that guiding structures effectively reduce axial dispersion and enhance phase separation by inducing secondary flows and interfacial area expansion. This approach optimizes reaction yield and minimizes downstream separation steps, presenting a significant advancement for chemical synthesis and pharmaceutical manufacturing. The study outlines design criteria and operational guidelines for implementing these microreactors in industrial settings.

Keywords: microchannel reactors, reaction-separation integration, guided structures, process intensification, microfabrication

ADSORPTION-BASED REMOVAL OF LEAD AND CADMIUM IONS USING ACTIVATED CARBON FROM CASHEW SHELLS

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Abstract

Heavy metal contamination of water sources, particularly with lead (Pb) and cadmium (Cd), presents grave environmental and public health risks. This research examines the efficacy of activated carbon derived from cashew nutshells as an economical and sustainable adsorbent for Pb(II) and Cd(II) ion removal from aqueous solutions. Activated carbon was prepared through chemical activation and characterized using BET surface analysis, FTIR, and SEM. Batch adsorption experiments were conducted to evaluate parameters including contact time, pH, initial metal concentration, and adsorbent dosage. Results show high adsorption capacities for both metals, with removal efficiencies exceeding 90% under optimized conditions. Adsorption kinetics followed pseudo-second-order models, indicating chemisorption mechanisms. Isotherm analyses suggested that Langmuir models best fit the data, highlighting monolayer adsorption. Regeneration studies demonstrated adsorbent reusability with minimal performance loss. This work supports the development of low-cost water treatment technologies utilizing agricultural waste, promoting circular economy principles in resource management.

Keywords: heavy metal removal, activated carbon, cashew shells, lead adsorption, cadmium adsorption

SOIL REMEDIATION THROUGH HYDROGEN PEROXIDE OXIDATION: TECHNICAL AND ENVIRONMENTAL ASSESSMENT

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Abstract

Soil contamination by organic pollutants poses severe ecological and health challenges. This study evaluates soil remediation using hydrogen peroxide (H_2O_2) oxidation, focusing on its effectiveness, technical feasibility, and environmental impacts. Laboratory-scale oxidation experiments assessed the degradation of persistent organic contaminants in various soil types. Parameters including H_2O_2 concentration, soil moisture, pH, and temperature were optimized for maximal remediation performance. Results indicated significant reductions in pollutant concentration, enhanced biodegradability, and minimal toxic by-product formation. Environmental assessments included analyses of soil microbial activity, physicochemical properties post-treatment, and potential secondary pollution risks. Comparisons with conventional remediation approaches underscored the advantages of H_2O_2 oxidation in terms of speed and environmental safety. The study proposes guidelines for field application and highlights the necessity of integrating oxidation with bioremediation to achieve sustainable soil restoration.

Keywords: soil remediation, hydrogen peroxide oxidation, organic contaminants, environmental assessment, sustainable treatment

EXPLORING THE IMPACT OF BUSINESS MODEL INNOVATION ON FIRM VALUE: AN EVOLVING FRAMEWORK

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Abstract
This study examines the dynamic relationship between business model innovation (BMI) and firm value, proposing an evolving framework that integrates current theoretical perspectives and empirical findings. As firms face rapid technological change and shifting market demands, innovating their business models has become vital for sustaining competitive advantage and enhancing firm valuation. Drawing upon a comprehensive review of literature and multiple case studies from diverse industries in China, the framework highlights key drivers, mechanisms, and outcomes of BMI on firm performance. The research underscores the importance of strategic alignment, organizational capabilities, and external environment in shaping how BMI contributes to financial and market-based measures of firm value. Additionally, the framework emphasizes the iterative nature of innovation processes and the necessity to adapt business models continuously in response to internal and external stimuli. Implications for managers include fostering a culture of innovation, leveraging digital technologies, and balancing exploration with exploitation. Limitations of the current research and directions for future studies, such as longitudinal analyses and cross-industry comparisons, are discussed. This evolving framework aims to guide both academic research and managerial practice in understanding the multifaceted impact of business model innovation on firm value creation.

Keywords: business model innovation, firm value, competitive advantage, strategic management, innovation framework

STRUCTURAL DESIGN AND BLAST RESISTANCE ASSESSMENT OF A SINGLE-STORY CONTROL ROOM FOR A PETROLEUM REFINERY

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Abstract
This research addresses the challenges of designing a single-story control room structure for a petroleum refinery with enhanced blast resistance. Given the inherent risks of explosive incidents in refineries, ensuring structural integrity and safety is critical. The study applies advanced computational simulation techniques and standards-based structural design criteria to assess blast load impacts and propose optimal structural solutions. A finite element method (FEM) model of the control room was developed, incorporating material nonlinearities and dynamic loading parameters. Various blast scenarios were simulated to evaluate the structural response, identify potential failure modes, and recommend reinforcement strategies. Results demonstrate the effectiveness of specific design modifications in improving resilience against shock waves and debris impact. Additionally, the study considers cost-efficiency and constructability aspects of the proposed design. Findings contribute to the broader field of industrial safety engineering and offer practical guidelines for refinery infrastructure development. Future work may explore real-time monitoring systems and integration with risk assessment frameworks.

Keywords: structural design, blast resistance, finite element analysis, petroleum refinery, safety engineering

EVALUATION OF ENVIRONMENTAL REPORTING PRACTICES IN THE CHEMICAL SECTOR: A COMPARATIVE ANALYSIS OF GRI DISCLOSURES

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Abstract
This paper evaluates the environmental reporting practices within the chemical industry through a comparative analysis based on Global Reporting Initiative (GRI) disclosures. As environmental accountability gains prominence, transparent reporting serves as a critical tool for stakeholder engagement and regulatory compliance. The study analyzes the sustainability reports of fifteen leading chemical companies over a five-year period, assessing disclosure quality, completeness, and consistency with GRI standards. Using a mixed methods approach combining content analysis and stakeholder feedback surveys, the research identifies prevalent reporting trends and gaps. The findings reveal heterogeneity in adoption levels of GRI indicators, with variations linked to company size, geographic location, and ownership structures. Furthermore, the study discusses challenges faced by chemical sector firms in balancing operational confidentiality and stakeholder transparency. It highlights the importance of enhancing reporting frameworks to better capture environmental impacts and drive performance improvements. Recommendations for policy makers and practitioners include fostering harmonization of standards and capacity building for robust environmental reporting.

Keywords: environmental reporting, chemical industry, GRI standards, sustainability disclosure, corporate social responsibility

EXPLORING THE ROLE OF FIT IN ENHANCING SERVICE INNOVATION PERFORMANCE: A NOVEL MODEL

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Abstract
This paper introduces a novel model investigating the role of organizational and market fit in enhancing service innovation performance. Service innovation is recognized as a key driver of firm competitiveness, but its success depends heavily on the alignment— or 'fit'— between innovation strategies, organizational capabilities, and customer expectations. Drawing upon empirical data collected from 120 service firms across various sectors in Taiwan, the study employs structural equation modeling to test hypotheses related to strategic fit dimensions and their impact on innovation outcomes. Results indicate that both internal fit (alignment between strategy and resources) and external fit (alignment with market demand) significantly influence the efficiency and effectiveness of service innovation processes. The model further elucidates how managerial practices and customer feedback mechanisms mediate this relationship. Implications suggest that companies should focus on tailored strategic planning and adaptive resource allocation to maximize innovation value. Limitations and suggestions for future research on longitudinal data and cross-cultural applications are discussed.

Keywords: service innovation, strategic fit, organizational alignment, customer expectations, innovation performance

ETHICS AND LEGAL CONSIDERATIONS IN THE DIGITAL WORKPLACE: NAVIGATING THE INTERSECTION OF TECHNOLOGY AND ETHICS

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Abstract
The digital workplace has transformed conventional employment landscapes, introducing complex ethical and legal challenges at the intersection of technology and organizational practice. This study explores the ethical dilemmas and regulatory frameworks relevant to digital work environments, focusing on issues such as data privacy, surveillance, digital misconduct, and employee autonomy. Through qualitative interviews with legal experts, ethics scholars, and organizational leaders from the UK and Australia, the research identifies prevailing concerns and diverse approaches to governance. The analysis highlights tensions between organizational control and individual rights, as well as the evolving nature of workplace norms in response to emerging technologies. The paper advocates for a multidisciplinary approach to policy development, emphasizing transparency, accountability, and inclusivity. It also proposes an ethical decision-making model tailored for digital workplace scenarios, supporting organizations in navigating legal compliance while fostering ethical cultures. Future directions include examining the impact of artificial intelligence and remote work trends on workplace ethics.

Keywords: digital workplace, workplace ethics, data privacy, legal compliance, organizational governance

ADVANCEMENTS IN REGIONAL MEDICAL IMAGING SYSTEMS: A COLLABORATIVE APPROACH

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Abstract
This paper presents recent technological advancements in regional medical imaging systems developed through collaborative efforts among leading Czech research institutions. Regional imaging, which focuses on specific body areas, has gained importance for precise diagnostics, minimally invasive interventions, and patient-specific treatment planning. The study reviews innovations including enhanced image resolution, integration of multimodal imaging techniques, and optimized data processing algorithms. Collaborative projects facilitated knowledge exchange and resource sharing, accelerating development cycles and improving clinical utility. Pilot clinical trials demonstrate improved diagnostic accuracy and workflow efficiency while maintaining patient safety. The research discusses challenges related to system interoperability, data standardization, and regulatory approval. Recommendations for future research address artificial intelligence integration, telemedicine compatibility, and cost-effective deployment strategies. The outcomes contribute to precision medicine and underline the value of interdisciplinary collaboration in medical technology innovation.

Keywords: medical imaging, regional imaging, diagnostic technology, interdisciplinary collaboration, precision medicine

INVESTIGATION OF RF PERMEABILITY FOR INTEGRATING USN INTO SOC STRUCTURES: A CASE STUDY

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Abstract
This study investigates the radio frequency (RF) permeability characteristics critical for integrating ultra-wideband sensor networks (USN) into system-on-chip (SoC) structures. The integration aims to enhance on-chip communication capabilities and enable efficient sensing applications within compact electronic devices. Using advanced electromagnetic simulation tools and experimental validation, the paper analyzes material properties, antenna design parameters, and signal propagation effects influencing RF permeability in SoC environments. A case study focusing on specific substrate materials representative of South Korean semiconductor technology was performed to evaluate integration feasibility. The findings provide design guidelines to optimize sensor performance while minimizing interference and power consumption. Potential applications span IoT devices, wearable electronics, and smart manufacturing systems. Challenges related to miniaturization and signal integrity are discussed, with proposals for future materials research and fabrication techniques.

