ABSTRACT BOOK

BALKAN 13. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

ÜSKÜP
25 - 27 NİSAN 2025

BALKAN 13. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

BALKAN 13th INTERNATIONAL CONFERENCE ON APPLIED SCIENECES
APRIL 25 - 27, 2025
SKOPJE

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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	**Dr. Öğretim Üyesi Şükran BULUT**	1	TECHNOLOGY ASSISTED VOCABULARY LEARNING (TAVL) IN THE INSTRUCTION OF EFL	Dr, TUĞBA İNCİMAN ÇELİK Prof. Dr, Cenk AKAY
		2	PEER FEEDBACK: AN EFFECTIVE APPROACH TO SUPPORT STUDENT LEARNING	Dr, TUĞBA İNCİMAN ÇELİK Prof. Dr, Cenk AKAY
		3	EVOLUTIONARY GAME THEORY AND POST-PANDEMIC ECONOMICS EDUCATION	Dr. Aras Yolusever
		4	EVOLUTIONARY GAME THEORY AND INNOVATION	Dr. Aras Yolusever
		5	ÇOCUKLARIN SANATSAL GELİŞİMİ, SANAT EĞİTİMİNİN BİLİŞSEL VE DUYGUSAL ETKİLERİ ÜZERİNE BİR İNCELEME	Dr. Öğretim Üyesi Şükran BULUT
		6	COURSE SATISFACTION AND SUCCESS LEVELS IN STUDENTS DURING DISTANCE EDUCATION AND FACE TO FACE EDUCATION PERIODS	Oktay Kuru
		7	INVESTIGATION OF POSTGRADUATE THESES ON FOREIGN LANGUAGE SPEAKING ANXIETY BETWEEN 2013-2023	Yüksek Lisans Öğrencisi, Kübra LALE Prof.Dr., ŞENEL ELALDI
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HALL / SALON 2	**Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK**	1	THE NECESSITY OF TEACHING EDUCATIONAL LAW IN UNIVERSITIES: A PHENOMENOLOGY STUDY	Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK
		2	THE EFFECT OF TEACHER SELF-EFFICACY BELIEF ON ATTITUDE TOWARDS TEACHING PROFESSION: A SAMPLE OF PEDAGOGICAL FORMATION STUDENTS	Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK
		3	SÖZ VARLIĞI SORUNSALINA TÜRKÇE ÖĞRETMENİ ADAYLARININ BAKIŞI: BİR FENOMENOLOJİ ÇALIŞMASI	Öğretmen Adayı İREM AYHAN Doç. Dr. MUHAMMET İBRAHİM AKYÜREK
		4	PRESERVICE ELEMENTARY MATHEMATICS TEACHERS' OPINIONS ON THE EDUCATION PROVIDED AT THE UNIVERSITY AND SECONDARY SCHOOL MATHEMATICS TEACHING: A PHENOMENOLOGICAL STUDY	Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK Preservice Teacher HALE ŞEVİK
		5	THE EFFECT OF ATTITUDE TOWARDS TEACHING PROFESSION ON ACADEMIC SELF-EFFICACY: A SAMPLE OF PROSPECTIVE ELEMENTARY MATHEMATICS TEACHERS	Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK Preservice Teacher AYŞEGÜL TÜRKSEVEN
		6	TEACHERS' PERSPECTIVE ON MOBBING: A PHENOMENOLOGY STUDY	Assoc. Prof. Dr. MUHAMMET İBRAHİM AKYÜREK Graduate Student İPEK GÜNDÜZ

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HALL / SALON 3	**Doç. Dr. Kemal YAMAN**	1	THE NEED TO REGULATE THE COORDINATION BETWEEN INSTITUTIONS AND ORGANIZATIONS IN ADMINISTRATIVE NORMS	DR. Araştırma Görevlisi, Burcu TURAN
		2	INTERIM MEASURE IN INDIVIDUAL APPLICATION TO THE CONSTITUTIONAL COURT	Dr. Öğr. Üyesi Ufuk Ramazan ÇAKMAK
		3	GENERAL CHARACTERISTICS OF SECURITY MEASURES IN TURKISH CRIMINAL LAW	Doktor Öğretim Görevlisi, Mümin GÜNGÖR Doktor Öğretim Üyesi, Nazmiye ÖZENBAŞ BOYDAĞ
		4	ÜNİVERSİTE ÖĞRENCİLERİNİN YAYGIN SU TÜKETİM TUTUMU: KARABÜK ÜNİVERSİTESİ ÖRNEĞİ	Doç. Dr. Kemal YAMAN Lisans Öğrencisi, Rana Ece KALAZ
		5	İNGİLTERE'DE YENİ KENT UYGULAMASI : MILTON KEYNES ÖRNEĞİ	Doç. Dr. Kemal YAMAN

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HALL / SALON 4	**Prof.Dr.Ali Rıza DİNÇER**	1	MANYETİK Fe_3O_4 PARÇACIKLARI İLE BOYA UZAKLAŞTIRILMASI	ŞEVVAL KARAÇUKA Doç. Dr., LEVENT SEMİZ
		2	ADVANCED TREATMENT OF BIOLOGICALLY PURIFIED ORGANIC PEROXIDE PRODUCING CHEMICAL INDUSTRY WASTEWATER USING UV/TiO2 OXIDATION PROCESS	M.Sc.Demet DARCAN Prof. Dr.Deniz İzlen ÇİFÇİ Prof.Dr.Ali Rıza DİNÇER
		3	COLOR REMOVAL FROM BIOLOGICALLY TREATED PAPER INDUSTRY WASTEWATER BY ADSORPTION PROCESS	M.Sc.Demet DARCAN Prof. Dr.Deniz İzlen ÇİFÇİ Prof.Dr.Ali Rıza DİNÇER
		4	DEVELOPMENT AND CHARACTERIZATION OF BIO-BASED EPOXY COMPOSITES REINFORCED WITH OKRA LEAF POWDER AND PALM OIL FOR ENHANCED THERMOPHYSICAL PERFORMANCE	PhD Student, Şermin DENİZ Assoc. Prof. Dr. Ercan AYDOĞMUŞ Prof. Dr. Filiz KAR
		5	MİKROALG/ALGİNAT YEŞİL ADSORBAN İLE SULU ÇÖZELTİDEN MANGAN GİDERİMİ	Doç. Dr. Kadriye OKTOR Mühendis Selin Sezen KINA Yüksek Mühendis Güler HASIRCI Prof. Dr. Elif İNCE Prof. Dr. Nilüfer Hilmioğlu
		6	FUSARİUM FUNGİ PATHOGENS: IDENTİFİCATİON, IMPACT ON PLANT HEALTH, AND THE ADOPTİON OF INNOVATİVE TECHNOLOGİCAL STRATEGİES FOR DİSEASE MANAGEMENT AND SUSTAİNABLE AGRİCULTURE	PhD student: Nedaa M.M. Tanina Dr. Öğr. Üyesi Feyza N. KAFADAR Prof. Canan Can

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HALL / SALON 5	**Assist. Prof. Hatice DURAN OKUR**	1	21. YÜZYIL'DA ENGELLİ ÇOCUKLAR ÜZERİNE BİR DEĞERLENDİRME	Berfin AYDIN, Doç. Dr. H. İrem KALAYCI KIRLIOĞLU,
		2	A Sociological Perspective on Single Women's Views on Marriage and Sexuality	Prof. Dr. DOLUNAY ŞENOL HATİCE BAHİRE AKAY
		3	A SOCIOLOGICAL PERSPECTIVE ON MOTHER CANDIDATES' PERCEPTIONS OF MOTHERHOOD	Prof. Dr. DOLUNAY ŞENOL KÜBRA YAVUZ YILDIRAN
		4	SOSYOTELİZM, PARTNER SOSYOTELİZMİ VE İLİŞKİ DOYUMUNUN BİBLİYOMETRİK ANALİZİ	TOLGAHAN ÜNLÜ
		5	THE ILLUSION OF SUSTAINABILITY IN A CONSUMPTION SOCIETY	Assist. Prof. Hatice DURAN OKUR

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HALL / SALON 6	**Assoc. Prof. Dr. Salima Hassas**	1	DEMYSTIFYING THE PROBLEM-SOLVING PROCESS: UNVEILING THE NATURAL MECHANICS OF THE MIND	Dr. Amina Farkhonde
		2	AUTOMATING SCREEN-RECORDED VIDEO PRODUCTION: AN ALGORITHMIC APPROACH TO E-CONTENT CREATION	Dr. Darsareh Nikafrooz
		3	ONTOLOGICAL FOUNDATIONS FOR SMART LEARNING ENVIRONMENTS IN MUSIC EDUCATION: A COMPREHENSIVE FRAMEWORK FOR KNOWLEDGE REPRESENTATION AND APPLICATION	Prof. Dr. Konstantinos Stefanidakis, Dr. Michail Sofianos
		4	TRANSFORMING CIVIL ENGINEERING LABORATORY EDUCATION WITH FLIPPED LEARNING: A COMPREHENSIVE APPROACH TO DEVELOPING ESSENTIAL CAPABILITIES	Hector García- Georgia García-Rodríguez, Gerardo -Shashi Kant
		5	AUTONOMOUS AGENT LEARNING THROUGH CONSTRUCTIVIST PRINCIPLES: A BOTTOM-UP SEQUENTIAL LEARNING APPROACH AND TOOL	Piña Barrios-, Salvador Arellano, Bocanegra García,
		6	EMPOWERING ASSEMBLY LINES WITH DEEP LEARNING: A PARADIGM SHIFT IN PRODUCT IDENTIFICATION	Assoc. Prof. Dr. Salima Hassas
		7	ASSESSING THE ECONOMIC RETURNS OF HUMANITIES AND EDUCATION PROGRAMS IN PUBLIC UNIVERSITIES OF OSUN STATE, NIGERIA	Adelokun Gambo
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HALL / SALON 7	**Assist. Prof. Dr. Sarah Thompson**	1	REVOLUTIONIZING SMART MANUFACTURING THROUGH NEURAL NETWORKS: A DATA-DRIVEN APPROACH TO PROCESS AUTOMATION	Rajesh Nair
		2	ASSESSING THE ECONOMIC RETURNS OF SOCIAL SCIENCES DEGREES IN LAGOS STATE TERTIARY INSTITUTIONS: A STUDY BY FIELD	Tunde Adebayo, Ngozi Umeh
		3	EXPLORING DIGITAL PEDAGOGY: STUDENTS' INTERACTIONS WITH MULTIMODAL EDUCATIONAL PLATFORMS	Assist. Prof. Dr. Sarah Thompson
		4	HIDDEN VOICES: A STATISTICAL INVESTIGATION INTO DEPRESSION LEVELS IN ADHD STUDENTS IN UNIVERSITIES	Lukas Meier, Eva Schneider
		5	CHARTING EDUCATIONAL POLICY PATHWAYS: INSIGHTS INTO CURRICULUM REFORMS IN ARGENTINE HIGHER EDUCATION	Camila Rodríguez, Assis. Prof. Dr. Mateo Herrera
		6	BUILDING PROFESSIONAL COMMUNITIES: LOWER SECONDARY TEACHERS' JOURNEYS INTO COLLABORATIVE PRACTICE	Eleni Papadopoulou, Stavros Dimitriadis, Nikos Alexandris, Maria Tzortzi
		7	EXPLORING AI-ASSISTED STUDENT SUPPORT: THE ROLE OF CONVERSATIONAL AGENTS IN UNIVERSITY LEARNING ENVIRONMENTS	Andreas Christodoulou, Dr. Eleni Georgiadou