Keywords: RF permeability, system-on-chip, ultra-wideband sensor networks, electromagnetic simulation, semiconductor integration

MITIGATING DAD ATTACKS IN MANET: A COMPREHENSIVE APPROACH

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Abstract
The security threat posed by Drop Attack Detection (DAD) attacks in Mobile Ad Hoc Networks (MANET) undermines the reliability and effectiveness of wireless communications. This paper proposes a comprehensive approach combining detection algorithms, trust management, and adaptive routing protocols to mitigate DAD attacks. The proposed solution enhances network resilience by identifying malicious nodes that intentionally drop packets and isolating them to maintain data integrity and quality of service. Extensive simulations under various network conditions demonstrate significant improvements in packet delivery ratio, throughput, and latency compared to existing methods. The framework incorporates machine learning techniques to adaptively refine detection accuracy and reduce false positives. Implementation considerations and potential impacts on energy consumption are also addressed. This research contributes to advancing secure communication protocols critical for MANET deployment in military, emergency, and IoT applications.

Keywords: MANET security, DAD attacks, trust management, adaptive routing, machine learning

ADAPTIVE HANDOFF DETECTION ALGORITHM UTILIZING RCST MOBILITY INFORMATION IN SATELLITE BEAM SYSTEMS

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Abstract
This paper proposes an adaptive handoff detection algorithm that leverages the mobility information of the RCST (Remote Control Satellite Terminal) in satellite beam systems to improve the reliability and efficiency of satellite communication networks. Handoff management is critical in satellite systems due to the dynamic nature of satellite beams and the mobility of user terminals. The proposed algorithm dynamically adapts to changes in terminal mobility patterns and beam configurations, aiming to minimize dropped connections and improve signal quality. By integrating real-time mobility data, the algorithm predicts when handoffs should be initiated to maintain continuous connectivity. Simulation results demonstrate significant improvements in handoff detection accuracy and network performance under varying mobility scenarios. Furthermore, the method reduces unnecessary handoffs, thereby decreasing signaling overhead and power consumption. This research contributes to the advancement of satellite communication technologies, particularly relevant for mobile users in broadband satellite systems, offering potential applications in telecommunication, maritime, and aeronautical connectivity environments.

Keywords: satellite communication, handoff detection, RCST mobility, adaptive algorithms, satellite beam systems

INTEGRATION OF VISION SYSTEM AND SIMULATION SOFTWARE FOR ENHANCED INDUSTRIAL ROBOT CAPABILITIES

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Abstract

This research addresses the integration of advanced vision systems with simulation software to enhance the capabilities and flexibility of industrial robots. Vision systems enable robots to perceive, interpret, and respond to dynamic environments, while simulation software facilitates design, testing, and optimization of robotic tasks before deployment. By combining these technologies, the study demonstrates improved accuracy in object identification, motion planning, and adaptive control in industrial applications. The integrated system allows for real-time feedback and adjustment, reducing downtime and increasing production efficiency. Experimental validation was conducted using robotic arms in assembly-line scenarios, showing a notable reduction in errors and enhanced adaptability to varying components and workflows. This approach supports industries aiming to implement Industry 4.0 principles by leveraging automation and smart manufacturing processes. The paper discusses the technical challenges in system integration and proposes future directions to incorporate machine learning techniques for further autonomy in robotics.

Keywords: industrial robots, vision systems, simulation software, automation, Industry 4.0

MITIGATING UNPLANNED EXTUBATION RISKS IN PSYCHIATRIC LONG-TERM CARE FACILITIES

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Abstract

Unplanned extubation (UE) poses a severe threat to patient safety in psychiatric long-term care facilities, where patients may display agitation or cognitive impairments increasing the risk of accidental or self-removed tubes. This study evaluates current clinical practices, environmental factors, and staff interventions aimed at minimizing UE incidents. Employing a mixed-methods approach comprising incident data analysis, staff interviews, and patient behavior monitoring across several long-term psychiatric wards, the research identifies key risk factors and effective mitigation strategies. Implementation of tailored protocols including enhanced monitoring, staff education, environmental modifications, and patient-centered care practices led to a significant reduction in UE rates. The study highlights the importance of multidisciplinary collaboration and ongoing staff training to manage risks effectively. Findings inform policy recommendations and contribute to improving the safety and quality of psychiatric long-term care settings globally.

Keywords: unplanned extubation, psychiatric care, patient safety, risk management, long-term care

ENHANCED INTELLIGENT TRANSPORTATION SYSTEMS FOR EFFICIENT BRT OPERATIONS

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Abstract

Bus Rapid Transit (BRT) systems represent a cost-effective and sustainable urban transportation solution but face operational challenges such as congestion, scheduling inefficiencies, and traffic signal delays. This paper presents an enhanced intelligent transportation system (ITS) framework designed to optimize BRT operations through real-time data analytics, vehicle-to-infrastructure communication, and adaptive traffic control strategies. The proposed ITS integrates GPS tracking, passenger load sensing, and advanced algorithms to streamline bus movements, reduce dwell times, and improve on-time performance. Implementation in a major metropolitan BRT corridor in Tehran demonstrated a marked increase in average speeds, reduced passenger wait times, and improved reliability. By leveraging emerging technologies and smart infrastructure, the system offers scalable solutions for urban transit agencies seeking to elevate BRT efficiency and commuter experience. Future work will explore integration with multimodal systems and autonomous vehicle frameworks.

Keywords: intelligent transportation systems, BRT operations, traffic management, adaptive control, urban transit

ENHANCING INFORMATION SECURITY IN E-LEARNING THROUGH HUMAN IDENTIFICATION TECHNIQUES

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Abstract

The rapid expansion of e-learning platforms has increased the demand for robust information security measures, particularly for authenticating users and safeguarding sensitive educational data. This paper investigates state-of-the-art human identification techniques, including biometric authentication, behavioral analytics, and multi-factor identification methods, that enhance security in e-learning environments. The study analyzes the effectiveness, accuracy, and usability of various approaches through empirical evaluation on popular e-learning platforms. Results indicate that combining biometric traits—such as fingerprint, facial recognition—with behavioral patterns like keystroke dynamics significantly reduces unauthorized access and identity fraud. The paper also discusses privacy concerns and proposes a security framework balancing robustness and user convenience for diverse educational settings. This research supports e-learning providers in developing secure, trustworthy systems that protect learners and educators alike.

Keywords: e-learning security, human identification, biometric authentication, cybersecurity, user verification

ANALYZING GREY INCIDENCE WITHIN THE MACROSCOPIC FRAMEWORK OF THE LOGISTICS SECTOR

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Abstract

Grey incidence analysis, a method for evaluating uncertain and incomplete information, has gained prominence in logistics for decision-making under complexity. This study examines grey incidence applications within the macroscopic logistics sector, focusing on supply chain performance, risk assessment, and strategic planning. Utilizing empirical data from major logistics firms in China, the research models relationships among key variables such as delivery time, cost efficiency, and environmental impact. Findings demonstrate grey incidence methods' effectiveness in revealing hidden correlations and guiding managerial decisions amid uncertainty. The paper also explores how grey system theory complements conventional statistical approaches and proposes integrated frameworks for comprehensive logistics analysis. Implications include improved resource allocation, enhanced resilience, and informed policy-making in dynamic market conditions.

Keywords: grey incidence analysis, logistics sector, supply chain management, decision-making, uncertainty

EXPLORING PERFORMANCE CHALLENGES OF DSRC RADIO TESTBEDS IN HIGH CHANNEL TRAFFIC SCENARIOS

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Abstract

Dedicated Short-Range Communications (DSRC) form a critical component of intelligent transportation systems, facilitating vehicle-to-vehicle and vehicle-to-infrastructure communication. This paper investigates the performance challenges of DSRC radio testbeds under high channel traffic conditions, which simulate real-world congested scenarios. The study evaluates communication latency, packet loss, and network throughput across varying traffic intensities using controlled experiments on multiple testbed configurations. Results reveal degradation in reliability and efficiency as channel traffic increases, posing constraints on safety-critical applications. The analysis identifies interference and resource contention as primary limiting factors. Proposed solutions include dynamic channel allocation, enhanced medium access control protocols, and interference mitigation techniques. These findings contribute to the development of resilient DSRC networks essential for future connected vehicle technologies and smart city infrastructures.

Keywords: DSRC, radio testbeds, channel traffic, intelligent transportation systems, network performance

EXAMINATION OF DELAYED PAYMENT ISSUES IN THE CONSTRUCTION SECTOR OF MALAYSIA

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Abstract

Delayed payments significantly impact project timelines, cost overruns, and contractor cash flow within Malaysia's construction sector. This study analyzes the prevalence, causes, and consequences of delayed payment issues through a comprehensive survey of construction companies and stakeholders. Key contributing factors identified include bureaucratic inefficiencies, contract ambiguities, and economic fluctuations. The research further assesses the effectiveness of existing legal frameworks and industry practices in addressing payment delays. Recommendations are provided to enhance contract management, improve stakeholder communication, and implement stricter enforcement mechanisms to mitigate payment risks. These findings aim to assist policymakers, contractors, and clients in fostering a more reliable and sustainable construction industry landscape in Malaysia.

Keywords: delayed payments, construction sector, Malaysia, contract management, project finance

ANALYSIS OF PAYMENT DELAYS AND THEIR IMPACT ON THE CONSTRUCTION INDUSTRY IN MALAYSIA

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Abstract

Payment delays have long been a persistent challenge in Malaysia's construction industry, adversely affecting both project completion and overall economic performance. This study provides a comprehensive analysis of the causes and consequences of payment delays among stakeholders, including contractors, subcontractors, and suppliers. Primary data were collected from structured interviews and surveys with industry professionals, complemented by the review of contractual case studies and secondary data from government reports. The research identifies key factors such as bureaucratic approval processes, financial mismanagement, late certification, and clients' cash flow issues. Delays were found to contribute to increased project costs, disputes, declining productivity, and, in extreme cases, contractual terminations. The negative impacts also extend to workforce morale and the country's attractiveness to foreign investment. Mitigation strategies discussed include the adoption of digital payment tracking systems, the enforcement of stricter regulatory frameworks, and improved contractual stipulations. These measures are found to reduce ambiguity in payment timelines and enhance trust among project participants. The study concludes that systemic changes, alongside sustained stakeholder collaboration, are necessary to foster a healthier construction payment environment in Malaysia.

Keywords: construction industry, payment delays, project management, Malaysia, stakeholder collaboration

EVALUATING THE PROGRESS OF MANUFACTURING CONTROL SYSTEMS IN LIBYA'S INDUSTRIAL SECTOR

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Abstract

The modernization of manufacturing control systems is critical for the sustainable growth of Libya's industrial sector, especially in the post-conflict recovery era. This research evaluates the current status, adoption level, and challenges faced in implementing advanced control systems across various Libyan industries. A mixed-methods approach comprising field observations, structured interviews, and analysis of operational data was employed. The findings reveal a gradual transition from manual and semi-automated systems to more sophisticated programmable logic controllers (PLCs) and real-time monitoring technologies. However, several obstacles hamper progress, including infrastructural deficits, shortages of technical expertise, and intermittent power supply. The study notes a positive correlation between the integration of modern control systems and improvements in productivity, safety, and resource optimization. Recommendations include targeted workforce training, public-private partnerships for technology investment, and leveraging international collaborations to accelerate digital transformation. The research illustrates how systemic support and capacity-building efforts are vital to strengthen Libya's manufacturing sector and foster resilience in the global marketplace.

Keywords: manufacturing control systems, industrial modernization, Libya, automation, digital transformation

COMPARATIVE STUDY OF ENVIRONMENTAL REPORTING IN THE CHEMICAL INDUSTRY: GRI STANDARDS APPLICATION

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Abstract

Environmental reporting is essential for enhancing transparency and sustainability in the chemical industry. This comparative study examines the application of the Global Reporting Initiative (GRI) standards among leading chemical companies across Europe, North America, and East Asia. Through a systematic review of publicly available reports and structured interviews with sustainability managers, the study evaluates reporting practices, the depth of environmental disclosures, and the integration of GRI standards into corporate strategies. Findings highlight variations in the comprehensiveness and quality of reporting across regions, with European firms demonstrating more advanced integration and robust stakeholder engagement. Factors influencing effective GRI adoption include regulatory requirements, public scrutiny, and organizational culture. Notably, firms that prioritize comprehensive GRI-based reporting show tangible benefits in risk management, investor confidence, and reputation. The paper concludes with recommendations for harmonizing reporting practices, promoting standardization, and encouraging industry-wide transparency by sharing best practices.

Keywords: environmental reporting, chemical industry, GRI standards, sustainability, corporate transparency

DESIGN AND BLAST RESISTANCE ANALYSIS OF SINGLE-STORY CONTROL FACILITIES IN PETROLEUM REFINERIES

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Abstract
With increasing safety concerns in petroleum refineries, blast resistance has become a crucial consideration for control facility design. This study presents a detailed analysis of the architectural and structural features that enhance the blast resilience of single-story control facilities. Utilizing finite element modeling and performance-based design simulations, the research evaluates different construction materials, structural geometries, and energy-dissipating systems under variable blast loads. Empirical data were gathered from recent refinery projects in the Middle East and North Africa. Results indicate that reinforced concrete with additional steel bracing and strategic layout planning significantly improves resistance to explosive forces. The study also investigates post-blast survivability of critical systems to ensure facility operability. Design recommendations include the use of flexible foundations, blast-proof glazing, and integrated early-warning systems. By synthesizing engineering best practices, the research supports safer and more robust infrastructure development in high-risk environments.

Keywords: blast resistance, control facilities, petroleum refinery, structural engineering, safety design

IMPACT OF BUSINESS MODEL INNOVATION ON CORPORATE VALUATION: A DYNAMIC FRAMEWORK

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Abstract

Business model innovation (BMI) serves as a critical driver of corporate competitiveness and value creation in the rapidly evolving global market. This paper introduces a dynamic conceptual framework linking business model redesign with shifts in firm valuation metrics. Through a longitudinal sample of publicly listed Chinese enterprises, the research analyzes quantitative data on market capitalization and accounting performance, alongside qualitative insights from executive interviews. The study finds that firms adopting BMI—such as platform-based operations, recurring revenue streams, and ecosystem partnerships—experience superior market valuation and sustained growth compared to traditional models. Key mediators of this impact include agility in resource reallocation, strategic alignment, and technological integration. The framework also addresses the feedback mechanism between investor perceptions and ongoing innovative adjustments. Recommendations focus on nurturing a culture of continuous innovation and aligning valuation assessment models to accurately capture the value derived from non-traditional business architectures.

Keywords: business model innovation, corporate valuation, dynamic framework, value creation, China

THE ROLE OF ALIGNMENT IN BOOSTING SERVICE INNOVATION PERFORMANCE: A NEW CONCEPTUAL MODEL

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Abstract

Effective alignment between organizational elements—strategy, structures, technologies, and human capital—is increasingly recognized as critical for driving service innovation performance. This paper proposes a new conceptual model illustrating how different types of alignment synergistically boost service innovation outcomes within Taiwanese service enterprises. Comprehensive case studies, coupled with survey data from 300 service-sector managers, underpin the analysis of alignment practices and their correlation with innovation metrics such as speed to market, service quality, and customer satisfaction. The model demonstrates that internal alignment fosters cross-functional collaboration and agility, while external alignment with customers and partners promotes responsiveness to emerging trends. The findings emphasize the importance of strategic coherence at all organizational levels, advocating tailored alignment strategies per innovation context. Policy and managerial implications include fostering interdepartmental coordination, investing in workforce training, and leveraging digital tools to enhance alignment and innovation capabilities.

Keywords: service innovation, organizational alignment, conceptual model, Taiwan, performance improvement

PROMOTING LOW-CARBON TRANSITION IN CHINA'S TRADITIONAL MANUFACTURING INDUSTRIES

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Abstract

Transitioning traditional manufacturing industries toward low-carbon operations is central to achieving China's ambitious climate targets. This paper evaluates policies, strategies, and technological innovations facilitating low-carbon transformation within major manufacturing clusters in China. Using case studies and policy review, the study highlights best practices in energy efficiency, renewable integration, and process optimization. Regulatory incentives, financial mechanisms, and public-private collaborations are shown to be pivotal in accelerating decarbonization. The research identifies barriers such as capital constraints, technology adoption rates, and knowledge gaps, while proposing policy recommendations to address these challenges. The findings suggest that coordinated efforts at both enterprise and government levels are fundamental to successful sector-wide transformation. The paper concludes by discussing implications for national policy, industry competitiveness, and international climate cooperation, underscoring the need for continuous innovation and systemic change.

Keywords: low-carbon transition, manufacturing, China, climate policy, industrial innovation

ASSESSING THE EFFECTIVENESS OF INTEGRATED TQM AND LEAN MANUFACTURING IN MALAYSIAN AUTOMOTIVE INDUSTRY

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Abstract

This study assesses the combined effect of Total Quality Management (TQM) and Lean Manufacturing practices on operational performance within Malaysia's automotive industry. Through a multi-case qualitative and quantitative analysis, data were collected from leading automotive manufacturers using surveys, in-depth interviews, and performance reports. The research explores key indicators such as defect rates, production cycle times, cost efficiencies, and employee engagement. Findings reveal that organizations implementing both TQM and Lean methodologies achieve superior results in process standardization, waste reduction, and continuous improvement culture. Synergistic benefits include enhanced customer satisfaction and increased market share. The study discusses implementation challenges such as resistance to change and resource limitations and suggests comprehensive training and leadership support as critical success factors. Recommendations for practitioners include adopting incremental integration strategies and benchmarking best practices.

Keywords: TQM, lean manufacturing, automotive industry, Malaysia, operational performance

THE EFFECTS OF MERGERS AND ACQUISITIONS ON CONSUMER WELFARE: EVIDENCE FROM INDIA'S MANUFACTURING SECTOR

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Abstract

Mergers and acquisitions (M&A) significantly shape market structures and consumer welfare, particularly in emerging economies like India. This research investigates the effects of M&A activities on product prices, quality, and availability in India's manufacturing sector using panel data analysis and consumer surveys. The results indicate mixed outcomes: while M&As enhance operational efficiencies and innovation, they sometimes lead to reduced competition and price increases. The paper reveals sector-specific differences, pointing to greater consumer gains in industries with robust regulatory oversight and intense rivalry. The study also examines post-merger integration challenges, including workforce consolidation and management of diverse brands. Recommendations advocate for balanced M&A policies, strong competition law enforcement, and enhanced transparency in deal evaluation to safeguard consumer interests while promoting healthy industry growth.

Keywords: mergers and acquisitions, consumer welfare, manufacturing sector, India, competition policy

RELATIONSHIP BETWEEN FINANCIAL MARKET STRUCTURE AND MARKET INDICES IN TEHRAN STOCK EXCHANGE

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Abstract

Understanding the interplay between financial market structure and the behavior of market indices is vital for the development and stability of capital markets. This study focuses on the Tehran Stock Exchange (TSE), employing econometric modeling and network analysis to examine the relationship between market structural attributes—such as market segmentation, liquidity, and investor concentration—and the performance of major indices. Data from the past decade reveals that periods of increased market complexity and diversification correspond with greater index stability and resilience to external shocks. Conversely, concentration of market power and limited free float heighten volatility and susceptibility to speculation. The research underscores the importance of regulatory reforms aimed at broadening market participation and enhancing transparency. Implications for investors, regulators, and policymakers are discussed, with recommendations to foster more robust and inclusive market ecosystems in Iran.

Keywords: financial market structure, market indices, Tehran Stock Exchange, Iran, econometric analysis

ASSESSING THE QUALITY STANDARDS OF HOSPITAL PHARMACIES IN THERAPEUTIC CENTERS ASSOCIATED WITH KERMANSHAH UNIVERSITY OF MEDICAL SCIENCES, IRAN

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Abstract
This study evaluates the quality standards of hospital pharmacies within therapeutic centers affiliated with Kermanshah University of Medical Sciences in Iran. Hospital pharmacies play a crucial role in ensuring patient safety, effective medication management, and the overall quality of healthcare delivery. Using a cross-sectional descriptive design, the research assessed organizational structures, facilities, personnel qualifications, drug storage, dispensing accuracy, and adherence to established pharmaceutical standards. Data collection was conducted through standardized checklists grounded in internationally recognized quality assurance frameworks, including those from the International Pharmaceutical Federation and other accreditation bodies. Analysis revealed variability in compliance with quality standards, highlighting significant strengths in equipment availability and pharmacist expertise alongside areas needing improvement, particularly in safety protocols and documentation practices. The findings underscore the necessity for continuous monitoring and enhancement of pharmacy services to align with evolving best practices. Recommendations include targeted staff training, implementation of automated systems, and strengthened regulatory oversight to promote patient-centered pharmaceutical care. This study contributes to the ongoing efforts to elevate pharmacy practice standards in Iran, fostering safer and more effective therapeutic outcomes in hospital settings.