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HALL / SALON 8	**Assoc. Prof. Samuel M. Obong**	1	LEGAL LIMITS OF DIGITAL SURVEILLANCE IN DEMOCRATIC SOCIETIES	Dr. Markus Schneider
		2	INSTITUTIONAL CHALLENGES IN POST-CONFLICT JUSTICE SYSTEMS	Mirela Jovanović
		3	THE INTERSECTION OF RELIGIOUS LAW AND CONSTITUTIONAL PRINCIPLES	Assis. Prof. Dr. Fatemeh Alavi
		4	EDUCATIONAL INEQUALITY AND POLICY RESPONSES IN SUB-SAHARAN AFRICA	Assoc. Prof. Samuel M. Obong
		5	THE ROLE OF YOUTH IN POLITICAL TRANSITIONS: A CASE STUDY OF CIVIL UPRISINGS	Assoc. Prof. Rania El-Sayed Dr. Tarek Mahmoud
		6	LEGAL FRAMEWORK FOR CLIMATE MIGRATION IN SMALL ISLAND STATES	Ana Luisa Te'o
		7	EFFECTS OF JUDICIAL CENTRALIZATION ON LOCAL AUTONOMY: A COMPARATIVE STUDY	Assis. Prof. Dr. Nguyen Minh Trang
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HALL / SALON 9	**Assoc. Prof. Dr. Vannaphone Souvannaseng**	1	THE AESTHETICS OF LANTERN CRAFTS IN NORTHERN FESTIVALS: A DESIGN APPROACH	Dr. Kittinan Wongphet
		2	TRADITIONAL MASKS AND THEIR CULTURAL SIGNIFICANCE IN SOUTHEAST ASIAN FESTIVALS	Pimchanok Surapinit
		3	COMPARATIVE ANALYSIS OF PUBLIC HOUSING POLICIES IN EASTERN EUROPE	Assoc. Prof. Dr. Andrei Popescu Jelena Milinković
		4	BAMBOO AS A SUSTAINABLE MATERIAL FOR FURNITURE DESIGN	Warit Srisook
		5	A STUDY ON THE COMBUSTION CHARACTERISTICS OF MANGROVE-DERIVED BIOCHAR	Teerasak Lertpreecha
		6	CONTEMPORARY INTERPRETATIONS OF TRADITIONAL LAO TEXTILE PATTERNS IN GRAPHIC DESIGN	Assoc. Prof. Dr. Vannaphone Souvannaseng
		7	DEVELOPING MULTILINGUAL SIGNAGE FOR COMMUNITY-BASED TOURISM IN LUANG PRABANG	Lect. Sitha Bouphavanh
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HALL / SALON 10	**Assoc. Prof. Dr. Katarína Nováková**	1	THE IMPACT OF MACROECONOMIC STABILITY ON FOREIGN DIRECT INVESTMENT INFLOW	Dr. Khalid Al-Salim
		2	EVALUATING WOMEN'S EMPOWERMENT THROUGH AGRICULTURAL COOPERATIVES IN RURAL BANGLADESH	Shamima Aktar
		3	THE DYNAMICS OF NON-STATE ACTORS IN POST-CONFLICT STATE-BUILDING: THE CASE OF LIBYA	Assist. Prof. Dr. Salma El-Gharyani
		4	STRATEGIC LEADERSHIP APPROACHES IN RESOLVING INTERPERSONAL CONFLICTS IN PUBLIC SECTOR ORGANIZATIONS	Yasmin El-Naggar, Dr. Huda Mostafa
		5	A CRITICAL REVIEW OF CORPORATE ACCOUNTING PRACTICES IN DETECTING FINANCIAL MALPRACTICES	Chinedu Okeke
		6	DETERMINANTS OF CUSTOMER SATISFACTION IN DIGITAL BANKING SERVICES IN NEPAL	Dr. Anusha Shrestha
		7	PERFORMANCE EVALUATION OF MILITARY PERSONNEL IN THE SLOVAK REPUBLIC BASED ON MODERN HR FRAMEWORKS	Assoc. Prof. Dr. Katarína Nováková
		8	CHALLENGES IN BUILDING A NATIONAL BRAND IN POST-SOVIET ECONOMIES	Lali Beridze
		9	MULTIDIMENSIONAL CUSTOMER PROFILING FOR INNOVATIVE SMARTPHONE DESIGN STRATEGIES	Dr. Omar Al-Mansoori, Leen Hasan

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HALL / SALON 1	**Prof. Dr. Sezen BOZYİĞİT**	1	UZUN DÖNEMLİ EĞİLİMİN TAKINTILI TÜKETİM ÜZERİNDEKİ ETKİSİNİN MEDENİ DURUM BAĞLAMINDA İNCELENMESİ	Prof. Dr. Sezen BOZYİĞİT
		2	TÜKETİCİLERİN TUTUMLULUK VE HİPEROPİ EĞİLİMİNİN HEDONİK TÜKETİM ÜZERİNDEKİ ETKİSİ	Prof. Dr. Sezen BOZYİĞİT
		3	NATURAL AND ORGANIC COSMETIC PRODUCTS: CONSUMER TRENDS AND REGULATORY FRAMEWORK	Öğr. Gör. Dr. DURSUN YILMAZ Öğr. Gör. TUĞÇE YILDIRIM DAL
		4	THE HISTORICAL TRANSFORMATION OF WOMEN'S BEAUTY PERCEPTION: THE CONCEPT OF AESTHETICS FROM TRADITION TO MODERNITY	Öğr. Gör. TUĞÇE YILDIRIM DAL Öğr. Gör. Dr. DURSUN YILMAZ
		5	ZİHNİN GİZLİ KODLARI: NÖROPAZARLAMA İLE TÜKETİCİYİ ETKİLEMENİN SIRLARI	Dr. Öğrt. Görv. Pınar COŞKUN
		6	GREEN HRM AND GREEN LEADERSHIP PRACTICES: PATAGONIA AND UNILEVER EXAMPLES	Büşra SARIAYDIN Assoc. Prof. Dr. Arzu UĞURLU KARA
		7	İNSAN KAYNAKLARI YÖNETİMİNDE İŞE ALIM SÜRECİNDE YAPAY ZEKANIN KULLANIMI ÜZERİNE VOSVİEWER İLE BİR BİBLİYOMETRİK ANALİZ	Yunus Emre KESTANE Doç.Dr.Arzu UĞURLU KARA
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HALL / SALON 2	**Doç. Dr. Yasemin Darancık**	1	Yabancı Dil Eğitimi Öğrencilerinin Konuşma Becerisine Yönelik Öz Algıları	Doç. Dr. Yasemin Darancık
		2	DİJİTAL TOPLULUK TEMELLİ DİL ÖĞRENME MODELİ (CLL 2.0): COMMUNİTY LANGUAGE LEARNİNG YAKLAŞIMINA ÇAĞDAŞ BİR UYGULAMA ÖNERİSİ	Doç. Dr. Yasemin Darancık
		3	PRESERVICE PRESCHOOL TEACHERS' VIEWS ON CREATIVITY	Res. Asst. Dr., Şebnem Çetken Aktaş
		4	Modern Olimpiyatların Siyasal ve Sosyal Boyutları: Bir Derleme Çalışması	Doktora Öğrencisi EMRAH YILMAZ Doç. Dr. ZÜLBİYE KAÇAY
		5	ÜNİVERSİTE ÖĞRENCİLERİNİN SPOR FARKINDALIKLARININ BELİRLENMESİ	Sinem TOÇOĞLU Engin VURAL Ahmet DÖNMEZ Tuncay KIRATLI
		6	SPOR BİLİMLERİ ÖĞRENCİLERİNİN DİJİTAL OKURYAZARLIK DÜZEYLERİNİN BELİRLENMESİ	Sinem TOÇOĞLU Engin VURAL Halil İbrahim GENÇ Tuncay KIRATLI

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HALL / SALON 3	**Doç. Dr. Hüsnü ERGÜN**	1	İNTERAKTİF ÖĞRENME ORTAMLARININ YABANCI DİL OLARAK İNGİLİZCE KONUŞMA BECERİSİ ÜZERİNDEKİ ETKİSİ	Doktora Öğrencisi Murat SALMAN Prof. Dr. Cenk AKAY
		2	YABANCI DİL OLARAK İNGİLİZCE ÖĞRETİMİNDE OYUNLAŞTIRMANIN ROLÜ	Doktora Öğrencisi Murat SALMAN Prof. Dr. Cenk AKAY
		3	TÜRKİYE'DE ÖĞRETMEN DENETİM SÜREÇLERİNİN İNCELENMESİ: BİR DOKÜMAN ANALİZİ	Doç. Dr. Hüsnü ERGÜN
		4	TÜRKİYE'DE EĞİTİM DENETİMİNİN DÖNÜŞÜMÜ: OKUL YÖNETİCİLERİ VE REHBER ÖĞRETMENLER İÇİN 2025 DEĞERLENDİRME KILAVUZU ANALİZİ	Doç. Dr. Hüsnü ERGÜN
		5	TÜRK DÜNYASINDA EĞİTİMDE YENİLİK ARAYIŞLARI: YUSUF AKÇURA VE İSMAİL GASPIRALI ÖRNEĞİ	SÜMERYA GÜNTÜRK
		6	EĞİTİM YÖNETİCİLERİNİN GÖREVDEN AYRILMA NEDENLERİ	MUSTAFA ÖZKAN Doç. Dr. TİJEN TÜLÜBAŞ

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HALL / SALON 4	**Prof.Dr.Bayram Akça**	1	MUSTAFA KEMAL ATATURK'S SPEECH ON TURKISH-BALKAN RELATIONS DURING THE RECEPTION OF THE AMBASSADORS OF THE BALKAN COUNTRIES	Prof.Dr.Bayram Akça
		2	MUSTAFA KEMAL ATATURK'S SPEECH ON TURKISH-BALKAN RELATIONS IN THE OPENING SPEECHES OF THE TURKISH PARLIAMENT	Prof.Dr.Bayram Akça
		3	EKONOMİ, TARİH, KÜLTÜR VE TURİZM EKSENİNDE BİT PAZARLARI: ÜSKÜP BİT PAZARI ÖRNEĞİ	Prof. Dr. Hulusi DOĞAN Öğr. Gör. Meliha Yaren BERKTAŞ
		4	PURPOSEFUL TRAINING PLANNING: DIRECTIONS, CHALLENGES	Assoc. Prof. Dr. Nazile Abdullazade
		5	US MIDDLE EAST POLICY: OIL- SECURITY- SPHERE OF INFLUENCE	Yüksek Lisans Öğrencisi, İLAYDA GÜLÜMSER
		6	THE BLACK SEA CRISIS: OBSTACLES ON THE EUROPEAN UNION'S WAY TO BECOME A GLOBAL POWER	Yüksek Lisans Öğrencisi, İLAYDA GÜLÜMSER
		7	THE NEW DESTINATION FOR HEALTHY AND INNOVATIVE NUTRITION: GLUTEN-FREE LIVING	Dr. Öğr. Üyesi, ÇİĞDEM KIZILGEÇİ Araştırmacı, ZEYNAL TAŞTAN
		8	Uzayın Militarizasyonu: Sovyet Perspektifi ve Güvenlik Yaklaşımı	Mahmut Can ÖZDEMİR

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HALL / SALON 5	**Dr. Öğr. Üyesi ZEYNEP HÜMEYRA KOÇ**	1	A RESEARCH ON THE ANALYSIS OF THE PRINCIPLES OF SEPARATION OF POWERS IN THE CONTEXT OF POLITICAL PHILOSOPHY	Kemal GÜL Prof. Dr. Arslan TOPAKKAYA
		2	A RESEARCH ON THE ANALYSIS OF THE PRINCIPLES OF SEPARATION OF POWERS IN THE TURKISH STATE SYSTEM ON A CONSTITUTIONAL PLANE	Kemal GÜL Prof. Dr. Arslan TOPAKKAYA
		3	OLGUSAL BİR GERÇEKLİK OLARAK TAKLİT: EPİSTEMOLOJİK VE TEOLOJİK DEĞERİ	Dr. Öğr. Üyesi ZEYNEP HÜMEYRA KOÇ
		4	THE EPİSTEMOLOGİCAL VALUE OF THE AESTHETİC ARGUMENT	Oğuzhan Yalçın Assoc. Prof. Dr. Özcan Akdağ
		5	CULTURAL SUSTAINABILITY AND SPATIAL IDENTITY IN CONTEMPORARY INTERIOR DESIGN WITH LESSONS FROM IRANIAN ISLAMIC ARCHITECTURE	Assoc. Prof. Dr. Meryem GEÇİMLİ
		6	TRADITIONAL NATIVE AMERICAN BUILDING STYLES AND THEIR MODERN REINTERPRETATION	Assoc. Prof. Dr. Meryem GEÇİMLİ
		7	HARFLERİN HAFIZASI OLARAK KÜLTÜREL TİPOGRAFİ; TOPLUMSAL BELLEK VE KİMLİK	Doç. Dr. Barış AYDIN Master Öğrencisi, Zeynep KILIÇ
		8	POST-ANTROPOSANTRİZM: TASARIMDA SANATÇININ YOKLUĞUNUN VARLIĞI	Doç. Dr. Barış AYDIN Master Öğrencisi, Necla KILIÇ
		9	AN ANALYSIS ON ORIENTALIST PERSPECTIVE AND THE OTHER IN DIGITAL GAMES	Öğr. Gör., SİBEL ÖZDEN OMUZLU Doç. Dr., MUSTAFA C. SADAKAOĞLU

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HALL / SALON 6	**Assoc. Prof. Dr. Kittiphon Tawan**	1	STRATEGIC MIGRATION TO HYBRID CLOUD INFRASTRUCTURES	Lina Ahmed Al-Fulan Mohammed R. Al-Khatib
		2	THE ROLE OF HISTORICAL FIGURES IN SHAPING MODERN DIPLOMACY	Elmira D. Sadykova
		3	POST-IMPACT RESIDUE ANALYSIS IN FORENSIC BALLISTICS	Surasak Jantapoom Kulnarin
		4	HYBRID PEDAGOGY MODELS FOR VIRTUAL CLASSROOMS	Assoc. Prof. Dr. Kittiphon Tawan
		5	COMMUNITY PARTICIPATION IN HERITAGE POLICY FORMULATION	Dr. Kanokwan Theerathongchai
		6	EMPOWERING YOUNG ARTISTS THROUGH LOCAL SCRIPT INTEGRATION	Rachid Ben Amar Andrew J. Collins
		7	VISUAL STORYTELLING FOR CHILDREN INSPIRED BY FOLK NATURE TALES	Dr. Anucha Sangsiri