Keywords: hospital pharmacy quality, pharmaceutical care, healthcare standards, quality assurance, medication safety

OPTIMIZING VISIBLE LIGHT COMMUNICATION SYSTEMS THROUGH NATURAL LIGHT INTEGRATION

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Abstract
Visible Light Communication (VLC) systems offer promising alternatives to traditional wireless technologies, leveraging the visible spectrum for high-speed, secure data transmission. This paper explores the integration of natural light sources in optimizing VLC system performance, aiming to improve signal quality and energy efficiency in indoor environments. Through a series of experiments and simulations, the research investigates the modulation techniques, interference mitigation, and adaptive channel modeling necessary for effective utilization of ambient sunlight alongside artificial light sources. Results demonstrate enhanced system robustness, increased data throughput, and reduced power consumption when natural light is strategically incorporated. Challenges such as ambient light variability and photodetector sensitivity are addressed by deploying advanced filtering algorithms and adaptive thresholding mechanisms. These findings present a significant step towards developing sustainable and efficient VLC infrastructures suitable for smart building applications and next-generation wireless networks. The study's interdisciplinary approach bridges optical communication theory and practical engineering, providing a comprehensive framework for future VLC system designs integrating natural illumination.

Keywords: visible light communication, natural light integration, optical wireless, signal optimization, smart environments

INTEGRATING WIRELESS BODY AREA NETWORKS WITH WEB SERVICES: REVOLUTIONIZING UBIQUITOUS HEALTHCARE PROVISIONING THROUGH ARCHITECTURE

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Abstract

Wireless Body Area Networks (WBANs) represent a transformative technology for ubiquitous healthcare, enabling continuous monitoring of patients' physiological parameters. This paper proposes an architectural framework integrating WBANs with web services to enhance healthcare delivery, data interoperability, and real-time patient management. The integrated system facilitates seamless data exchange between biomedical sensors and healthcare providers through standardized web protocols, ensuring scalability, security, and accessibility across diverse platforms. System simulations reveal improved responsiveness and efficient data handling, supporting diagnostic and therapeutic decision-making processes. Emphasizing modular design, the architecture addresses challenges related to bandwidth limitations, energy consumption, and data privacy. This approach aligns with the global trend towards digital health ecosystems, offering potential for remote patient monitoring, chronic disease management, and emergency response optimization. The framework's adaptability encourages further development and integration with emerging technologies, contributing to smarter, patient-centered healthcare infrastructures worldwide.

Keywords: wireless body area networks, web services, healthcare architecture, patient monitoring, digital health

DYNAMIC BRAIN WAVE ACQUISITION AND PSYCHOACOUSTIC ANALYSIS IN REAL TIME

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Abstract
This research focuses on the development of a real-time system for dynamic acquisition of brain wave signals and psychoacoustic analysis, aiming to understand neural responses to auditory stimuli. Using electroencephalography (EEG) coupled with advanced signal processing techniques, the study examines temporal and spectral brain wave patterns induced by controlled sound environments. The system enables simultaneous neural signal capture and psychoacoustic parameter extraction, providing insights into cognitive and perceptual auditory processes. Applications extend to clinical diagnostics, auditory rehabilitation, and brain–computer interface technologies. Results demonstrate high-fidelity signal acquisition with minimal latency, allowing detailed investigation of auditory evoked potentials and sound perception thresholds. The integration of psychoacoustic metrics enhances interpretability and facilitates personalized auditory therapy approaches. This interdisciplinary effort underscores the potential of combining neuroscience and acoustic engineering for innovative clinical tools and improved understanding of human auditory cognition.

Keywords: brain wave acquisition, psychoacoustics, EEG, real-time analysis, auditory neuroscience

ENHANCING COMBAT EFFECTIVENESS IN NEW GENERATION FIGHTER PLANES THROUGH HUMAN FACTORS CONSIDERATIONS

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Abstract

The modernization of fighter aircraft introduces advanced technologies that necessitate a comprehensive understanding of human factors to maximize combat effectiveness. This paper reviews critical human factors considerations—including cockpit design, cognitive workload, situational awareness, and human-machine interface—in the development of next-generation fighter planes. Emphasizing ergonomic principles and pilot-centered design, the study assesses how these elements impact decision-making, reaction times, and mission success. Through simulations and pilot feedback, strategies are proposed to mitigate human error, optimize control layouts, and support effective information processing under high-stress conditions. The findings advocate for integrating human factors engineering early in the aircraft design process to enhance safety, operational efficiency, and pilot performance. This research contributes to aerospace engineering and military human factors disciplines by highlighting best practices essential for the evolving challenges of aerial combat.

Keywords: human factors, fighter planes, combat effectiveness, cockpit design, aerospace engineering

CONSTRUCTING AN INTEGRATED RELATIONAL DATABASE UTILIZING SWISS NUTRITION NATIONAL SURVEY AND HEALTH DATASETS FOR DATA MINING OBJECTIVES

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Abstract

This study presents the development of an integrated relational database combining data from the Swiss Nutrition National Survey and various health datasets to support advanced data mining and epidemiological research. The database architecture was designed to enable efficient querying, linkage, and analysis of nutritional and health parameters, facilitating the identification of patterns and correlations related to dietary behaviors and health outcomes. Challenges in data standardization, privacy, and interoperability were addressed through rigorous schema design and anonymization techniques. Initial data mining applications demonstrate the system's capacity to reveal risk factors for chronic diseases and inform public health policies. The integrated database serves as a valuable resource for researchers and healthcare professionals, promoting evidence-based nutritional interventions and improving population health monitoring. Future enhancements include real-time data updates and expansion to other health domains.

Keywords: integrated database, nutrition survey, data mining, health informatics, epidemiology

CAN EEG TESTING AID IN BRAIN TUMOR IDENTIFICATION?

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Abstract
Electroencephalography (EEG) is traditionally used for diagnosing neurological disorders but its potential role in brain tumor identification requires further investigation. This paper evaluates the utility of EEG testing as a non-invasive, cost-effective adjunct diagnostic tool for detecting brain tumors. Through the analysis of EEG wave abnormalities in tumor patients compared to control subjects, the study examines characteristic patterns such as focal slowing, epileptiform discharges, and asymmetries correlated with tumor location and size. Complemented by advanced signal processing techniques, EEG shows promise in aiding early detection and monitoring tumor progression. Limitations include sensitivity to tumor type and depth, necessitating multimodal imaging approaches for confirmation. The findings support incorporating EEG in diagnostic workflows, especially in resource-limited settings, to improve clinical decision-making and patient outcomes. Further research is advocated to refine algorithms and validate clinical protocols.

Keywords: EEG, brain tumor detection, neurological diagnostics, signal processing, neurophysiology

EXAMINING THE HAZARDS OF INADEQUATE MEDICAL WASTE MANAGEMENT PRACTICES ON HUMAN HEALTH AND THE ENVIRONMENT: A REVIEW OF LITERATURE

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Abstract
This literature review examines the environmental and public health hazards associated with inadequate medical waste management practices globally, with an emphasis on developing countries. Improper segregation, treatment, and disposal of hazardous medical waste can lead to soil and water contamination, air pollution, and increased transmission of infectious diseases among healthcare workers and surrounding communities. The review synthesizes findings on chemical and biological risks, including exposure to toxic substances, sharps injuries, and pathogen dissemination. It highlights systemic challenges such as lack of infrastructure, inadequate training, and policy enforcement gaps. The paper underscores the urgency of adopting sustainable and compliant waste management protocols, advocating for regulatory reforms, capacity building, and community awareness initiatives. Improving medical waste handling practices is crucial to mitigating risks and protecting ecosystem and human health, aligning with global environmental and health goals.

Keywords: medical waste management, environmental hazards, public health, infectious risk, sustainable disposal

INFLUENCE OF ELEMENTAL INTERACTIONS ON VOLATILITY IN FLUIDIZED-BED COMBUSTION: A STUDY OF METAL IMPACTS IN VARIOUS COAL GRADES

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Abstract

This study explores the complex influence of elemental interactions on the volatility behavior of metals during fluidized-bed combustion (FBC) processes applied to various coal grades. Volatility of metallic elements significantly affects slag formation, emission control, and the overall efficiency of thermal power plants. The research focuses on key metals such as sodium, potassium, calcium, iron, and aluminum, analyzing how their elemental interactions alter volatility profiles under FBC conditions. A combination of experimental combustion tests and advanced chemical speciation modeling techniques was employed across low-rank and high-rank coals with varying ash contents. Results reveal that synergistic and antagonistic elemental interactions modify the volatilization patterns, leading to either enhanced or reduced metal emissions depending on coal type and combustion parameters. The study further identifies critical temperature thresholds at which metal volatility sharply increases, impacting the scaling tendencies in boilers. Findings emphasize the importance of considering multi-element effects rather than isolated metal behavior to predict and control emission characteristics. This work contributes to improved combustion strategies, environmental compliance, and operational safety in thermal power generation using fluidized-bed technology. Future research directions include integration of real-time monitoring systems and kinetic modeling to better forecast volatility under varying operational scenarios.

Keywords: fluidized-bed combustion, metal volatility, elemental interactions, coal grades, thermal power plants

EFFECTS OF MICROWAVE IRRADIATION ON THE MECHANICAL AND CHEMICAL STABILITY OF SILICA-BASED OPTICAL FIBERS

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Abstract

This paper investigates the effects of microwave irradiation on the mechanical integrity and chemical stability of silica-based optical fibers, which are critical components in telecommunication and sensing applications. Microwave treatment is considered a promising method for enhancing fiber performance via controlled structural modifications. Experimental analysis involved subjecting standard single-mode silica fibers to varying microwave power levels and exposure durations, followed by assessments of tensile strength, refractive index changes, and surface chemistry using spectroscopy and microscopy techniques. Results demonstrate that moderate microwave irradiation can improve mechanical strength through densification of the silica matrix, while excessive exposure induces microstructural defects and increased hydroxyl group formation, leading to chemical degradation. The study also examines mechanisms of microwave-fiber interaction, highlighting energy absorption, localized heating, and induced structural rearrangements. The findings provide crucial insights into optimizing microwave processing parameters to enhance fiber durability and performance in harsh environments. This research advances the development of novel, microwave-assisted fabrication and post-processing methods for optical fiber technologies. Further work is suggested to evaluate long-term stability and dynamic environmental responses.

Keywords: microwave irradiation, optical fibers, silica, mechanical stability, chemical durability

SIMULATION OF CASTING GEOMETRY EFFECTS ON HOT TEARING AND RESIDUAL STRESS IN PRECISION CASTING PROCESSES

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Abstract

Hot tearing and residual stress are critical defects impacting the quality and performance of precision-cast components. This study employs numerical simulation to analyze the effects of casting geometry on the formation of hot tears and residual stresses during the solidification process. The investigation utilizes finite element modeling (FEM) incorporating thermomechanical coupling and phase-change kinetics to replicate thermal gradients and mechanical constraints in typical aluminum and magnesium alloy castings. Various geometric features, including thickness variations, fillets, and sharp corners, were simulated to identify stress concentration zones and vulnerability to cracking. Simulation outcomes reveal that complex geometries with abrupt transitions significantly increase risk of hot tearing due to localized strain accumulation and uneven cooling rates. Residual stress distributions indicate persistent internal stresses that may compromise dimensional stability and fatigue life. The study further proposes geometric design modifications and process parameter adjustments to mitigate these defects. Results offer valuable guidelines for foundry engineers aiming to enhance casting reliability and reduce costly rejects in high-precision manufacturing. Future research includes experimental validation and integration with process control systems for optimized casting design.

Keywords: hot tearing, residual stress, precision casting, finite element simulation, casting geometry

COMPARATIVE STUDY OF MEDIA INFLUENCES IN EXPLOSIVE FORMING OF CYLINDRICAL SHELLS

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Abstract

This research presents a comparative analysis of different media used in the explosive forming process of cylindrical metal shells, focusing on the influence of these media on forming quality, workpiece integrity, and process efficiency. Explosive forming is a high-strain-rate metal shaping technique utilized to achieve complex geometries with minimal tooling. The study evaluates three forming media: water, air, and inert gases, under controlled explosive loadings and process parameters. Experimental setups included real-time measurements of pressure waves, deformation velocities, and resulting shell geometries, complemented by metallurgical analysis of formed specimens. Findings indicate that water as a medium provides superior energy transfer efficiency and minimizes forming defects such as wrinkling and cracking, while air medium leads to greater surface roughness and uneven deformation. Inert gases offer intermediate characteristics but present challenges with reproducibility. The study discusses media-dependent mechanisms affecting energy dissipation and stress wave propagation. Results contribute to optimizing forming setup selection tailored to specific material and dimensional requirements, improving product quality and process safety. Further work involves exploring composite materials and scale-up considerations for industrial applications.

Keywords: explosive forming, forming media, cylindrical shells, metal forming, energy transfer

IMPACT OF SURFACE PREPARATION TECHNIQUES ON NANOCRYSTALLINE DIAMOND FILM GROWTH ON SILICON NITRIDE SUBSTRATES

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Abstract

The quality and properties of nanocrystalline diamond (NCD) films grown on silicon nitride substrates are highly dependent on the initial surface preparation. This study systematically evaluates the effects of various surface conditioning techniques, including chemical etching, plasma treatment, and mechanical polishing, on the nucleation density, adhesion strength, and morphological uniformity of NCD films deposited by microwave plasma chemical vapor deposition (MPCVD). Characterization methods such as scanning electron microscopy (SEM), Raman spectroscopy, and adhesion tests were employed. Results reveal that plasma treatment significantly enhances nucleation density and film uniformity, while chemical etching improves adhesion by creating favorable surface chemistry. Mechanical polishing reduces surface roughness but may cause subsurface damage, negatively impacting film quality. The synergy between surface preparation and deposition parameters is discussed to optimize film growth for electronic and mechanical applications. This comprehensive investigation provides guidelines for tailoring substrate preparation to achieve high-performance diamond coatings suitable for wear-resistant and thermal management devices. Future research may probe atomic-level surface modifications and scalability.

Keywords: nanocrystalline diamond, surface preparation, silicon nitride, film growth, chemical vapor deposition

COMPUTATIONAL MODELING OF PLASTIC DEFORMATION IN CLAY UNDER COMPRESSIVE LOADS

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Abstract
Understanding plastic deformation behavior of clay under compressive loads is essential for geotechnical engineering applications such as foundation design and earth structure stability. This study presents a comprehensive computational model simulating the elasto-plastic response of clay soils subjected to uni-axial and multi-axial compressive stresses. The model integrates constitutive laws based on critical state soil mechanics and captures strain hardening-softening behavior through advanced numerical techniques using the finite element method (FEM). Calibration and validation were conducted using experimental data from laboratory compression tests on kaolin and montmorillonite clays. Predicted stress-strain curves, volumetric changes, and failure modes exhibit good correlation with observed results. Sensitivity analyses highlight the influence of moisture content, loading rate, and initial density on deformation characteristics. The model serves as a predictive tool for assessing soil behavior under various load conditions, aiding in design optimization and risk assessment in civil engineering projects. Continued development aims to include effects of time-dependent creep and cyclic loading relevant for earthquake engineering.

Keywords: plastic deformation, clay, compressive load, computational modeling, geotechnical engineering

OPTIMAL TIMING FOR COLOSTRUM IMMUNOGLOBULIN ABSORPTION IN NEWBORN CAMELS: CORRELATION WITH CORTISOL AND THYROXIN LEVELS

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Abstract

This study investigates the optimal timing for the absorption of colostrum immunoglobulins in newborn camels and examines its correlation with circulating cortisol and thyroxin hormone levels. Given the critical role of passive immunity in neonatal survival and health, understanding the dynamics of immunoglobulin uptake is essential for improving camel calf management. Using a sample of 60 camel calves, we monitored colostrum intake, serum immunoglobulin G concentration, cortisol, and thyroxin levels during the first 24 hours postpartum. Results showed that the highest efficiency of immunoglobulin absorption occurred within the first 6 hours after birth, coinciding with peak cortisol concentrations, suggesting a physiological window optimal for passive immunity transfer. Thyroxin levels exhibited a gradual increase but were not directly correlated with immunoglobulin absorption. The findings emphasize the importance of timely colostrum feeding to enhance neonatal immunity and propose cortisol as a biomarker to assess calf readiness for nutrient and antibody uptake. This research contributes to veterinary neonatal care in arid and semi-arid regions where camels hold economic and cultural significance. Recommendations for management practices include immediate postnatal colostrum provision and monitoring hormone profiles to optimize calf health outcomes and reduce mortality rates. Further research may explore the mechanistic role of endocrine factors in intestinal permeability for immunoglobulin transfer in camelids.

Keywords: colostrum absorption, immunoglobulins, newborn camels, cortisol, thyroxin, passive immunity

DEVELOPMENTAL CHANGES IN THE DUODENAL MUCOSA AND SUBMUCOSA OF RABBITS

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Abstract

This study examines morphological and histological developmental changes in the duodenal mucosa and submucosa of rabbits during postnatal growth. Using microscopic analysis of specimens collected at various ages from neonatal to adult stages, we characterized structural adaptations that support digestive functionality and nutrient absorption. Results indicated that villus height and crypt depth increased significantly with age, reflecting enhanced absorptive capacity. Submucosal connective tissue showed increased vascularization and lymphoid tissue aggregation correlating with immune system maturation in the gut. Changes in mucosal epithelial cell types, including goblet cells, were also documented, indicating evolving protective and secretory roles. These developmental modifications are crucial for understanding gastrointestinal physiology and can inform clinical approaches to digestive disorders in lagomorphs and other mammals. The study highlights key morphological markers of intestinal maturity that could serve as reference points for veterinary research and animal husbandry practices aimed at optimizing health and growth in rabbits. Further investigation into molecular signaling pathways driving these structural changes is warranted.

Keywords: duodenum development, mucosa, submucosa, rabbits, histology, postnatal growth

EVALUATION OF TUBERCULIN, TETANUS IMMUNOGLOBULIN, AND DPT VACCINE AS MITOGENS IN AVIAN T-LYMPHOCYTE PROLIFERATION

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Abstract

This research evaluates the mitogenic effects of tuberculin, tetanus immunoglobulin, and the diphtheria-pertussis-tetanus (DPT) vaccine on T-lymphocyte proliferation in avian species. Using in vitro assays, lymphocytes isolated from healthy chickens were exposed to these antigens to assess cellular activation, measured via proliferation indices. The study revealed that tuberculin and DPT vaccine significantly stimulated T-cell proliferation, suggesting strong immunogenic properties and potential use in avian immunomodulation. Tetanus immunoglobulin elicited a moderate response. These findings have implications for vaccine development and immunotherapy in poultry, particularly in enhancing cell-mediated immunity against infectious diseases. The results contribute to understanding avian immune responsiveness to common immunogens and can guide improved vaccination strategies in the poultry industry. Further studies are recommended to assess the in vivo efficacy and duration of immune responses elicited by these mitogens.

Keywords: T-lymphocyte proliferation, tuberculin, tetanus immunoglobulin, DPT vaccine, avian immunology, mitogens

ASSESSMENT OF POTATO VARIETIES FOR CHIPS AND FRENCH FRIES PRODUCTION USING MICROWAVE-VACUUM DRYING TECHNOLOGY

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Abstract

This study assesses different potato varieties for their suitability in producing chips and French fries using microwave-vacuum drying technology. The research focused on evaluating physicochemical properties such as moisture content, texture, color, and oil absorption of processed potato products. Five potato varieties commonly cultivated in Latvia were analyzed for their drying kinetics and sensory characteristics post-processing. Results demonstrated that specific varieties retained favorable quality attributes with reduced drying time and lower oil uptake, indicating improved health and economic benefits. Microwave-vacuum drying proved effective in maintaining product texture and color while enhancing shelf life compared to conventional frying methods. The findings support selecting optimal potato cultivars tailored to advanced drying technologies for healthier snack production and industry applications. This work provides valuable insights for potato breeders, food technologists, and manufacturers aiming to innovate processing techniques for high-quality potato-based products. Future studies may explore scaling and consumer acceptance of these products.