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HALL / SALON 7	**Assoc. Prof. Dr. Maha Al-Farouqi**	1	SOCIAL MEDIA IMPACT ON TRAVEL DECISIONS AMONG EASTERN EUROPEAN BACKPACKERS	Dr. Irina Vlasenko, Anatoly Rudenko
		2	INCLUSIVE WORKPLACE POLICIES IN FINANCIAL INSTITUTIONS: A GULF REGION OVERVIEW	Assoc. Prof. Dr. Maha Al-Farouqi
		3	DIGITAL NOTE-TAKING HABITS AMONG SECONDARY SCHOOL STUDENTS	Rachel Whitmore
		4	PARENTAL ROLES IN LANGUAGE DEVELOPMENT OF CHILDREN WITH SPECIAL NEEDS	Yun-Hwa Lin
		5	FACTORS SHAPING YOUTH CIVIC PARTICIPATION IN SOUTH ASIAN UNIVERSITIES	Lecturer Ranjit Subramanian
		6	THAI ENGLISH VARIATIONS IN ONLINE HOTEL REVIEWS	Siriporn Kongsuk
		7	CONSUMER BEHAVIOR OF UNIVERSITY STUDENTS IN LINE WITH BUDDHIST ECONOMIC VALUES	PhD candidate Anusorn Pradit
		8	INVESTIGATING COGNITIVE READING STRATEGIES AMONG ALGERIAN ESL GRADUATE STUDENTS	Huda Benamar, Faisal Rahimi
		9	CULTURAL SYMBOLISM IN HANDMADE SOUVENIR DEVELOPMENT FOR TOURISM	Assoc. Prof. Dr. Samira Khalil

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HALL / SALON 8	**Prof. Dr. Giorgi Beridze**	1	EVALUATING ORGANIZATIONAL AGILITY AS A DRIVER OF DIGITAL TRANSFORMATION INITIATIVES	Dr. Danijela Markovic, Tomas Ivankovic
		2	A HYBRID GENETIC-BASED APPROACH FOR OPTIMIZING NONLINEAR ECONOMETRIC MODELS	Ms. Student Lina Bensalem Dr. Yassine Tazi, Dr. Hicham Ferhat
		3	THE INTERPLAY BETWEEN GLOBAL ENERGY DEMAND AND ALTERNATIVE ENERGY INVESTMENTS	Fahad Al-Mutairi
		4	IMPLEMENTING LEAN PRINCIPLES IN PUBLIC HEALTH SYSTEMS: A CASE STUDY FROM LATIN AMERICA	Assis. Prof. Dr. Camila Torres, Luis Fernando Ríos
		5	CHALLENGES IN THE ADOPTION OF INDUSTRY 4.0 PRACTICES AMONG SOUTH ASIAN MANUFACTURERS	Dr. Rakesh Nair
		6	STRENGTHENING COMMUNITY-BASED ECONOMIES THROUGH SUSTAINABLE LOCAL ENTERPRISES	Santoso, Dewi Lestari
		7	ANALYSIS OF STRATEGIC FAILURES IN INFRASTRUCTURE FIRMS DURING ECONOMIC DOWNTURNS	Prof. Dr. Giorgi Beridze
		8	INFLUENCE OF PERSONALITY TRAITS ON DIGITAL PURCHASE DECISIONS IN MILLENNIAL CONSUMERS	Javier Martinez Ortega

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HALL / SALON 9	**Assoc. Prof. Dr. Richa Bansal**	1	COMPETENCY DEVELOPMENT IN SUPPLY MANAGEMENT: A CENTRAL EUROPEAN APPROACH	Dr. Lukas Schneider
		2	FRAMEWORK FOR IMPROVING INTERNAL AUDIT EFFECTIVENESS IN TRANSITIONAL ECONOMIES	Dr. Maryam Farzaneh, PhD Candidate Laleh Samimi, Mehdi Davani
		3	IMPACT OF PATENT POLICY ON INNOVATION PERFORMANCE IN INDIAN MANUFACTURING FIRMS	Assoc. Prof. Dr. Richa Bansal, Sandeep Sharma
		4	THE ROLE OF WORKPLACE TRUST, CULTURAL DIVERSITY, AND SELF-EFFICACY IN DIGITAL COMMUNICATION EFFECTIVENESS	Dr. Khalid Al-Mutairi
		5	FACTORS INFLUENCING VALUE RELEVANCE OF ACCOUNTING EARNINGS IN DEVELOPING CAPITAL MARKETS	Niloofar Tavakoli, Sara Rezaee
		6	INFORMATION SYSTEM FAILURES IN PUBLIC SECTOR ENTERPRISES: A GULF REGION PERSPECTIVE	Noora Al-Mansoori
		7	SUSTAINABLE SUPPLY NETWORK OPTIMIZATION UNDER UNCERTAINTY AND REGULATORY CONSTRAINTS	Fatema Al-Dabbous, Dr. Ahmad Al-Harbi, Tariq Al-Sabah
		8	ETHICAL LEADERSHIP AND GOVERNANCE CHALLENGES IN DIRECT SELLING ENTERPRISES	Rajesh Natarajan
		9	CORPORATE DISCLOSURE QUALITY AND INVESTOR DECISION-MAKING: EVIDENCE FROM A MIDDLE EASTERN CONTEXT	Samira Ebrahimi, Dr. Amir Daryanavard

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HALL / SALON 10	**Assoc. Prof. Dr. Mariam Hovhannisyan**	1	FEMINIST PERSPECTIVES ON WOMEN'S ACCESS TO DIGITAL HEALTHCARE IN DHAKA	Dr. Nusrat Jahan
		2	EVALUATING THE ROLE OF TRADITIONAL AUTHORITIES IN LOCAL CONFLICT RESOLUTION	Olufemi Babajide Adeyemi
		3	SOCIO-SPATIAL TRANSFORMATION AND THE RISE OF INFORMAL COMMUNITIES IN TEHRAN	Farideh Shafiei
		4	TECHNICAL TRANSLATION PRACTICES IN MULTILINGUAL AFRICAN CONTEXTS	Dr. Samuel K. Nyongesa
		5	TRADITIONAL MOTIFS AND CONTEMPORARY AESTHETICS IN EMIRATI TEXTILE DESIGN	Layla Saeed Al-Hosani
		6	COORDINATING MULTINATIONAL ENGINEERING PROJECTS: STRATEGIES FOR SYSTEM INTEGRATION	Youssef Belkacem Jean-Louis Dubois
		7	ANALYZING THE EUROPEAN UNION'S STANCE ON GLOBAL MIGRATION GOVERNANCE	Lecturer Camille Fournier
		8	PATTERNS OF YOUTH MIGRATION FROM RURAL ARMENIA TO URBAN CENTERS	Assoc. Prof. Dr. Mariam Hovhannisyan
		9	THE DEVELOPMENT AND CITIZEN PERCEPTION OF E-GOVERNANCE PLATFORMS IN THE CZECH REPUBLIC	Jakub Novák

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HALL / SALON 1	**Prof.Dr, GÜLAY ÖZTÜRK**	1	EVALUATION OF ACTIVE AGING STRATEGIES IN THE CONTEXT OF GLOBAL INDICATORS: THE CASE OF SOUTHERN EUROPE WELFARE STATES AND TURKIYE	Emine NAMLI Senanur KÜNKÜL Dr. Öğr. Üyesi Siyret AYAS ŞARMAN
		2	GENDER EQUALITY IN SOUTHERN EUROPEAN WELFARE STATES AND TURKIYE: A CURRENT ASSESSMENT	Senanur KÜNKÜL Emine NAMLI Dr. Öğr. Üyesi Siyret AYAS ŞARMAN
		3	AN ANALYSIS OF A THE GAZA-THEMED NEWS ARTICLE IN THE CONTEXT OF EMBEDDED MULTIMEDIA JOURNALISM	Assoc. Prof. Dr. BİRSEN ÇETİN
		4	THE SIGNIFICANCE OF STORYTELLING THROUGH DATA VISUALIZATION IN CONTEMPORARY MARKETING COMMUNICATION STUDIES	Prof.Dr, GÜLAY ÖZTÜRK

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HALL / SALON 2	**Prof. Dr. Yunus KAYIR**	1	COMPARISON OF EVOLUTIONS OF INTERNAL EROSION IN HOMOGENEOUS EARTH-FILL DAMS BUILT WITH MEDIUM SAND-CLAY MIXTURE WHEN THE SEEPAGE IS AT BOTTOM OR AT MIDDLE PART OF THE DAM	Prof. Dr. Mehmet Şükrü GÜNEY Res Assit. Emre DUMLU Res Assist. Merve OKAN Yiğit KALYONCU
		2	SYNTHESIS OF BUTLY-SUBSTITUTED 4-THIAZOLIDINONE COMPOUNDS VIA ONE-POT MULTICOMPONENT REACTION	Dr. Fatma Tülay TUĞCU
		3	THE ROLE OF BIG DATA IN DECISION SUPPORT SYSTEMS FOR INTERIOR DESIGN	Assoc. Prof. Dr. Meryem GEÇİMLİ
		4	WASTE MANAGEMENT AND CIRCULAR ECONOMY PRACTICES IN INTERIOR SPACES	Assoc. Prof. Dr. Meryem GEÇİMLİ
		5	EFFECT OF THE CUTTING PARAMETERS ON DRILLING OF GGG40 MATERIAL ON A LATHE	Prof. Dr. Yunus KAYIR Öğr. Grv. Muharrem USTA
		6	COVERINGS OF IRRESOLUTE TOPOLOGICAL GROUPS	Öğr. Gör. Kadriye BAŞAR Doç. Dr. Hürmet FULYA AKIZ
		7	COVERINGS AND ACTIONS OF IRRESOLUTE TOPOLOGICAL GROUPOIDS	Doç. Dr. Hürmet FULYA AKIZ Öğr. Gör. Kadriye BAŞAR
		8	THE ROLE OF BACTERIAL AGENTS IN THE ETIOLOGY OF PROSTATIC INFECTIONS	Prof. Dr. FATMA HUSNIYE DILEK Doç. Dr. IHSAN HAKKI CIFTCI Prof. Dr. OZTUG ADSAN Uzm. Dr. ENGIN KARAKECE Prof. Dr. HASAN SALIH SAGLAM Prof. Dr. OSMAN KOSE Dr. ZEYNEP KAHYAOGLU Dr. ELMAS PINAR KAHRAMAN KILBAS

		9	NATIONWIDE STUDY ON THE SHIFT FROM CLSI TO EUCAST IN THE ANTIBIOTIC RESISTANCE PATTERNS OF ESCHERICHIA COLI ISOLATED FROM WOMEN WITH URINARY TRACT INFECTIONS	DOÇ. DR. İHSAN HAKKI ÇİFTCİ DR. ELMAS PINAR KAHRAMAN KILBAŞ PROF. DR. AHMET ALİM DOÇ. DR. ALİ KORHAN SIĞ DR. ÖĞR. ÜYESİ AYŞE ÖZKAÇMAZ DOÇ. DR. AYTEN GÜNDÜZ DOÇ. DR. BARIŞ GÜLHAN PROF. DR. BİLGE SÜMBÜL PROF. DR. CÜNEYT ÖZAKIN PROF. DR. DEVRİM DÜNDAR DR. ÖĞR. ÜYESİ EMEK TÜRKEKUL ŞEN UZM. DR. ENGİN KARAKEÇE DOÇ. DR. ESRA ÖZKAYA PROF. DR. FADİLE YILDIZ ZEYREK DOÇ. DR. FİLİZ ORAK PROF. DR. FÜSUN CÖMERT PROF. DR. GÜL DURMAZ DOÇ. DR. GÜLGÜN YENİŞEHİRLİ PROF. DR. HAKAN TEMİZ PROF. DR. HATİCE TÜRK DAĞI DR. İMDAT KILBAŞ PROF. DR. METİN DOĞAN PROF. DR. MUHAMMET GÜZEL KURTOĞLU PROF. DR. MUHAMMED HAMİDULLAH UYANIK PROF. DR. MÜCAHİDE ESRA KOÇOĞLU PROF. DR. NURİ KİRAZ UZM. DR. ÖZLEM KOCA UZM. DR. ÖZLEM YOLDAŞ DOÇ. DR. PINAR SAĞIROĞLU PROF. DR. SABAHAT AKSARAY DOÇ. DR. SADIK AKGÜN PROF. DR. SELÇUK KAYA PROF. DR. SEMRA KURUTEPE PROF. DR. YELİZ ÇETİNKOL PROF. DR. YELİZ TANRIVERDİ

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HALL / SALON 1	**Asst. Prof., Merve DEMİRBÜGEN ÖZ**	1	WHAT AFFECTS THE LEVEL OF SEXUAL HEALTH LITERACY IN WOMEN? A LITERATURE REVIEW EXAMPLE	Yüksek Lisans Öğrencisi Aleyna GÜNER Doç. Dr. Ruveyde AYDIN
		2	AWARENESS OF GYNECOLOGIC CANCERS IN WOMEN: A STUDY ON ENDOMETRIAL CANCER	Yüksek Lisans Öğrencisi Büşra İŞBİLİR Doç.Dr. Ruveyde AYDIN Yüksek Lisans Öğrencisi Aleyna GÜNER
		3	ACİLİN NABZI: HER BRANŞIN KESİŞTİĞİ NOKTADA HEKİM OLMAK	Dr. Ögr. Üyesi Ramazan KIYAK
		4	THE RELATIONSHIP BETWEEN CHEST PAIN AND ANXIETY: A CURRENT EVALUATION	Dr. Öğr. Üyesi Gökhan TAŞKIN
		5	ADLİ VAKANIN İLK DURAĞI: ACİL SERVİSTE ADLİ TIP	Dr. Öğr. Üyesi Samet KIYAK
		6	PROTOCOLS FOR NURSİNG CARE AND CLİNİCAL PRACTİCE İN INTENSİVE CARE UNİTS	Mesut DİREK Prof.Dr. Mukadder MOLLAOĞLU
		7	THE INFORMATİON NEEDS OF CAREGİVERS PROVİDİNG HOME CARE FOR PATİENTS WİTH STROKE	Mesut DİREK Prof.Dr. Mukadder MOLLAOĞLU
		8	NANOTOXICITY OF LIPID NANOPARTICLES IN DRUG DELIVERY	Asst. Prof., Merve DEMİRBÜGEN ÖZ
		9	ENVIRONMENTAL PHARMACEUTICALS: A NEW TOXICOLOGICAL EMERGENCY	Asst. Prof., Merve DEMİRBÜGEN ÖZ