Keywords: potato varieties, microwave-vacuum drying, chips, French fries, food technology, sensory evaluation

SALT TOLERANCE IN TISSUE-CULTURED DATE PALM VARIETIES UNDER CONTROLLED ENVIRONMENTAL CONDITIONS

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Abstract

This investigation evaluates the salt tolerance of tissue-cultured date palm varieties grown under controlled environmental conditions. With increasing soil salinity threatening date palm cultivation in arid regions, identifying salt-resistant varieties is crucial for sustainable agriculture. Tissue culture techniques provided uniform plantlets of three date palm varieties that were subjected to varying sodium chloride concentrations. Physiological parameters including growth rate, chlorophyll content, electrolyte leakage, and proline accumulation were measured to assess stress responses. Results indicated significant varietal differences in salt tolerance, with some cultivars maintaining improved growth and physiological stability at elevated salinity levels. These findings facilitate the selection of superior genotypes for cultivation in saline soils and contribute to breeding programs focused on abiotic stress resistance. The study reinforces the utility of tissue culture as a tool for rapid screening and propagation of salt-tolerant date palms, ultimately supporting food security and agricultural resilience in salt-affected areas.

Keywords: salt tolerance, date palm, tissue culture, salinity stress, abiotic stress, plant physiology

IMPACT OF COPPER AND ZINC DEFICIENCY ON MILK YIELD IN INTENSIVELY MANAGED DAIRY CATTLE: A STUDY FROM NORTHEASTERN ROMANIA

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Abstract
This study evaluates the effects of copper and zinc deficiencies on milk yield in intensively managed dairy cattle herds located in northeastern Romania. Trace element deficiencies pose significant challenges to dairy productivity and animal health. Twelve dairy farms were assessed for dietary mineral content, blood serum copper and zinc concentrations, and corresponding milk production data across lactation stages. Results highlight a clear association between suboptimal copper and zinc levels and decreased milk yields, along with signs of compromised immune function and metabolic disorders. Supplementation strategies tailored to herd mineral status were proposed to rectify deficiencies and improve productivity. The study underscores the importance of proper trace mineral nutrition in maintaining dairy herd health and maximizing lactation performance. Findings serve as a guideline for veterinarians and dairy nutritionists in managing mineral imbalances in intensive dairy systems, contributing to economic sustainability and animal welfare.

Keywords: copper deficiency, zinc deficiency, milk yield, dairy cattle, trace minerals, animal nutrition

EFFECTS OF OVERFEEDING ON PRODUCTIVITY, FOIE GRAS QUALITY, BLOOD PARAMETERS, AND MORTALITY IN TWO BREEDS OF DUCKS

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Abstract

This research investigates the impact of overfeeding on productivity, foie gras quality, blood biochemical parameters, and mortality rates in two duck breeds commonly used in foie gras production. The study compares metabolic, physiological, and quality traits between breeds fed ad libitum and those subjected to overfeeding regimens. Liver weight, lipid deposition, and behavioral changes were monitored alongside blood markers for liver function and stress. Results confirmed that overfeeding significantly increased liver fat accumulation and improved foie gras quality but also raised mortality risk and altered blood parameters indicative of metabolic stress. Breed differences in response to overfeeding were observed, suggesting genetic factors influence susceptibility to negative health outcomes. The findings provide insights for optimizing feeding protocols balancing production efficiency and animal welfare in foie gras farms. Recommendations emphasize careful monitoring of physiological indicators to mitigate health risks while maintaining product standards. Further studies could explore nutritional and genetic interventions to reduce adverse effects of overfeeding in duck production.

Keywords: overfeeding, foie gras, duck breeds, productivity, blood parameters, animal welfare

USING AQUATIC ORGANISMS AS BIOINDICATORS FOR WATER POLLUTION: A CASE STUDY IN LAKE VICTORIA AND CONTROLLED LABORATORY EXPERIMENTS

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Abstract

This study explores the role of aquatic organisms as sensitive bioindicators for assessing water pollution levels in Lake Victoria, one of Africa's largest freshwater lakes experiencing significant ecological stress. Due to increasing anthropogenic activities, including industrial effluents, agricultural runoff, and urbanization, the water quality of Lake Victoria has deteriorated, impacting biodiversity and ecosystem health. Employing a combination of field surveys and controlled laboratory experiments, this research evaluates how different aquatic taxa respond to varying pollution levels. Species diversity, abundance, and community structure of fish and macroinvertebrates were monitored along multiple sites around the lake, reflecting gradients from relatively pristine rural locations to heavily impacted urban wetlands. Laboratory tests were conducted to determine tolerance thresholds of selected indicator species to specific pollutants under controlled conditions. Results demonstrate that certain aquatic organisms, particularly benthic macroinvertebrates and select fish species, exhibit distinct responses to pollution stressors, making them reliable indicators of ecosystem health. The study further identifies shifts in species composition and reductions in diversity correlated to increasing pollutant concentrations, with eutrophication and heavy metals being major concerns. The findings emphasize the utility of bioindicator species for regular monitoring programs aimed at ecological risk assessment and management. Recommendations include incorporation of bioindicator-based frameworks into environmental policies and community-led conservation efforts to restore Lake Victoria's water quality and biodiversity. This integrative approach advances understanding of pollution impacts on freshwater ecosystems and supports sustainable water resource management in the region.

Keywords: bioindicators, water pollution, Lake Victoria, aquatic ecosystems, environmental assessment

USING AQUATIC ORGANISMS AS BIOINDICATORS FOR WATER POLLUTION: A CASE STUDY IN LAKE VICTORIA AND CONTROLLED LABORATORY EXPERIMENTS

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Abstract

This research paper explores the utilization of aquatic organisms as bioindicators to assess water pollution in Lake Victoria, one of the world's largest freshwater bodies. Freshwater ecosystems are particularly vulnerable to the impacts of anthropogenic pollution, which affects biodiversity and water quality. Aquatic bioindicators, such as fish, benthic macroinvertebrates, and plankton, serve as sensitive indicators reflecting changes in the lake's environmental conditions. The study incorporates both field assessments across various sites in Lake Victoria, subjected to varying levels of anthropogenic impact, and controlled laboratory experiments designed to determine organismal responses to specific pollutants. Key findings reveal altered species diversity and abundance correlating with pollution gradients, with sensitive species diminishing and tolerant species proliferating in more polluted areas. The laboratory experiments complement these observations by confirming physiological and behavioral stress markers in indicator species exposed to contaminants such as heavy metals and nutrient enrichment. The study underlines the importance of integrated biomonitoring programs for sustainable management of freshwater resources. Furthermore, results emphasize the need for regulatory enforcement combined with community awareness to mitigate pollution inputs. The findings contribute to ecological risk assessment and support the use of bioindicator organisms as cost-effective and practical tools in environmental monitoring frameworks, especially in rapidly urbanizing regions vulnerable to water quality degradation. This approach is critical for informing policy decisions and conservation strategies aiming to preserve Lake Victoria's ecological integrity and the livelihoods depending on its waters.

Keywords: aquatic bioindicators, water pollution, Lake Victoria, freshwater ecology, environmental monitoring

EVALUATION OF HERBICIDE EFFICACY ON WILD RYEGRASS (ELYMUS REPENS) AT DIFFERENT GROWTH PHASES WITH NITROGEN SUPPLEMENTATION

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Abstract

This study systematically investigates the effectiveness of various herbicides in controlling wild ryegrass (Elymus repens) when applied at distinct growth phases and under conditions of supplemental nitrogen. Wild ryegrass poses a significant management challenge for cereal and forage crop producers, as it develops resistance and reduces yield through competitive nutrient uptake. Experimental field trials were conducted in Denmark over two consecutive growing seasons. Herbicides representing different modes of action were applied at early, mid, and late vegetative growth phases, both with and without nitrogen supplementation. The research evaluated weed biomass reduction, herbicide phytotoxicity, ryegrass regrowth potential, and impacts on crop health. Results indicated that the timing of herbicide application was critical, with early-phase treatments showing the highest efficacy and lowest rates of regrowth. Nitrogen supplementation, while promoting crop vigor, also influenced herbicide efficacy by altering plant metabolic activity and potentially accelerating recovery from chemical treatments. In certain combinations, nitrogen reduced the effectiveness of specific herbicides through enhanced herbicide metabolism in ryegrass. The findings highlight the complexity of integrated weed management and the necessity of aligning fertilization and herbicide application strategies. Recommendations include precise timing based on ryegrass phenology and careful consideration of nitrogen scheduling to optimize both weed suppression and overall crop productivity. These insights provide valuable guidance for agronomists and farmers aiming to refine weed control protocols and minimize resistance development in wild ryegrass populations.

Keywords: herbicide efficacy, wild ryegrass, nitrogen supplementation, weed management, crop productivity

POTENTIAL OF SALVIA OFFICINALIS FOR PHYTOREMEDIATION OF HEAVY METAL-CONTAMINATED SOILS: AN EXPERIMENTAL STUDY

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Abstract

This experimental study examines the capacity of Salvia officinalis (sage) to remediate soils contaminated with heavy metals such as lead, cadmium, and zinc. With rapid industrialization and the resulting soil pollution, there is a pressing need for cost-effective and sustainable remediation methods. The work involved growing Salvia officinalis in artificially contaminated soils under controlled greenhouse conditions, monitoring heavy metal uptake, accumulation patterns in roots and shoots, and resulting changes in plant physiology. Analytical results demonstrated that sage possesses a moderate to high tolerance against several toxic metals and is capable of phytoextracting substantial quantities, especially zinc and cadmium. Plant growth performance, chlorophyll activity, and antioxidant enzyme responses were measured as indicators of physiological stress and adaptation. Furthermore, the study evaluated the risks and benefits of utilizing sage in phytoremediation scenarios, including considerations for post-harvest management and impacts on subsequent land use. Findings support the inclusion of Salvia officinalis in phytoremediation strategies for certain contaminated sites in temperate climates, provided that integrated risk assessments are conducted. The results have implications for both environmental restoration policies and the sustainable reuse of marginal lands affected by pollution.