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HALL / SALON 2	**Dr. Öğr. Üyesi Mustafa BUĞDAY**	1	Analysis of Fuel Consumption and Charging Efficiency in Electric Vehicles	Feyyaz Alpsalaz Emrah Aslan Yıldırım Özüpak
		2	Analysis of Fuel Consumption in Electric Vehicles: A Study on Segments, Usage Scenarios, and Energy Efficiency	Feyyaz Alpsalaz Emrah Aslan Yıldırım Özüpak
		3	FIRE RISKS IN ELECTRIC VEHICLES AND TÜRKİYE EVALUATION	İpek CAN Prof. Dr. Muhsin KILIÇ
		4	YÜKSEK BASINÇLI DÖKÜM MAKİNELERİNDE MODÜLER PİSTON KULLANILMASI İLE ÜRETİM VERİMLİLİĞİN ARTTIRILMASI	Robot ve Otomasyon Mühendisi, Umut COŞGUN Doç. Dr., Ahmet FEYZİOĞLU Dr. Trevor Uyi OMORUYİ
		5	KOMPAKT VE GÜVENLİ PNÖMATİK KESME MAKİNESİ	CANSU KELKİT ABDALLA SOLIMAN KADER DÖGEN DR. ÖĞR. ÜYESİ MUSTAFA BUĞDAY
		6	ARDUINO KONTROLLÜ PNÖMATİK AYIRMA MEKANİZMASINA SAHİP KONVEYÖR BANT SİSTEMİ TASARIMI VE UYGULAMASI	Dr. Öğr. Üyesi Mustafa BUĞDAY Öğrenci, Serden Şahin Öğrenci, Merve Çelikkanat Öğrenci, Muhammed Ozan Çelik

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HALL / SALON 3	**Dr. Ögr. Üyesi MERYEM DENİZ**	1	OPTIMAL TASK ALLOCATION ALGORITHM AND AGENT COMMUNICATION LANGUAGE DEVELOPMENT FOR UNMANNED AERIAL VEHICLE SWARMS	SONER KÖSTERİT Dr. Ögr. Üyesi MERYEM DENİZ
		2	GAME THEORY-BASED DECISION-MAKING ALGORITHM AND REWARD DESIGN FOR PREVENTING AUTOMATIC GROUND COLLISIONS	RIZA KUŞLU Dr. Ögr. Üyesi MERYEM DENİZ
		3	DEVELOPMENT OF Q-LEARNING BASED DECISION MAKING ALGORITHM FOR UAVS	MUHAMMET ENES TAŞOĞLU Dr. Ögr. Üyesi MERYEM DENİZ
		4	ARTIFICIAL INTELLIGENCE-BASED THREAT DETECTION AND AVOIDANCE SYSTEMS IN AUTONOMOUS UNMANNED AERIAL VEHİCLES (UAVS)	BARAN AKAY Dr. Ögr. Üyesi MERYEM DENİZ
		5	DESIGN AND CONTROL OF AN AUTONOMOUS DRONE FOR PACKAGE DELIVERY USING Q-LEARNING	SERBÜLENT TANRIVERDI Dr. Ögr. Üyesi MERYEM DENİZ
		6	DEVELOPMENT OF SAFE AND STABLE ALGORITHMS TO SUPPRESS SYSTEM ABNORMALITIES IN SWARM-BASED UNMANNED AERIAL VEHICLES	BERKAY KAHYAOĞLU Dr. Ögr. Üyesi MERYEM DENİZ
		7	DEVELOPMENT OF A DECISION-MAKING ALGORITHM FOR AIR COMBAT USING GAME THEORY AND DYNAMIC PROGRAMMING	SÜMEYYE CİNASLI Dr. Ögr. Üyesi MERYEM DENİZ

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HALL / SALON 4	**Res. Asst. Bengü FETİLER**	1	CONVOLUTIONAL VISION TRANSFORMER-BASED AUTOMATED MEDICAL REPORT GENERATION	Res. Asst. Bengü FETİLER Res. Asst. Ömer Atılım KOCA Assoc. Prof. Volkan KILIÇ
		2	EFFICIENT VISUAL INTERPRETATION WITH K-MEANS BASED COLOR CLUSTERING FOR VIDEO CAPTIONING	Emir ÇİL Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		3	A BENCHMARK STUDY OF TRANSFORMER LAYERS IN K-MEANS COLOR CLUSTERED IMAGE CAPTIONING	Atalay ŞAHAN Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		4	AUTOMATED CHEST X-RAY PROJECTION CLASSIFICATION	Mustafa Melik AYANOĞLU Res. Asst. Bengü FETİLER Res. Asst. Ömer Atılım KOCA Assoc. Prof. Volkan KILIÇ
		5	TRANSFORMER-BASED SEQUENCE-TO-SEQUENCE MEDICAL REPORT GENERATION	Mustafa Melik AYANOĞLU Res. Asst. Bengü FETİLER Res. Asst. Ömer Atılım KOCA Assoc. Prof. Volkan KILIÇ
		6	AUTOMATED CHEST X-RAY GENDER CLASSIFICATION	Mustafa Melik AYANOĞLU Res. Asst. Bengü FETİLER Res. Asst. Ömer Atılım KOCA Assoc. Prof. Volkan KILIÇ

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HALL / SALON 5	**Doç. Dr. SEVRA FIRINCIOĞULLARI**	1	DEBATES ON JUSTICE IN VICTOR HUGO'S "THE TAPNER CASE": NATURAL LAW and POSITIVE LAW	Doç. Dr. SEVRA FIRINCIOĞULLARI
		2	FICTION AND REALITY IN JULES VERNE'S THE ADVENTURES OF KERABAN THE INFLEXIBLE: AN EVALUATION OF 19th CENTURY BLACK SEA TRADE	Mustafa Can GÜRİPEK
		3	"DUHA KOCA" IN THE BOOK OF DEDE KORKUT ANALYSIS OF "DUHA KOCA OGLU DELİ DUMRUL" IN TERMS Of MYTHOLOGICAL MOTIFS	Dr. Öğr. Üyesi, Merve Nur SEZGİN Yüksek Lisans Öğrencisi, Merve ATÇI
		4	AN EXAMINATION OF THE STORY 'BASAT SLAYING TEPEGÖZ' IN THE BOOK OF DEDE KORKUT' IN TERMS OF MYTHOLOGICAL MOTIFS	Dr. Öğr. Üyesi Merve Nur SEZGİN Yüksek Lisans Öğrencisi, Tuğba TATLI
		5	THE INFLUENCE OF YUNUS EMRE ON A GHAZAL NOT FOUND IN THE DIVAN OF MUSTAFA ALI OF GELIBOLU	Dr. AYSEGUL EKICI
		6	JUSTICE DOCUMENTS OF THE WEST AND THE EAST: THE EFFECTS OF THE MAGNA CARTA AND THE TANZIMAT EDICT, TWO SPARKS OF FREEDOM, ON DEMOCRATIZATION AND HUMAN RIGHTS	Başöğretmen, Gülten AKGÜL
		7	THE DARK SIDE OF THE VICTORIAN LONDON: THE ANATOMY OF CRIME IN ENGLISH NOVELS	Başöğretmen, Gülten AKGÜL
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HALL / SALON 6	**Dr. Sofiane Bouzidi**	1	ANALYSIS OF FACTORS INFLUENCING DRIVER BEHAVIOR AND MEDIA PREFERENCES IN TRANSPORTATION	Dr. Ahmed Al-Farsi
		2	A COMPREHENSIVE STUDY ON THE IMPACT OF POLITICAL EXILE IN SOUTH ASIA	Ravi Kumar, Ananya Singh
		3	THE POSITION OF THE SUPREME COURT ON RESTRICTING CIVIL RIGHTS IN THE FACE OF NATIONAL SECURITY	Prof. Dr. Elena K. Ivanova
		4	PROTECTION AND RECOGNITION OF INDIGENOUS RIGHTS IN THE PHILIPPINES	Liza Dela Cruz, Renaldo Soriano
		5	THE NEED FOR SPACE LEGISLATION AMONG EMERGING SPACE NATIONS	Faisal Ahmed Mei Ling
		6	HUMAN RIGHTS AND THE ROLE OF CONSTITUTIONAL LAW IN MILITARY CONFLICTS	Dr. Sofiane Bouzidi
		7	ADVANCEMENTS IN FORENSIC SCIENCE: ANALYZING HAIR SAMPLES AFTER LONG-TERM EXPOSURE	Mariama Diop
		8	CHALLENGES IN DIGITAL EVIDENCE COLLECTION AND ITS ACCEPTANCE IN LEGAL SYSTEMS	Dr. Farida Ahmed
		9	THE ROLE OF THE EUROPEAN UNION IN INTERNATIONAL POLICY DEVELOPMENT	Stefan Kovac
		10	ANTI-CORRUPTION MEASURES IN THE CONTEXT OF THE MIGRATION CRISIS IN EUROPE	Elena Petrovna

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HALL / SALON 7	**Prof. Dr. Hiroshi Takahashi**	1	ADVANCING GENDER EQUALITY THROUGH TRADITIONAL INTERPRETATION IN ISLAMIC CULTURE	Dr. Zaynab Qasim
		2	THE INFLUENCE OF FRENCH LITERARY TRENDS ON TUNISIAN WOMEN WRITERS IN THE 20TH CENTURY	Rachida Ben Ali
		3	THE ETHICS OF HUMAN-NATURE RELATIONS: A GLOBAL PERSPECTIVE	Prof. Dr. Hiroshi Takahashi
		4	PROTECTING HUMAN RIGHTS THROUGH EUROPEAN LEGISLATIVE INITIATIVES	Aminat Idris Olumide Oladipo
		5	THE LEGACY OF NIXON'S POLITICAL STRATEGIES: A COMPARATIVE COMMUNICATION STUDY	Marie Dubois
		6	SECURITY CHALLENGES IN STATES UNDER SEVERE MILITARY STRAIN: A STUDY OF ASYMMETRIC WARFARE	Dr. Mohammed Amin
		7	DEVELOPING A NEW FRAMEWORK FOR EVALUATING MEDIA TRUSTWORTHINESS	Nadia El-Sayed
		8	GENDER INEQUALITIES IN ACADEMIC RESEARCH: GLOBAL DISPARITIES AND IMPLICATIONS	Ravi Patel Sara Kovačević
		9	THE ROLE OF THE SWISS SCIENTIFIC SOCIETY IN GLOBAL DEVELOPMENT INITIATIVES	Dr. Marta Fischer

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HALL / SALON 8	**Dr. Jessica Thompson**	1	ASSESSMENT OF SHEAR STRENGTH PARAMETERS OF MODIFIED LOESS WITH COMMON ADMIXTURES IN GORGAN, IRAN	Seyed Erfan Hosseini Mohammad K. Alizadeh, Amir Mesbah
		2	DEVELOPMENT OF AN INTEGRATED BIM (BUILDING INFORMATION MODELING) SYSTEM IN A CLOUD COMPUTING PLATFORM	Dr. Zhang Wei Prof. Liu Min
		3	SIMULATION AND PARAMETER OPTIMIZATION OF A RECTANGULAR MAGNETIC FIELD GENERATOR FOR INDUSTRIAL APPLICATIONS	Dr. Maria Gonzalez
		4	APPLICATION OF ADVANCED MACHINE LEARNING ALGORITHMS FOR STRUCTURAL HEALTH MONITORING	Ali Shah Ahmed Ali Farah Karim Saeed Zeynali
		5	THERMAL BEHAVIOR OF SUSTAINABLE CONCRETE MIXES WITH NATURAL INSULATION MATERIALS	L. Popescu S. Stanescu
		6	ASSESSING SAFETY RISKS IN URBAN CONSTRUCTION SITES THROUGH MACHINE LEARNING MODELS	Dr. Yiming Zhang Prof. Dr. Qian Zhao
		7	OPTIMIZATION OF THERMAL STABILITY IN COMPOSITE MATERIALS FOR AEROSPACE APPLICATIONS	Dr. Natalia Petrov Dr. Ilya Drozdenko
		8	IMPACT OF STRUCTURAL DESIGN ON THE PERFORMANCE OF BRIDGES UNDER SEISMIC LOADING CONDITIONS	Dr. Carlos Rodríguez Prof. Martina Serrano Dr. Felipe Duarte
		9	ENERGY-EFFICIENT MATERIALS IN CONSTRUCTION FOR REDUCING ENVIRONMENTAL IMPACT: A CASE STUDY	Dr. Jessica Thompson

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HALL / SALON 9	**Dr. Zanele Mthembu**	1	SYNTHESIS OF POLYMERIC NANOCOMPOSITES FOR ENVIRONMENTAL REMEDIATION OF PHARMACEUTICAL POLLUTANTS	Jonas Fischer Lena Becker
		2	REMOVAL OF HEAVY METALS USING FUNCTIONALIZED BIOSORBENTS FROM AGRO-WASTE	Prof. Dr. Amadou Diallo, Dr. Fatoumata Traoré
		3	DEVELOPMENT OF BIOSENSOR PLATFORMS FOR DETECTION OF ENVIRONMENTAL CONTAMINANTS	Maya Singh Ritu Sharma
		4	PHYSICAL AND CHEMICAL PROPERTIES OF HYDROGEL SYSTEMS CONTAINING ACTIVE PHARMACEUTICAL INGREDIENTS	Ravi Kumar, Manoj Kumar, Aakash Gupta
		5	OPTIMIZATION OF SOLID PHASE EXTRACTION FOR TRICYCLIC ANTIDEPRESSANT DRUGS IN URINE SAMPLES	Yasir Aslam, Farhan Ali, Sana Iqbal
		6	ANTIFUNGAL ACTIVITY OF NATURAL EXTRACTS FROM TRADITIONAL HERBS AGAINST COMMON PATHOGENS	Dr. Linda Pienaar, Dr. Zanele Mthembu
		7	ANALYSIS OF THE TOXICITY OF NANOPARTICLES IN AQUATIC ECOSYSTEMS: A COMPARATIVE STUDY	Kostas Papadopoulos, Nikoleta Georgiou, Ioannis Theodorou

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HALL / SALON 10	**Dr. Nattha Kaewnopparat**	1	DEVELOPMENT OF MOLECULAR IMPRINTED POLYMERS (MIPS) FOR THE SELECTIVE REMOVAL OF CARBAMAZEPINE FROM AQUEOUS SOLUTION	Bianca Schweiger, Lucile Bahnweg, Barbara Palm, Ute Steinfeld
		2	PENTACHLOROPHENOL REMOVAL VIA ADSORPTION AND BIODEGRADATION	Assis. Prof. Dr. Rakmi Abd.-Rahman Assis. Prof. Dr. Nurina Anuar
		3	FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS	Lecture Sanae Kaewnopparat Dr. Nattha Kaewnopparat
		4	ASAD ULLAH MADNI, MAHMOOD AHMAD, NAVEED AKHTAR, MUHAMMAD USMAN	Asad Ullah Madni Mahmood Ahmad, Naveed Akhtar, Muhammad Usman
		5	SERICIN FILM: INFLUENCE OF CONCENTRATION ON ITS PHYSICAL PROPERTIES	Assis. Prof. Dr. N. Namviriyachote N. Bang, P. Aramwit
		6	VALIDATION AND APPLICATION OF A NEW OPTIMIZED RP-HPLC-FLUORESCENT DETECTION METHOD FOR NORFLOXACIN	Mahmood Ahmad Ghulam Murtaza Sonia Khiljee Dr. Muhammad Asadullah Madni
		7	ANTIBACTERIAL CAPACITY OF PLUMERIA ALBA PETALS	Assis. Prof. Dr. M. H. Syakira Dr. L. Brenda

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HALL / SALON 11	**Prof. Dr. Ezenwa Chinenye Amanamba**	1	EVALUATION OF URBAN LAND DEVELOPMENT DIRECTION İN KABUL CITY, AFGHANISTAN	Ahmad Sharif Ahmadi Yoshitaka Kajita
		2	INFLUENCE OF PLACE IDENTITY ON WALKABILITY: A COMPARATIVE STUDY BETWEEN TWO MIXED USED STREETS CHAHARBAGH ST. ISFAHAN, IRAN AND DEREBOYU ST. LEFKOSA, NORTH CYPRUS	Assis. Prof. Dr. R. Rafiemanzelat
		3	RENEWED URBAN WATERFRONT: SPATIAL CONDITIONS OF A CONTEMPORARY URBAN SPACE TYPOLOGY	Assis. Prof. Dr. Beate Niemann, Fabian Pramel
		4	URBAN ECOLOGICAL INTERACTION: AIR, WATER, LIGHT AND NEW TRANSIT AT THE HUMAN SCALE OF BARCELONA'S SUPERILLES	Philip Speranza
		5	PERFORMANCE EVALUATION OF A 'PRIORITY-CONTROLLED' INTERSECTION CONVERTED TO SIGNAL-CONTROLLED INTERSECTION	Prof. Dr. Ezenwa Chinenye Amanamba
		6	DISCUSSION ABOUT FREQUENT ADJUSTMENT OF URBAN MASTER PLANNING İN CHINA: A CASE STUDY OF CHANGSHOU DISTRICT, CHONGQING CITY	Sun Ailu Zhao Wanmin
		7	HYBRID LIVING: EMERGING OUT OF THE CRISES AND DIVISIONS	Yiorgos Hadjichristou

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HALL / SALON 12	**Assis. Prof. Dr. Ondřej Nowak**	1	CORPORATE GOVERNANCE STRUCTURES AND OVERLAPPING DIRECTORATES IN THE CZECH REPUBLIC	Assis. Prof. Dr. Ondřej Nowak
		2	THE INFLUENCE OF STAKEHOLDER COMMUNICATION STRATEGIES ON CONSUMERS' ACCEPTANCE AND FINANCIAL PERFORMANCE: IN THE CONTEXT OF THE FERTILIZER INDUSTRY IN MALAYSIA	Hasnida Abdul Wahab Shahrina Md Nordin Lai Fong Woon Hasrina Mustafa
		3	EXAMINATION OF RUBBER WASTE UTILIZATION AT PANDORA PRODUCTION COMPANY LIMITED	S. Pechpoothong M. Kopystecki
		4	ADDRESSING MONEY LAUNDERING IN THE BANKING INDUSTRY: INSIGHTS FROM THE MALAYSIAN EXPERIENCE	Aspalella A. Rahman
		5	HYBRID ENERGY PROVISION WITH PREDOMINANTLY RENEWABLE CHOICE FOR SMALL INDUSTRIAL COMPLEX	Dr. Tomislav Stambolic, Anton Causevski
		6	STATISTICAL FORECASTING OF LIKELY DISTRESS IN NIGERIA'S BANKING SECTOR USING A NEURAL NETWORK APPROACH	Prof. Dr. D. A. Farinde
		7	EFFECTIVENESS IN URBAN ADMINISTRATION FOR THE SUSTAINABILITY AND COMPETITIVENESS OF A CITY: A CASE STUDY OF KUALA LUMPUR	Hamzah Jusoh Azmizam Abdul Rashid
		8	AN INVESTIGATION OF A NEURO-FUZZY INFERENCE SYSTEM FOR FORECASTING GROWTH IN GROSS DOMESTIC PRODUCT	Assoc. Prof. E. Giovanis
		9	HAZARDS OF LATE PAYMENT IN THE MALAYSIAN CONSTRUCTION INDUSTRY	Dr. Kho Mei Ye Hamzah Abdul Rahman

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HALL / SALON 1	**Prof. Dr. MUNİSE AKSÖZ**	1	TURKISH, ARABIC AND KURDISH NAMES IN THE NAME LISTS OF THE GERMAN	Prof. Dr. MUNİSE AKSÖZ
		2	STYLES FOUND BY STUDENTS IN THE POEMS OF CAHİT SITKI TARANCI	Prof. Dr. MUNİSE AKSÖZ
		3	DİVAN ŞİİRİNDE KÜLTÜREL BİR UNSUR OLARAK GİYSİ (19. YÜZYIL)	Dr. OĞUZ YILDIRIM
		4	ON THE HISTORICAL CHANGES IN THE GRAMMATICAL GENDER SYSTEM OF THE ARABIC LANGUAGE	DSc, associate professor Vugar Garadaghli
		5	DİLBİLİMDE SÖYLEM ANALİZİ NEDİR?	ILAHE NIYAZOVA

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HALL / SALON 2	**Dr. Öğr. Üyesi, ASLI KESKİN**	1	SERBEST MUHASEBECİ MALİ MÜŞAVİRLERİN ENFLASYON MUHASEBESİ UYGULAMALARI HAKKINDAKİ GÖRÜŞLERİ: NİTEL BİR ARAŞTIRMA	Dr. Öğr. Üyesi, ASLI KESKİN
		2	INFANT MORTALITY RATE in TERMS of HEALTH SERVİCE UTILIZATION and INVESTMENT: A PANEL DATA ANALYSIS for TURKEY	Dr.Öğr.Üyesi MERYEM DEMİRTAŞ
		3	THE RISKS POSED BY SOCIAL MEDIA INFLUENCERS: A CONCEPTUAL ANALYSIS FOR BRANDS	Yüksek Lisans Öğrencisi, FATMAGÜL PARLAK Doç.Dr. EVRİM ERDOĞAN YAZAR
		4	DUYGUSAL EMEK VE DUYGUSAL EMEK YAKLAŞIMLARI	Havva Bezirganoğlu Doç. Dr. Elvettin Akman
		5	A QUALITATIVE STUDY ON THE EVALUATION OF SUSTAINABLE DEVELOPMENT GOALS IN MARBLE ENTERPRISES IN TERMS OF ECONOMIC-SOCIAL AND ENVIRONMENTAL ASPECTS	Mehmet ÖZTÜRK Dr. Öğr. Üyesi, İbrahim ALKARA
		6	THE FUTURE OF ENERGY CONSUMPTION, ECONOMIC GROWTH, AND CARBON EMISSIONS IN TÜRKİYE: FORECASTING WITH THE ARIMA MODEL	Assist. Prof. Dr. Emre AKUSTA
		7	KARBON VERGİSİNİN ETKİNLİĞİ ÜZERİNE AMPİRİK BİR İNCELEME	Yüksek Lisans Öğrencisi, Emine ÖRS Doç. Dr. Dilek SÜREKÇİ YAMAÇLI
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HALL / SALON 3	**Prof. Dr. RAMAZAN BİÇER**	1	EXAMİNİNG THE RELATİONSHİP BETWEEN DARK TRİAD PERSONALİTY TRAİTS AND CRİMİNAL THİNKİNG AND SELF-ESTEEM	Master's Student, Melek Göksu COŞKUN Doç. Dr. Burcu TÜRK
		2	EXAMINATION OF PSYCHOLOGICAL RESILIENCE IN TERMS OF VARIOUS DEMOGRAPHIC VARIABLES	Psychological Counselor, HATİCE GÜLAS Associate Professor, SEHER MERVE ERUS
		3	PROBLEMLİ AKILLI TELEFON KULLANIMININ ÇEŞİTLİ DEMOGRAFİK DEĞİŞKENLER AÇISINDAN İNCELENMESİ	YURDAGÜL GÜMÜŞ Doç. Dr. SEHER MERVE ERUS
		4	TÜRKİYE'DE KÜRESEL İKLİM DEĞİŞİKLİĞİNE YÖNELİK FARKINDALIK	Dr. Öğr. Üyesi Ahmet Yasin ŞENYURT Gizem ADATEPE
		5	Religious Pluralism, Exclusivity and Inclusion	Prof. Dr. RAMAZAN BİÇER
		6	The possibility of global morality	Prof. Dr. RAMAZAN BİÇER
		7	MÜKELLEF OLMAYAN ÇOCUKLARIN ELEMİNE DAİR EHL-İ SÜNNET VE MU'TEZİLE AÇISINDAN KARŞILAŞTIRMA	HATİCE DEMİR
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HALL / SALON 4	**Prof.Dr. Nazan AVCIOGLU KALEBEK**	1	SİLENE AEGYPTİACA' BİTKİSİNİN GÜNEYDOĞU ANADOLU BÖLGESİ POPÜLASYONLARINDA TÜR DELİMİTASYONU	Yüksek lisans öğrenci, Mahmut ŞEN Dr. ERDAL ATEŞ Dr. Öğr. Üye Zeynep TOPRAK
		2	INVESTIGATION OF THE EFFECT OF ANTIBIOTIC RESISTANCE DEVELOPED IN *Klebsiella pneumoniae* WITH SUB-MINIMUM INHIBITORY CONCENTRATION AND CROSS-ANTIBIOTIC RESISTANCE ON BIOFILM FORMATION	MELIKA BIDOLLAHKHANI ERGIN MURAT ALTUNER
		3	PREDICTIVE MODELLING APPROACH TO UNDERSTAND THE COMBINED EFFECTS OF TEMPERATURE, pH, GLUCOSE, NaCl, AND MAGNESIUM ON *Klebsiella pneumoniae* BIOFILM DEVELOPMENT	MELIKA BIDOLLAHKHANI SELCEN GUL YUSUFOGLU ERGIN MURAT ALTUNER
		4	INVESTIGATION OF WATER RETAINING POLYMER HYDROGEL USED IN AGRICULTURE	Prof.Dr. Nazan AVCIOGLU KALEBEK
		5	DEFICIT IRRIGATION EFFECT ON SEED YIELD AND QUALITY OF PEPPER	BELKIS KAPLAN Prof. Dr. BİLAL ACAR Assoc. Prof. Dr. MUSA SEYMEN
		6	AN EGZOTIC SPECIES IN TURKISH FORESTRY: BLACK LOCUST	Dr. Öğrencisi, Tuğçe Baloğlu ERTAŞ Prof. Dr. Nebi BİLİR