Keywords: phytoremediation, Salvia officinalis, heavy metal contamination, soil remediation, environmental restoration

EFFECTS OF ORGANIC COMPOST ON HEAVY METAL ACCUMULATION, NUTRIENT DISTRIBUTION, AND QUALITY OF TOBACCO CULTIVARS IN BULGARIA

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Abstract

This paper evaluates the impact of organic compost amendments on the uptake of heavy metals, nutrient profile, and qualitative features of selected tobacco cultivars grown in Bulgaria. Tobacco is prone to accumulating toxic elements from soil, raising health and market concerns. Field trials were conducted using plots treated with varying rates of certified organic compost, monitoring changes in soil chemistry, plant tissue composition, growth parameters, and leaf quality characteristics. The results indicate that compost application significantly improved soil fertility by enhancing nitrogen, phosphorus, and potassium availability, leading to better plant growth and leaf yield. Importantly, compost amendments were found to immobilize certain heavy metals in the soil, reducing their accumulation in tobacco leaves by up to 30% compared to control plots. The study further discusses compost's effect on micronutrient balance and secondary metabolite content, both of which are critical for tobacco quality and safety. The findings offer sustainable solutions for tobacco farmers to simultaneously mitigate heavy metal risks and improve crop value, aligning with international safety standards. Policy implications and best management practices are suggested for wider adoption in regions with contaminated or marginal soils.

Keywords: organic compost, heavy metals, tobacco quality, nutrient accumulation, sustainable agriculture

PRELIMINARY SURVEY OF AFLATOXIN CONTAMINATION IN RICE SAMPLES FROM SURINAME

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Abstract

Aflatoxin contamination represents a significant public health hazard, particularly in staple foods like rice. This preliminary survey assessed the occurrence and levels of aflatoxin present in locally produced and imported rice samples in Suriname. Using ELISA and HPLC analysis, researchers tested samples collected from major rice-producing regions and urban retail points over a six-month period. The study found detectable levels of aflatoxin B1 in more than 20% of samples, with occasional exceedances of international safety thresholds. Factors contributing to contamination included storage conditions, moisture content, and limited post-harvest monitoring infrastructure. The paper underscores the urgent need for comprehensive surveillance programs, increased stakeholder awareness, and advancement in storage and processing technologies to safeguard consumer health. Proposed interventions include standardized drying practices, implementation of routine aflatoxin screening, and public education initiatives. The research also outlines directions for further investigation, such as seasonal variation studies and exploring biological control agents. Ultimately, the study's findings provide foundational data to inform food safety policy and guide risk management in rice production and supply chains.

Keywords: aflatoxin, rice contamination, food safety, Suriname, mycotoxins

MANAGEMENT STRATEGIES FOR RICE FIELD LAND USE CHANGE IN SOUTH SULAWESI, INDONESIA

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Abstract

Rapid and often unregulated land use change in rice-producing areas of South Sulawesi, Indonesia, has significant implications for food security, farmer livelihoods, and ecosystem health. This paper analyzes drivers of rice field conversion to alternative land uses such as urban, industrial, and plantation agriculture. Multidisciplinary field surveys combined with GIS-based spatial analysis identified key socioeconomic, policy, and environmental factors influencing land use decisions. Stakeholder interviews highlighted competing demands from population growth, infrastructure development, and agricultural modernization as primary incentives behind conversion trends. The consequences include a reduction in productive land, loss of traditional irrigation systems, and alterations in biodiversity and hydrology. The study evaluates management strategies like land zoning, strengthening land tenure, sustainable intensification, and participatory planning involving local communities. Policy recommendations emphasize integrated land management frameworks to balance development with rice self-sufficiency and conservation goals. The research underscores the need for adaptive management and ongoing assessment to mitigate negative impacts and support resilient agricultural landscapes in the region.

Keywords: land use change, rice fields, management strategy, South Sulawesi, sustainable agriculture

LONG-TERM EFFECTS OF RECLAIMED INDUSTRIAL WASTEWATER IRRIGATION ON SOIL CHEMICAL PROPERTIES IN CROP PRODUCTION

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Abstract

This research examines the impact of long-term irrigation with reclaimed industrial wastewater on soil chemical properties and crop production in semi-arid agricultural lands. Field experiments analyzed soils irrigated for over a decade, measuring parameters including pH, electrical conductivity, heavy metal concentrations, and organic matter content. Findings reveal persistent accumulation of heavy metals—particularly chromium, lead, and cadmium—in irrigated plots relative to those using conventional sources. Salinity levels and nutrient profiles also showed marked differences, influencing crop selection and productivity. While some crops demonstrated tolerance and stable yields, sensitive varieties exhibited stunted growth and reduced quality. The paper discusses remediation measures, such as soil amendments and periodic leaching, to mitigate adverse effects and sustain soil fertility. The study contributes valuable data for policymakers and practitioners regarding the risks and best practices associated with using industrial wastewater in agriculture, advocating for routine monitoring and strict regulatory guidelines.

Keywords: industrial wastewater, soil properties, crop production, heavy metal accumulation, environmental risk

WATER USE EFFICIENCY IN CITRUS PRODUCTION IN THE MARRAKECH REGION UNDER VARIABLE CLIMATIC CONDITIONS

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Abstract

This paper explores water use efficiency (WUE) in citrus orchards situated in the Marrakech region of Morocco, an area confronted with increasing water scarcity due to climate variability. The research employed field experiments and modeling approaches to assess WUE in multiple citrus cultivars under varied irrigation regimes, including deficit and precision irrigation strategies. Climatic data, soil moisture measurements, and plant physiological responses were monitored over several growing seasons. Results indicated that the adoption of regulated deficit irrigation and the use of soil moisture sensors significantly improved WUE while mitigating yield reductions. The variability in cultivar response highlighted the importance of genotype selection adapted to arid conditions. Additionally, the findings point to the role of ground cover management and mulching in reducing evaporative water loss. The study provides actionable recommendations for farmers and policymakers to optimize resource allocation, improve yield sustainability, and enhance resilience to climate change. The proposed strategies contribute to broader efforts in ensuring food security and water conservation in Mediterranean-type agroecosystems.

Keywords: water use efficiency, citrus production, climate variability, irrigation management, Marrakech

OPTIMIZING CRUISE PERFORMANCE OF LIGHT AIRCRAFT WITH SMART WINGLET TECHNOLOGIES

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Abstract

This study focuses on optimizing the cruise performance of light aircraft through the implementation of smart winglet technologies. Winglets, designed to reduce induced drag and improve aerodynamic efficiency, have been extensively used in commercial aviation; however, their application to light aircraft remains underexplored. The research integrates advanced sensors and adaptive control surfaces into winglet designs to enable real-time adjustment to varying flight conditions. Computational fluid dynamics (CFD) simulations coupled with wind tunnel experiments were conducted to evaluate the aerodynamic improvements. Results indicate significant reductions in drag coefficients and improvements in lift-to-drag ratios, leading to fuel savings and extended cruise ranges. The smart winglets showed adaptive responses to turbulence and gusts, enhancing flight stability and passenger comfort. Additionally, the study discusses integration challenges related to the weight and complexity of smart components, proposing optimal trade-offs for light aircraft platforms. These findings contribute to more sustainable and cost-effective general aviation operations and open pathways for future research on adaptive aerodynamic structures.

Keywords: smart winglets, light aircraft, aerodynamic optimization, drag reduction, adaptive control

EXPERIMENTAL VALIDATION OF AUTOMATION MITIGATION TECHNIQUES IN AIR TRAFFIC CONTROL SYSTEMS

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Abstract

With growing air traffic density, reliance on automation in Air Traffic Control (ATC) systems has escalated, raising concerns over potential automation-induced errors. This paper experimentally validates various mitigation techniques designed to enhance human operators' situational awareness and decision-making capabilities when interacting with automated ATC tools. The study involved a series of simulation-based exercises with professional air traffic controllers under different automation failure scenarios. Mitigation strategies such as adaptive alert prioritization, enhanced user interfaces, and decision support systems were assessed for effectiveness in reducing errors and workload. Results demonstrated that targeted mitigation techniques significantly improve controller performance and reduce the incidence of oversight and delayed responses. Furthermore, subjective feedback highlighted increased trust and confidence in the automation-human interaction framework. The research supports the development of next-generation ATC systems emphasizing human-centric automation design to balance automation efficiency with operator control and safety.

Keywords: air traffic control, automation mitigation, human factors, decision support systems, situational awareness

ADVANCED STATE-SPACE MODELING AND CONTROL OF SMART STRUCTURES WITH DAMPING CAPABILITIES

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Dr. Nourhan Hassan
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Abstract

This research addresses the development of advanced state-space models and control algorithms for smart structures equipped with damping mechanisms aimed at vibration reduction and structural health monitoring. The study presents a novel state-space representation incorporating piezoelectric actuators and sensors integrated into composite beams and plates. Control strategies based on optimal and robust control theories were formulated to actively suppress undesired vibrations under various dynamic loading conditions. Experimental validation using a laboratory-scale smart beam setup confirmed the effectiveness of the proposed control laws, resulting in significant attenuation of resonance amplitudes and enhanced stability. Additionally, the system demonstrated adaptability to parameter variations and external disturbances. The findings provide valuable insights into the design of intelligent civil and aerospace structures capable of self-diagnosis and active mitigation of structural stresses, contributing to safer and longer-lasting infrastructure.

Keywords: smart structures, state-space control, vibration damping, piezoelectric actuators, structural health monitoring

SIMULATION OF COMPRESSIBLE FLUID FLOW IN POROUS MEDIA FOR BLOWDOWN EXPERIMENTS

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Abstract

The paper presents a detailed numerical investigation of compressible fluid flow through porous media, motivated by blowdown experiments relevant to safety and environmental applications. Using high-fidelity computational fluid dynamics models, the study simulates transient flow behavior, pressure waves, and phase interactions occurring during rapid decompression events. The porous domain is modeled with a multi-scale approach incorporating permeability variation and anisotropy effects. Results demonstrate complex flow patterns characterized by shock fronts and rarefaction waves, providing insights into the interaction between fluid compressibility and media microstructure. Validation against experimental blowdown data shows good agreement, highlighting the model’s predictive capability. The work has implications for the design and safety analysis of storage tanks, filters, and geotechnical reservoirs, where fluid-structure interactions under sudden depressurization are critical. Future extensions include coupling with thermal effects and multi-phase flow phenomena.

Keywords: compressible fluid flow, porous media, blowdown experiments, computational fluid dynamics, transient simulation

ANALYSIS OF 3D AERODYNAMIC BEHAVIOR POST-STALL INCLUDING CAMBER LOSS EFFECTS

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Abstract

This study investigates the three-dimensional aerodynamic characteristics of airfoils and wings beyond stall conditions, with a focus on the impact of camber loss on aerodynamic performance and flow separation patterns. Using large-eddy simulation (LES) techniques paired with wind tunnel validations, the research quantifies changes in lift, drag, and pitching moments during post-stall flight regimes. The camber loss, associated with membrane deformation or structural changes in flexible wings, was modeled to analyze its detrimental effects on stall recovery and control authority. Findings reveal complex vortex shedding, increased flow unsteadiness, and substantial reductions in aerodynamic efficiency due to camber degradation. The results have direct applications in the design of unmanned aerial vehicles (UAVs), flexible wing aircraft, and flight control systems aimed at enhancing post-stall maneuverability and safety margins. Recommendations emphasize incorporating camber monitoring and adaptive morphing technologies to mitigate adverse aerodynamic effects in post-stall conditions.

Keywords: post-stall aerodynamics, camber loss, 3D flow, large-eddy simulation, flexible wings

APPLICATION OF CELLULOSE NANOPARTICLE SUSPENSIONS AS ECO-FRIENDLY LUBRICANTS FOR INDUSTRIAL PUMPS

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Abstract

This research explores the potential of cellulose nanoparticle suspensions as sustainable, eco-friendly lubricants for industrial pump applications. With the increasing demand for biodegradable lubricants that reduce environmental impact, cellulose-based nanofluids offer a promising alternative due to their renewable origin and favorable tribological properties. Experiments were conducted to characterize the rheological behavior, lubrication performance, and wear resistance of these suspensions under varying loads and speeds using standardized tribometric tests. Results indicate significant friction reduction and improved wear protection compared to conventional mineral oils, attributable to the formation of a robust nanoparticle boundary layer on contact surfaces. Additionally, the study assesses the thermal stability and biodegradability of the suspensions, confirming their suitability for industrial use without compromising environmental safety. The paper discusses scalability challenges and potential industrial implementation strategies, highlighting the role of bio-based lubricants in advancing green manufacturing processes.

Keywords: cellulose nanoparticles, eco-friendly lubricants, industrial pumps, tribology, biodegradable fluids

IMPROVING FATIGUE LIFE IN BEARING AND SHAFT ASSEMBLIES OF HOUSEHOLD APPLIANCES THROUGH TOLERANCE OPTIMIZATION

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Abstract
This paper investigates methods for enhancing the fatigue life of bearing and shaft assemblies commonly used in household appliances by optimizing manufacturing tolerances. Precision in component dimensions can critically influence stress distributions and the initiation of fatigue cracks. A combined finite element analysis and probabilistic modeling approach was employed to identify tolerance levels that minimize peak stresses under cyclic loading. Experimental fatigue testing on prototype assemblies validated the simulation results, showing a marked increase in durability when optimized tolerances were applied. The findings offer practical guidelines for manufacturers to balance production costs with performance requirements and quality standards. This work contributes to improving reliability and maintenance intervals for widely used household machinery, supporting more sustainable product lifecycles.

Keywords: fatigue life, bearing assemblies, shaft tolerances, finite element analysis, household appliances

BIO-INSPIRED WING PLANFORM DESIGN: A META-MODEL BASED ON HUMPBACK WHALE FLIPPER TUBERCLES

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Abstract

Inspired by the unique tubercle structures found on humpback whale flippers, this study develops a meta-model for bio-inspired wing planform design aimed at improving aerodynamic performance and maneuverability. By replicating the tubercle geometry on wing leading edges, the research explores flow control mechanisms that delay stall and enhance lift generation. The meta-model synthesizes data from wind tunnel experiments, CFD analyses, and biomimetic design principles to optimize tubercle placement, size, and spacing. Results demonstrate that wings incorporating tubercles exhibit increased lift coefficients and improved stall characteristics compared to conventional smooth wings. The paper discusses potential applications in small aircraft, UAVs, and wind turbine blades, emphasizing sustainability and efficiency gains. This bio-inspired approach exemplifies the integration of biological insights with advanced engineering design to innovate in aerodynamics and structural optimization.

Keywords: bio-inspired design, wing planform, humpback whale, tubercles, aerodynamic performance

ARTIFICIAL INTELLIGENCE-BASED APPROACHES TO FIGHT CYBER BULLYING

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ABSTRACT

Cyberbullying has become an important social problem with the spread of digital technologies. Social media, messaging applications and online platforms pave the way for the easy spread of negative interactions between individuals. In this study, the definition of cyberbullying, its effects, detection methods and approaches to combating current technologies are discussed in a multidimensional manner. In the light of domestic and foreign studies in the literature, text mining and natural language processing (NLP) techniques developed for the analysis of cyberbullying content, especially in the Turkish language, have been examined in detail. In this context; keyword-based methods, sentiment analysis, machine learning algorithms, deep learning models (CNN, LSTM, BERT) and social network analysis have been comparatively evaluated.

The study emphasizes that cyberbullying occurs not only through textual content but also through visual, video and user interactions and draws attention to the importance of detection systems to be developed with the integration of multiple data types. In addition, it has been emphasized that contextual analysis and preprocessing steps are decisive for success in additive and low-resource languages such as Turkish. Although deep learning models have been shown to achieve high accuracy rates, issues such as data diversity and ethical data sharing are still fundamental problems that need to be solved. As a result, early warning systems, algorithms that take cultural context into account, and real-time analysis capabilities should be developed to prevent cyberbullying.

Keywords: Cyberbullying, Artificial intelligence, Natural language processing (NLP), Bullying detection

SİBER ZORBALIKLA MÜCADELEDE YAPAY ZEKÂ TABANLI YAKLAŞIMLAR

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ÖZET

Siber zorbalık, dijital teknolojilerin yaygınlaşmasıyla birlikte önemli bir toplumsal sorun haline gelmiştir. Sosyal medya, mesajlaşma uygulamaları ve çevrim içi platformlar, bireyler arası olumsuz etkileşimlerin kolayca yayılmasına zemin hazırlamaktadır. Bu çalışmada, siber zorbalığın tanımı, etkileri, tespit yöntemleri ve güncel teknolojilerle mücadele yaklaşımları çok boyutlu olarak ele alınmıştır. Literatürde yer alan yerli ve yabancı araştırmalar ışığında, özellikle Türkçe dilindeki siber zorbalık içeriklerinin analizi için geliştirilen metin madenciliği ve doğal dil işleme (NLP) teknikleri detaylı şekilde incelenmiştir. Bu bağlamda; anahtar kelime tabanlı yöntemler, duygu analizi, makine öğrenmesi algoritmaları, derin öğrenme modelleri (CNN, LSTM, BERT) ve sosyal ağ analizleri karşılaştırmalı olarak değerlendirilmiştir.

Çalışma, siber zorbalığın sadece metinsel içeriklerle değil; görsel, video ve kullanıcı etkileşimleri üzerinden de gerçekleştiğini vurgulamakta ve çoklu veri türlerinin entegrasyonu ile geliştirilecek tespit sistemlerinin önemine dikkat çekmektedir. Ayrıca, Türkçe gibi eklemeli ve düşük kaynaklı dillerde bağlamsal analiz ve önişleme adımlarının başarıyı belirleyici olduğu vurgulanmıştır. Derin öğrenme modellerinin yüksek doğruluk oranlarına ulaştığı görülmekle birlikte, veri çeşitliliği ve etik veri paylaşımı gibi konular hâlâ çözülmesi gereken temel sorunlardır. Sonuç olarak, siber zorbalığın önlenmesine yönelik erken uyarı sistemleri, kültürel bağlamı dikkate alan algoritmalar ve gerçek zamanlı analiz yetenekleri geliştirilmelidir.

Anahtar kelimeler: Siber zorbalık, Yapay zekâ, Doğal dil işleme (NLP), Zorbalık tespiti

UZAK KIRSAL YERLEŞİMLERİN ELEKTRİFİKASYONU İÇİN HİBRİT ENERJİ SİSTEMLERİNİN OPTİMİZASYONU: BATMAN, HASANKEYF ÖRNEĞİ

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ÖZET

Günümüzde şebeke bağlantısının ekonomik olarak mümkün olmadığı uzak kırsal bölgelerde, yenilenebilir enerji tabanlı hibrit sistemler, köy elektrifikasyonu için sürdürülebilir ve uygulanabilir bir çözüm olarak öne çıkmaktadır. Bu çalışma, Batman ili Hasankeyf çevresinde yer alan yeni bir kırsal yerleşimin elektrifikasyonunu sağlamak amacıyla, güneş ve rüzgar enerjisi tabanlı hibrit bir sistemin optimizasyonunu kapsamaktadır. Analiz kapsamında örnek köyün toplam elektrik ihtiyacı, 8 haneden oluşan ve her biri yaklaşık 20 kWh/gün enerji tüketen haneler baz alınarak modellenmiştir.

HOMER Pro yazılımı ile gerçekleştirilen simülasyon sonuçlarına göre, 160 kW kurulu güce sahip fotovoltaik paneller ve 12 kW rüzgar türbini ile desteklenen, kurşun asit batarya depolama ve konvertörden oluşan sistemin, yıllık toplam elektrik ihtiyacının tamamını karşılayabildiği görülmüştür. Ekonomik analizde, sistemin toplam net şimdiki maliyeti (NPC) 417.079 $, birim enerji maliyeti (LCOE) ise 0,336 $/kWh olarak hesaplanmıştır. Sistem toplamda yıllık 255.748 kWh elektrik üretirken, bunun %97,5'i güneşten, %2,5'i ise rüzgardan sağlanmaktadır. Ayrıca, yapılan analizler sonucunda şebeke hattının 26 km'yi aşmaması durumunda, hibrit sistemin ekonomik olarak şebekeye göre daha avantajlı olduğu belirlenmiştir.

Duyarlılık analizleri, köyün elektrik talebinde ve bölgedeki güneş ışınımı ile rüzgar hızlarında meydana gelebilecek artışların, birim enerji maliyeti üzerinde sınırlı bir artışa yol açtığını göstermektedir. Sonuç olarak, bölgeye özel tasarlanan hibrit sistem, uzak ve şebekeden bağımsız köyler için güvenilir, sürdürülebilir ve ekonomik bir elektrifikasyon alternatifi sunmaktadır.

Anahtar Kelimeler: Hibrit Yenilenebilir Enerji Sistemleri, enerji yönetim sistemleri, optimizasyon, güç üretim ekonomisi, çevre ekonomisi