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HALL / SALON 5	**Res. Asst. Ömer Atılım KOCA**	1	PERSONALIZED GLUCOSE PREDICTION FOR DIABETES MANAGEMENT WITH Q-LEARNING AND UNSCENTED KALMAN FILTER	Gözde Havin FİDAN Res. Asst. Ömer Atılım KOCA Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		2	REAL-TIME GLUCOSE PREDICTION WITH Q-LEARNING AND KALMAN FILTER FOR PERSONALIZED DIABETES MANAGEMENT	Gözde Havin FİDAN Res. Asst. Ömer Atılım KOCA Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		3	A BENCHMARK STUDY OF RECURRENT NEURAL NETWORKS WITH EXTENSIONS FOR GLUCOSE PREDICTION	Res. Asst. Ömer Atılım KOCA Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		4	BiLSTM-BASED TYPE-1 GLUCOSE PREDICTION WITH MULTI-PARAMETER INPUT ANALYSIS	Res. Asst. Ömer Atılım KOCA Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ
		5	CLASSIFICATION OF CHEST X-RAY IMAGES USING VISION TRANSFORMER	Mustafa Melik AYANOĞLU Res. Asst. Bengü FETİLER Res. Asst. Ömer Atılım KOCA Assoc. Prof. Volkan KILIÇ
		6	A HYBRID Q-LEARNING AND EXTENDED KALMAN FILTER APPROACH FOR REAL-TIME GLUCOSE PREDICTION IN DIABETES MANAGEMENT	Gözde Havin FİDAN Res. Asst. Ömer Atılım KOCA Res. Asst. Bengü FETİLER Assoc. Prof. Volkan KILIÇ

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		2	PMR TEKNOLOJİSİ İLE YERALTI SU PARAMETRELERİNİN SİSMİK SIVILAŞMA DEĞERLENDİRMELERİNE ENTEGRASYONU	Güven Doğan Prof. Dr. Özcan BEKTAŞ
		3	2020 İZMİR DEPREMİ: GEOTEKNİK AÇIDAN İNCELEME VE ZEMİN DAVRANIŞLARI	Dr., ESRA GÜNERİ Lisans Öğrencisi, SAMET GÜNCÜ
		4	INVESTIGATION OF GAMMA RADIATION SHIELDING PROPERTIES IN Fe-FeB-Cu-C MATERIALS	Arş. Gör. Tuana GEL Doç. Dr. Emre TABAR Dr. Gamze HOŞGÖR Dr. Mesut Ramazan EKİCİ
		5	DECARBONIZATION AND ENVIRONMENTAL SUSTAINABILITY STRATEGIES IN THE SHIPBUILDING INDUSTRY	Enes Tekelli Prof. Dr. Ayhan Menteş
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		7	YÜKSEK HIZLI TRENLERİN TÜRKİYE ULAŞIM AĞI İÇİNDEKİ YERİ VE TERCİH SEBEPLERİ	İnşaat Mühendisi,AYKUT TOPÇU Arş. Gör. Dr,ONUR ŞAHİN
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		2	PRECISION DRUG DELIVERY OF GLIBENCLAMIDE: EXPLORING THE IMPACT OF POLYVINYL PYRROLIDONE AND ETHYL CELLULOSE CONCENTRATION ON RELEASE PROFILES AND KINETICS	Dr. Stepan Arakelova, Assis. Prof. Dr. Lilia Arsenyan
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		5	FROM CONCEPT TO REALITY: THE DESIGN AND DEVELOPMENT OF A MECHANICAL FORCE GAUGE FOR SQUARE WATERMELON MOLDING	Dr. Bedi Neayti Singh Phd. Candidate Balvinder Thakur,
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		3	EFFECT OF FERMENTATİON TİME ON XANTHAN GUM PRODUCTİON FROM SUGAR BEET MOLASSES	Marzieh Moosavi- Nasab, Safoora Pashangeh, Assis. Prof. Dr. Maryam Rafsanjani
		4	UTİLİZATİON JUİCE WASTES AS CORN REPLACEMENT İN THE BROİLER DİET	Yose Rizal, Maria Endo Mahata, Mira Andriani, Guoyao Wu
		5	SURVEY OF IMPACT OF PRODUCTİON AND ADOPTİON OF NANOCROPS ON FOOD SECURİTY	Sahar Dehyouri, Seyed Jamal Farajollah Hosseini
		6	SOUS VİDE PACKAGİNG TECHNOLOGY APPLİCATİON FOR SALAD WİTH MEAT İN MAYONNAİSE SHELF LİFE EXTENSİON	Vita Levkane, Sandra Muizniece-Brasava, Lija Dukalska
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		3	OPTIMIZATION OF EXTRACTION OF PHENOLIC COMPOUNDS FROM AVICENNIA MARINA (FORSSK.)VIERH USING RESPONSE SURFACE METHODOLOGY	V.Bharathi, Jamila Patterson, R.Rajendiran
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		5	INTERACTION EFFECT OF DGAT1 AND COMPOSITE GENOTYPE OF BETA-KAPPA CASEIN ON ECONOMIC MILK PRODUCTION TRAITS IN CROSSBRED HOLSTEIN	A. Molee, N. Duanghaklang, P. Mernkrathoke
		6	REVEA LING CASEIN MICELLE DISPERSION UNDER VARIOUS RANGES OF NACL: EVOLUTION OF PARTICLES SIZE AND STRUCTURE	Raza Hussain, Claire Gaiani, Joël Scher
		7	PROCESS DEVELOPMENT OF SAFE AND READY-TO-EAT RAW OYSTER MEAT BY IRRADIATION TECHNOLOGY	Pattama Ratana-Arporn, Pongtep Wilaipun
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		9	VISUALIZED CHARACTERIZATION OF MOLECULAR MOBILITY FOR WATER SPECIES IN FOODS	Dr. Yasuyuki Konishi, Masayoshi Kobayashi

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		2	IMPLEMENTATION OF MICROSOFT TECHNOLOGIES IN COURSEWORK – AN INSTANCE STUDY	Lilac Al Safadi, Rana Abu Nafesa, Regina Garcia
		3	CYBERSPACE: A NOVEL MEDIUM TO ADVANCE TRADITIONAL DANCES IN INDONESIA PERSIAN BAZAARS: THE DEMONSTRATION OF STABLE IDEAS	Dr. Maria Satya Rani, Fandy Tjiptono, Suyoto
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MANYETİK Fe3O4 PARÇACIKLARI İLE BOYA UZAKLAŞTIRILMASI

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ÖZET

Kozmetik, ilaç, boya, plastik, deri ve tekstil gibi endüstriler yüksek miktarda boya kullanırlar. Bu boyaların büyük miktarı atık su olarak salınır. Bu durum çevresel yaşantıya ve insan sağlığına ciddi bir tehdit oluşturur. Çevre kirliliğinin yanı sıra, özellikle azo boyalar kanserojen özellik gösterebilmektedir. Bu nedenle atık sudan boyaların uzaklaştırılması ele alınması gereken önemli bir konudur. Bu konuda kullanılan metotlar arasında ozonlama, iyon değişimi, ekstraksiyon, elektroforez, flotasyon, flokülasyon, koagülasyon, biyolojik işlem, oksidasyon, degradasyon, filtrasyon ve adsorpsiyon sayılabilir. Bu işlemler arasında maliyet ve uygulama kolaylığı konuları düşünüldüğünde adsorpsiyon yöntemi avantajlı bir seçenek olarak gözükmektedir. Çalışma kapsamında parlak mavi R boyasının manyetik Fe_3O_4 (demir (II, III) oksit) parçacıkları ile adsorpsiyon yöntemi kullanılarak uzaklaştırılması sağlanmıştır. Parçacıkların sentezinde demir (II) ve demir (III) kaynağı olarak sırasıyla $FeCl_3.H_2O$ ve $FeSO_4.7H_2O$ kullanılmıştır. Manyetik özellikte olması sayesinde adsorpsiyon işlemi sonrasında bir magnet yardımıyla kolaylıkla sudan ayrışması sağlanabilecektir. Boya uzaklaştırma performansları ultraviyole absorpsiyon spektroskopisi yardımıyla incelenmiştir. Değişen boya konsantrasyonuna bağlı olarak elde edilen en yüksek uzaklaştırma oranı %89,4 ve gram adsorbent başına uzaklaştırılan boya miktarı 272,9 $mg_{boya}/g_{adsorbent}$ olarak hesaplanmıştır.

Anahtar Kelimeler: Adsorpsiyon, boya, adsorbent, demir oksit

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BİYOLOJİK ARITILMIŞ ORGANİK PEROKSİT ÜRETEN KİMYA ENDÜSTRİSİ ATIKSUYUNUN UV/TiO2 OKSİDASYON PROSESİ KULLANILARAK İLERİ ARITIMI

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ÖZET

Kimya endüstrisi atıksuları biyolojik arıtılabilirliği zor kalıcı organik bileşikler içerdiğinden biyolojik arıtma sonrasında ileri oksidasyon prosesleri ile ileri arıtıma ihtiyaç duyulmaktadır. Bu çalışmada organik peroksit üreten kimya endüstrisi atıksuyunun biyolojik arıtma sonrasından alınan atıksuyunun UV/TiO_2 oksidasyon prosesi ile arıtılabilirliği araştırılmıştır. Bu amaç kapsamında farklı pH (3-11) değerlerinde ve farklı TiO_2 konsantrasyonu (0,5-5,0 g/L) aralığında atıksu arıtımı yapılarak en iyi KOİ ve renk giderimi sağlanan koşullar belirlenmiştir. UV/TiO_2 oksidasyonu 11W UVC lambası ile 200 mL atıksu numunesi kullanılarak yapılmıştır. Çalışmada farklı pH ve TiO_2 konsantrasyonlarında yapılan atıksu arıtımında en iyi KOİ ve renk giderimi pH 3 değerinde ve 2000 mg/L TiO_2 konsantrasyonunda elde edilmiştir. Bu koşullarda 90 dakika oksidasyon sonunda atıksuda %46,9 KOİ ve %96,8 renk giderimi gözlenmiştir. Bazik koşullarda atıksudaki KOİ ve renk gideriminin azaldığı gözlenmiştir. Sonuç olarak organik peroksit üreten kimya endüstrisi atıksuyunun biyolojik arıtma sonrasında kalıcı organik kirleticilerin giderimi için UV/TiO_2 oksidasyon prosesinin uygulanabileceği görülmüştür.

Anahtar Kelimeler: Atıksu, TiO_2, kimya endüstrisi, oksidasyon

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BİYOLOJİK ARITILMIŞ KAĞIT ENDÜSTRİSİ ATIKSUYUNDAN ADSORPSİYON PROSESİ İLE RENK GİDERİMİ

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ÖZET

Bu çalışmada biyolojik olarak arıtılmış kağıt endüstrisi atıksuyunun adsorpsiyon prosesi ile ileri arıtımı araştırılmıştır. Bu amaç kapsamnında hindistan cevizi ve kömür esaslı aktif karbon kullanılmış ve atıksuda renk ve ABS(254 nm) giderimi incelenmiştir. Her iki aktif karbon ile farklı pH değerlerinde ve aktif karbon dozlarında atıksu arıtımı yapılmıştır. pH 2 değerinde adsorpsiyon ile daha yüksek renk ve ABS(254 nm) giderimi gözlenirken, pH 11 değerinde atıksuda çöktürme de oluştuğu için renk ve ABS(254 nm) giderimi yüksek elde edilmiştir. Aktif karbon dozunun 70 g/L'ye kadar artması atıksudaki renk ve ABS(254 nm) giderimini arttırmıştır. Hindistan cevizi esaslı aktif karbona göre, kömür esaslı aktif karbon ile daha yüksek renk ve ABS(254 nm) giderimi elde edilmiştir. Biyolojik olarak arıtılmış kağıt endüstrisi atıksuyunda en iyi arıtım kömür esaslı aktif karbon ile pH 2 değerinde ve 70 g/L aktif karbon dozunda elde edilmiş ve bu şartlarda yapılan adsorpsiyon sonunda %87,3 renk ve %92,4 ABS(254 nm) giderimine ulaşılmıştır. Sonuç olarak kağıt endüstrisi atıksuyunun biyolojik arıtma sonrasında adsorpsiyon prosesi ile ileri arıtımında renk gideriminin sağlanabileceği ve aynı zamanda aromatik bileşiklerin de giderilebileceği görülmektedir.

Anahtar Kelimeler: Aktif karbon, ileri arıtma, renk giderimi

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DEVELOPMENT AND CHARACTERIZATION OF BIO-BASED EPOXY COMPOSITES REINFORCED WITH OKRA LEAF POWDER AND PALM OIL FOR ENHANCED THERMOPHYSICAL PERFORMANCE

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ABSTRACT

As global environmental awareness grows, the demand for sustainable, biodegradable, and eco-friendly materials has become increasingly important, particularly in polymer composites. Petroleum-based synthetic polymers, while widely used, pose significant environmental challenges due to their non-biodegradable nature and reliance on finite fossil resources. This study explores the development of an environmentally friendly epoxy composite material by incorporating two natural additives: okra leaf powder (OLP) and palm oil (PO). Okra (*Abelmoschus esculentus*) leaves, obtained from local agricultural sources, were dried under controlled laboratory conditions, ground into a fine powder, and used as a bio-filler. Palm oil, a natural and biodegradable plasticizer, was added to enhance the flexibility and thermal behavior of the biocomposites. Various formulations were prepared by adding OLP in different weight percentages (0, 1, 2, and 4 wt.%) along with the constant (1 wt.%) PO in selected samples. The mixtures were mechanically stirred at 600 rpm for 3 min, followed by component B and a further 2 min of stirring the process. The resulting mixtures were cast into molds and cured at 50 °C for 24 hours. Comprehensive physical, mechanical, and thermophysical characterizations were conducted to evaluate the influence of the bio-additives on the composite performance. The findings demonstrate that OLP and PO incorporation can improve material properties while contributing to environmental sustainability. This approach highlights the potential of agricultural waste valorization in advanced materials engineering, promoting a circular economy and reducing the ecological footprint of synthetic polymer composites.

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Keywords: Biocomposite, Okra leaf powder, Palm oil, Epoxy resin, Thermophysical properties, Sustainable materials

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MİKROALG/ALGİNAT YEŞİL ADSORBAN İLE SULU ÇÖZELTİDEN MANGAN GİDERİMİ

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ÖZET

Günümüz dünyasında en büyük çevre sorunlarından biri olarak su kirliliği karşımıza çıkmaktadır. Evsel ve endüstriyel atık suların su ekosistemine arıtılmadan verilmesi çevrenin flora ve faunasına ciddi zarar verecektir. Aşırı nüfus artışı, küresel ısınma su kaynaklarımızı tehdit etmektedir. Dünya ortalama sıcaklıklarının artması özellikle yaz aylarında su kaynaklarında hızlı buharlaşmaya neden olmakta bu da su kıtlığını yaratmaktadır. Küresel su kıtlığı sorunuyla mücadele etmek ve su kalitesini iyileştirmek için membran filtrasyonu, kimyasal oksidasyon, elektro-pıhtılaşma, elektrokimyasal yöntem, iyon değişimi gibi farklı arıtım teknolojileri uygulanmaktadır. Bu teknolojilerin dezavantajları arasında güvenli olmayan kimyasalların kullanımı, toksik yan ürünlerin oluşması, yüksek maliyet ve zaman alıcılığı sayılabilir. Yenilikçi adsorbanların geliştirilmesinin mümkün olduğu adsorpsiyon yöntemi, diğer geleneksel yöntemlere göre maliyet etkinliği ve geliştirilmesi daha kolay bir sistem olması gibi avantajlara sahiptir. Yeşil adsorban sentezi, etkili ve ekonomik olan doğal ürün kullanımıyla yapıldığından çevre dostu bir tekniktir. Adsorpsiyonun çevresel sürdürülebilirlik değerlendirmesi ise yeşil adsorban sentezi ile mümkündür. Döngüsel ekonomi kavramı, tüketimin azaltılması, hammadde, su ve enerji tasarrufu sağlanması ile sürdürülebilir kalkınmayı hedefler. Algal biyokütlesinin kullanımı, su ve atık su arıtımını sağlayarak çevreye, biyoyakıt üreterek ekonomiye ve gıda, kozmetik, ilaç, gübre, hayvan yemi üreterek topluma fayda sağlar. Bunun yanısıra algler sera gazı emisyonlarını azaltarak da küresel iklim sorununun çözümüne de katkı sağlayabilirler. Bu çalışmada makroalg olarak deniz yosunu aljinat matrisi içine mikroalg biyokütlesi katılarak yeşil adsorbent küreleri oluşturulmuştur. Geliştirilen adsorban ile mangan giderimi gerçekleştirilmiştir

Anahtar Kelimeler: Doğal adsorbent, sentez, mikroalg, alginat, mangan giderimi

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FUSARIUM FUNGI PATHOGENS: IDENTIFICATION, IMPACT ON PLANT HEALTH, AND THE ADOPTION OF INNOVATIVE TECHNOLOGICAL STRATEGIES FOR DISEASE MANAGEMENT AND SUSTAINABLE AGRICULTURE

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Abstract:

Over the past several centuries, *Fusarium* pathogens have been documented for the first time and continue to garner considerable attention from researchers around the world. This interest is largely attributed to their pathogenic effects on various plant species, their capacity for mycotoxin production, and the resulting introduction of harmful metabolites into the food supply. The accelerating impact of climate change is causing shifts in pathogen populations globally, highlighting the necessity for continuous research to understand the factors affecting virulence and disease severity. Furthermore, there is an urgent need to effectively implement technological strategies to improve control measures and promote sustainable agricultural practices.

Plant parts from infected plants were typically utilized for the isolation and identification of the fungal species responsible for the infection, employing colony characterization and microscopic morphology analysis. Furthermore, final confirmation of the pathogens could be achieved through PCR amplification and sequencing, using primers specific to fungi and *Fusarium* species.

The heavy reliance on chemical control for managing *Fusarium* diseases in food crops is increasingly questionable due to the development of resistance within pathogen populations and the associated environmental impacts. Thus, improving our understanding of the complex dynamics of host-microbe interactions that contribute to disease, along with the application of targeted technologies, can enhance our ability to manage *Fusarium* diseases effectively. This review examines the identification and pathogenicity of *Fusarium* species and addresses future challenges in implementing various technological management strategies for these diseases to maintain sustainable agriculture.

Key words: *Fusarium* species, Technological Management, Agricultural sustainability

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COMPARISON OF EVOLUTIONS OF INTERNAL EROSION IN HOMOGENEOUS EARTH-FILL DAMS BUILT WITH MEDIUM SAND-CLAY MIXTURE WHEN THE SEEPAGE IS AT BOTTOM OR AT MIDDLE PART OF THE DAM

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ABSTRACT

One of the most significant reasons for earth-fill dam failures is internal erosion resulting from piping. This research was carried out as a part of the project 119M609 supported financially by the Scientific and Technological Research Council of Turkey. This paper involves experimental investigations with two different scenarios to look into the breach process and provide the data for more realistic numerical evaluations. The location of the weak layer was at bottom or at middle part, along the centerline. The experiments were conducted at Hydraulics Laboratory of Civil Engineering Department within İzmir University of Economics. The homogeneous earth-fill dams having a bottom width of 2 m were built in a flume 1.00 m wide, 0.81 m high and 5.44 m long. Some common soil mechanics tests were also carried out before the dam was built. The dam bodies were constructed by using a mixture of 15 % clay and 85 % medium sand. High-precision cameras were used to record the temporal development of the breach resulting from the piping. The pump flow rate was measured by a magnetic flowmeter and the flow rate values outgoing from the breach were determined from the continuity equation. Gauss area formula was used to obtain the time-varied values of the breach areas. The temporal changes of water depth in the channel were also recorded. The so obtained experimental findings are presented and commented.

Keywords: Earth-fill dam; Homogeneous dam; Piping; Internal erosion; Breach development; Discharge from breach.

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SYNTHESIS OF BUTLY-SUBSTITUTED 4-THIAZOLIDINONE COMPOUNDS VIA ONE-POT MULTICOMPONENT REACTION

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ABSTRACT

The synthesis of butyl-substituted 4-thiazolidinone derivatives was achieved through a one-pot multicomponent reaction (MCR), providing an efficient and streamlined approach for the construction of heterocyclic frameworks. The reaction proceeded via the condensation of butylamine, an aldehyde, thioisocyanate under optimized conditions, affording the target compounds with high efficiency. This methodology offers significant advantages, including operational simplicity, mild reaction conditions, and reduced purification requirements, rendering it a practical and sustainable synthetic strategy. The structural characterization of the synthesized derivatives was conducted using nuclear magnetic resonance (NMR) and Fourier-transform infrared (FT-IR) spectroscopy, confirming the formation of the desired products. The proposed synthetic approach constitutes a valuable and scalable route for the preparation of bioactive 4-thiazolidinone derivatives with potential applications in pharmaceutical and biomedical research.

Keyword: Thiazolidinone, Iminothiazolidinone, Multicomponent reaction.

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THE ROLE OF BIG DATA IN DECISION SUPPORT SYSTEMS FOR INTERIOR DESIGN

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ABSTRACT

This research critically examines the nature of big data and its potential to positively influence interior design through its application in decision-making processes. As design processes increasingly transition to digital formats, data-driven design in architectural and urban planning may establish the basis for urban information modeling. Interior design approaches can contribute to building modeling by offering insights into spatial arrangements and the activities conducted within such spaces. The data-driven design informed by such data would allow spaces to react to users' physical movements in real time and adapt to the rapid evolution of usage processes within complicated design challenges. Traditional design data, like materiality, color, and assembly, can now be quantified, together with newly collected data in the field of architectural design. For practitioners, the precise acquisition of environmentally pertinent data following a comprehensive component evaluation can enhance design processes, from programming to the overarching comprehension of the built environment. The suggested combined dataset offers design analytics researchers a more dependable method for examining design outputs, processes, and decision-making. This line of thought aims not to restrict the data relevant for future design nor to make definitive assertions, but to outline the broader transformations within the field and their implications for the architectural design industry. The crucial aspect is that for future-oriented decision-making challenges, scenarios predicated on situations outside conventional reasoning can be evaluated without necessitating compromise or the iterative processes of experimentation with space, materials, and application. The primary objective of this comprehensive discourse is to comprehend the implications of big data for design and to explore strategies for tackling the challenges linked to the thorough analysis of practices, disciplinary frameworks, and novel forms of future design data organized by relevant data analytics tools and methodologies.

Keywords: Big Data, Decision Support System, Interior Design,

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WASTE MANAGEMENT AND CIRCULAR ECONOMY PRACTICES IN INTERIOR SPACES

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ABSTRACT

In densely populated urban environments, where consumption patterns are consistently and continuously on the rise, various stakeholders, including interior designers, architects, and sustainability experts, are actively exploring innovative and efficient health-conscious design techniques specifically tailored to meet the unique needs of these crowded and bustling spaces. These techniques are specifically tailored to meet the requirements of these spaces. The purpose of this inquiry is to investigate contemporary interior design methods that are centered on waste management, as well as the ideas of circular economy, which aim to reduce waste and promote sustainability within interior spaces. Through the utilization of qualitative content evaluation methodologies, it is possible to improve one's comprehension of the best practices that are currently being followed in this field. Additionally, the report emphasizes crucial areas of concentration that demand attention, such as furniture design innovations prioritizing recyclability, interior solutions produced for corporate spaces, and the integration of sustainable practices into dynamic interior settings. The ultimate objective is to build a comprehensive framework that not only offers ideas that may be implemented to enhance waste management procedures, but also stimulates efforts that are both impactful and sustainable, particularly in the field of interior design. The purpose of this effort is to contribute to a more environmentally friendly, healthier, and responsible way of life in urban areas, with the ultimate goal of promoting a sustainable future for urban living practices.

Keywords: Waste Management, Circular Economy, Interior Spaces

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EFFECT OF THE CUTTING PARAMETERS ON DRILLING OF GGG40 MATERIAL ON A LATHE

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ABSTRACT

In this study, an experimental work was carried out on an universal lathe. DIN GGG-40 ductile iron was drilled by TiAlN coated carbide twist drills. The drills manufactured with coolant holes and Ø14 mm diameter. In the tests, different cutting parameters, such as 3 spindle speed (1000, 1400, 2000 rev/min), 3 feedrate (0.18, 0.24, 0.32 mm/rev) were applied. The test parts were prepared by turning processing method for Ø25 mm as diameter and 50 mm as length. Then, all specimens were grinded with the same setting machine parameters. A Taguchi model, L9, was used to organize the experiments. In the tests, cutting forces and temperature were measured. The cutting forces including torques (Mz) and feed forces (Fz) were gotten by using a dynamometer, called Kistler 9272. An apparatus were designed and manufactured to mount the dynamometer on the universal lathe. The temperatures, during the drilling process, were investigated by using two thermocouples that passed through the drill's coolant holes. Taguchi and ANAVO analysis were done to evaluate the results of the tests. Main effects factors, such as spindle speed and federate, were determined for drilling DIN GGG-40 material.

The experimental results showed that torques and feed forces increased with increasing federate. In addition, the temperature is gone down due to increasing the spindle speed. But, it has been revealed that temperature has a positive effect on reducing feed force and torque.

Keywords: GGG40, Drilling, Cutting forces, Taguchi, ANOVA

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BİR TORNA TEZGAHINDA GGG40 MALZEMESİNİN DELİNMESİNE KESME PARAMETRELERİN ETKİSİ

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ÖZET

Bu çalışmada, üniversal bir torna tezgâhında deneysel bir çalışma yürütülmüştür. DIN GGG-40 dökme demir, TiAlN kaplamalı helisel karbür matkapları ile delinmiştir. Matkaplar, Ø14 mm çapında olup üzerinde içten soğutma kanaları bulunmaktadır.. Deney numuneleri, Ø25 mm ve 50 mm boyda tornalanmış ve yüzeyleri taşlanmıştır. Deneylerde üç farklı devir (1000, 1400 ve 2000 dev/dak), üç farklı ilerleme hızı (0.18, 0.24, 0.32 mm/dev) kullanılmıştır Deneyler için Taguchi modeli, L9 kullanılmıştır. Delik delme deneylerinde meydana gelen kuvvetler ve sıcaklık ölçülmüştür. Delme torku (Mz) ve delme kuvveti (Fz), Kistler 9272 kodlu bir dinamometre ile ölçülmüştür. Dinamometreyi üniversal torna tezgâhına bağlamak için bir aparat tasarlanmış ve üretilmiştir. Delme işlemi sırasında sıcaklık, matkabın soğutma kanallarına yerleştirilen iki adet K tipi termokupl ile tespit edilmiştir. Deney sonuçlarının değerlendirilmesinde Taguchi ve ANAVO analizleri yapılmıştır. GGG-40 malzemesinin delinmesinde oluşan tork, kuvvet ve sıcaklılar üzerinde devir ve ilerleme parametrelerinin etkileri belirlenmeye çalışılmıştır.

Deneysel sonuçları, tork ve kuvvetin artan ilerleme arttığını göstermiştir. Bununla birlikte, artan devir ile sıcaklığın düşüşe geçtiğini ortaya koymuştur. Fakat sıcaklığın ise, tork ve kuvvetin düşürülmesinde olumlu etkisi olduğu görülmüştür.

Anahtar Kelimeler: GGG40, Drilling, Cutting forces, Taguchi, ANOVA

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COVERINGS OF IRRESOLUTE TOPOLOGICAL GROUPS

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ABSTRACT

Levine first introduced the concept of *semi-open* sets in 1963 and examined their fundamental properties within topological spaces [1]. In a topological space τ, a subset S is called semi-open if there exists an open set U in τ such that U⊆S⊆Cl(U) or equivalently, if S⊆Cl(Int(S)). Based on this notion, Kocinac in [2] later introduced *s-topological groups* and *S-topological groups* . In further developments, the concept of *irresolute topological groups* was defined using irresolute functions, and various topological properties of these groups were investigated [3].

An important result in the theory of topological group coverings states that if X is a topological group with a semi-locally simply connected topology, then the category Cov\X of covers of X in the category of topological groups is equivalent to the *category*$\mathrm{Cov}_{\mathrm{GrGd}}(\Pi X)$ of covers of its fundamental groupoid in the category of group-groupoids [4]. This result was later generalized to topological groups with operations in [5].

In this study, the result mentioned above, originally obtained for topological groups, will be extended to irresolute topological groups by utilizing the concept of semi-open sets. This approach aims to provide a broader framework for covering space theory in settings where continuity is replaced by irresoluteness, highlighting the role of semi-open structures in categorical equivalences.

Key words : Irresolute Topological Group,Covering,Spaces,Irresolute Coverings.

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COVERINGS AND ACTIONS OF IRRESOLUTE TOPOLOGICAL GROUPOIDS

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ABSTRACT

The concept of semi-open sets was first introduced by Levine in 1963, who explored their basic properties within the context of topological spaces [1]. A subset S of a topological space τ\tauτ is said to be semi-open if there exists an open set U in τ such that U⊆S⊆Cl(U), or equivalently, if S⊆Cl(Int(S)). Kocinac in [2] later defined s-topological and S-topological groups . In subsequent work, the notion of irresolute topological groups was introduced by using irresolute functions, and many of their topological properties have since been studied in detail [3].

The theory of covering groupoids plays an important role in the applications of groupoids [4]. In [5] it was proved that for a topological groupoid *G*, the category CovTopGpd/*G* of topological groupoid coverings over *G* and the category ActTopGpd(*G*) of topological actions of *G* on topological spaces are equivalent. This result was extended in [6] to topological internal groups within the category of topological groups with operations..

This study aims to construct the aforementioned results in the context of irresolute topological groups.

Key words : Irreolute topological groups, Coverings of topological groupoids, Actions of topological groupoidsEn az 3 anahtar kelime olmalıdır.

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NATIONWIDE STUDY ON THE SHIFT FROM CLSI TO EUCAST IN THE ANTIBIOTIC RESISTANCE PATTERNS OF *ESCHERICHIA COLI* ISOLATED FROM WOMEN WITH URINARY TRACT INFECTIONS

İDRAR YOLU ENFEKSİYONU OLAN KADINLARDAN İZOLE EDİLEN *ESCHERICHIA COLI*'NİN ANTİBİYOTİK DİRENÇ MODELLERİNDE CLSI'DEN EUCAST'A GEÇİŞ ÜZERİNE ÜLKE ÇAPINDA BİR ÇALIŞMA

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ABSTRACT

This study was carried out to investigate whether the antibiotic resistance profile of *Escherichia coli* obtained from female patients with urinary tract infections is changed by the transition from Clinical and Laboratory Standards In-stitute (CLSI) to European Committee on Antimicrobial Susceptibility Testing (EUCAST). This retrospective study covered two separate one-year periods between in 2012 and 2021. A total of 30 clinical microbiology laboratories in Turkey were included in the study. Bacterial identification was performed using the VITEK-2 GN ID card and MALDI-TOF automated systems. Antimicrobial susceptibility of *E. coli* strains was tested using the Kirby-Bauer technique and VITEK-2 AST cards. Double-disk synergy and double-disk diffusion tests were used for Extended Spectrum Beta-Lactamase (ESBL) detection. The study was conducted on bacterial strains obtained from patients aged 18-65. Antibiotic susceptibility was assessed using various antibiotic disks. As a result of this study, piperacillin, amoxicillin+clavulanic acid, cefazolin, piperacilin, cefepime and ceftriaxone resistance rates and Extended Spectrum Beta-Lactamase rates increased, while the percentages of resistance to other antibiotics decreased in the tran-sition from CLSI guideline to EUCAST guideline, and Plan Rational Drug Use policies. The positive marks of CLSI to EUCAST

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transition and National Action Plan Rational Drug Use applications have started to reflect on antibiotic susceptibility results. In conclusion, changes in antibiotic susceptibility demonstrate the impact of guideline changes and Rational Drug Use policies, and it has been demonstrated that such regulations can play an important role in combating antibiotic resistance.

Keywords: *Escherichia coli*, urinary tract infections, antibiotic resistance, rational drug use policies

ÖZET

Bu çalışma, idrar yolu enfeksiyonu olan kadın hastalardan elde edilen *Escherichia coli*'nin antibiyotik direnç profilinin Klinik ve Laboratuvar Standartları Enstitüsü'nden (CLSI) Avrupa Antimikrobiyal Duyarlılık Testleri Komitesi'ne (EUCAST) geçişle değişip değişmediğini araştırmak amacıyla gerçekleştirildi. Bu retrospektif çalışma 2012-2021 yılları arasındaki iki ayrı bir yıllık dönemi kapsadı. Çalışmaya Türkiye'deki toplam 30 klinik mikrobiyoloji laboratuvarı dahil edildi. Bakteriyel identifikasyon VITEK-2 GN ID kartı ve MALDI-TOF otomatize sistemleri kullanılarak yapıldı. *E. coli* suşlarının antimikrobiyal duyarlılığı Kirby-Bauer tekniği ve VITEK-2 AST kartları kullanılarak test edildi. Genişlemiş Spektrumlu Beta-Laktamaz (ESBL) tespiti için çift disk sinerji ve çift disk difüzyon testleri kullanıldı. Çalışma 18-65 yaş aralığındaki hastalardan elde edilen bakteri suşları üzerinde gerçekleştirildi. Antibiyotik duyarlılığı çeşitli antibiyotik diskleri kullanılarak değerlendirildi. Bu çalışma sonucunda, piperasilin, amoksisilin+klavulanik asit, sefazolin, piperasilin, sefepim ve seftriakson direnç oranları ve Genişletilmiş Spektrumlu Beta-Laktamaz oranları artarken, diğer antibiyotiklere karşı direnç yüzdeleri CLSI kılavuzundan EUCAST kılavuzuna geçiş sonrasında ve Akılcı İlaç Kullanımı politikaları ile azaldı. CLSI'dan EUCAST'a geçişin ve Ulusal Eylem Planı Akılcı İlaç Kullanımı uygulamalarının olumlu izleri antibiyotik duyarlılığı sonuçlarına yansımaya başladı. Sonuç olarak, antibiyotik duyarlılığı üzerindeki değişimler, kılavuz değişiklikleri ve Akılcı İlaç Kullanımı politikalarının etkisini göstermekte olup, bu tür düzenlemelerin antibiyotik direnciyle mücadelede önemli bir rol oynayabileceği ortaya konulmuştur.

Anahtar kelimeler: *Escherichia coli*, idrar yolu enfeksiyonları, antibiyotik direnci, akılcı ilaç kullanım politikaları

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THE ROLE OF BACTERIAL AGENTS IN THE ETIOLOGY OF PROSTATIC INFECTIONS

PROSTAT ENFEKSİYONLARININ ETİYOLOJİSİNDE BAKTERİYEL AJANLARIN ROLÜ

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ABSTRACT

Prostatitis, which is generally seen in young and middle-aged men and manifests itself with basic clinical symptoms such as urinary tract irritation and chronic pelvic pain, is a disease caused by different reasons. The aim of this study is to investigate bacterial agents thought to play a role in the etiology of prostatitis using molecular techniques from prostatitis tissue. In this study, 80 prostate biopsy materials were examined. Paraffin-embedded formalin-fixed (FFPE) tissue pieces were used for molecular techniques. Primers were designed to detect DNA from bacteria considered as potential causative agents. As a heterologous target, the human glyceraldehyde-3-phosphate dehydrogenase (GAPDH) gene was used as an internal control. *Escherichia coli* ATCC 25922 was used as a positive control. The records of 80 patients diagnosed histopathologically with prostatitis were evaluated in detail. After eliminating patients who did not meet the inclusion criteria, 45 patients were included in the study. In the study, all samples were found positive for the internal control and all samples were negative for the tested strains. In conclusion, we believe that known bacteriological agents, including *E. coli*, which is a member of the flora and the most frequently discussed etiology of prostatitis, are not the primary cause of prostatitis. In order to generalize the results, prospective studies are needed where the number of cases is high and other types of microorganisms and bacteria are also investigated.

Keywords: prostatitis, prostate tissue, bacterial prostatitis, polymerase chain reaction.

ÖZET[1]

Genellikle genç ve orta yaşlı erkeklerde görülen, idrar yolu tahrişi ve kronik pelvik ağrı gibi temel klinik belirtilerle kendini gösteren prostatit, farklı nedenlerden kaynaklanan bir hastalıktır. Bu çalışmanın amacı, prostatit etiyolojisinde rol oynadığı düşünülen bakteriyel ajanların prostatit dokusundan moleküler tekniklerle araştırılmasıdır. Bu çalışmada, 80 prostat biyopsi materyali incelendi. Parafine gömülü formalin ile fikse edilmiş (FFPE) doku parçaları moleküler teknikler için kullanıldı. Potansiyel etken olarak düşünülen bakterilerden DNA saptanması için primerler tasarlandı. Heterolog hedef olarak insan glikeraldehit-3-fosfat dehidrojenaz (GAPDH) geni iç kontrol olarak kullanıldı. Pozitif kontrol olarak *Escherichia coli* ATCC 25922 kullanıldı. Prostatit tanısı histopatolojik olarak konmuş 80 hastanın kayıtları detaylı olarak değerlendirildi. Dahil etme kriterlerini karşılamayan hastalar elendikten sonra, 45 hasta çalışmaya dahil edildi. Çalışmada, tüm örnekler iç kontrol açısından pozitif bulundu ve tüm örnekler test edilen suşlar için negatif bulundu. Sonuç olarak, dermal floranın bir üyesi olan ve prostatitin en sık tartışılan etiyolojisi olan *E. coli* dahil bilinen bakteriyolojik ajanların prostatitin primer nedeni olmadığına inanıyoruz. Sonuçların genellenebilmesi için vaka sayısının fazla olduğu, diğer mikroorganizma ve bakteri türlerinin de araştırıldığı prospektif çalışmalara ihtiyaç vardır.

Anahtar kelimeler: prostatit, prostat dokusu, bakteriyel prostatit, polimeraz zincir reaksiyonu.

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KADINLARDA CİNSEL SAĞLIK OKURYAZARLIK DÜZEYİNİ NELER ETKİLİYOR? BİR LİTERATÜR İNCELEMESİ ÖRNEĞİ

WHAT AFFECTS THE LEVEL OF SEXUAL HEALTH LITERACY IN WOMEN? A LITERATURE REVIEW EXAMPLE

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Özet:

Bu derleme; kadınlarda cinsel sağlık okuryazarlık düzeyini etkileyen faktörlerin belirlenmesi amaçlanmıştır. Bu çalışmada literatür taraması CINAHL, EMBASE, PsycINFO, PubMed and Web of Science veri tabanlarından 2018-2024 yılları arasında ‘‘Cinsel sağlık okuryazarlığı’’, ‘‘kadın sağlığı’’, ‘‘cinsel eğitim’’, ‘‘cinsel sağlık’’ anahtar kelimeleri ile tarama yapılmıştır. Cinsel sağlık okuryazarlığı, kadınların cinsel sağlık bilgilerini anlama ve bu bilgileri uygulama yeteneğini ifade eder. Bu alandaki bilgi tutum ve davranışlar ile hayatında sağlık kararları almasına yardımcı olmaktadır. Araştırmalar, cinsiyet, yaş, eğitim düzeyi, yaşanılan yer, cinsel deneyim, cinsel eğitim, doğum yeri, dini bağlılık, kültürel faktörler, medya, çalışma durumu, doğum sayısı, aile tutumu, öz bakım düzeyi, kontraseptif yöntem kullanımı gibi faktölerin cinsel sağlık okuryazarlığına önemli ölçüde etkilediğini göstermektedir. Kadının eğitim düzeyi, eşinin eğitim düzeyi, aile desteği, doğum kontrolü kullanımı, çalışan kadınların varlığı ve gebelik sayısının az olması, yüksek cinsel sağlık okuryazarlığıyla ilişkilidir. Öte yandan, kırsal yerleşim, kültürel engeller ve düşük sosyoekonomik durum ise düşük cinsel sağlık okuryazarlığı ile ilişkilidir. Cinsel sağlık okuryazarlığının yükseltilmesi ve iyileştirilmesi amacıyla cinsel eğitim oldukça önemlidir. Bu nokta hemşireler danışmanlık ve eğitici rollerinin kullanımıyla birlikte etkili bir cinsel sağlık eğitimi sunabilmekte ve kadınların riskli davranışlardan korunması konusunda rol oynamaktadırlar. Hemşireler cinsel eğitim için bakım verirken cinselliğin hassas ve mahremiyet gerektiren bir konu olduğunu unutmamalı ve kişilerin farklılıkları göz önünde bulundurarak bir yaklaşım sergilenmelidir. Verilen bakımın kalitesinin

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arttırılması adına Jean Watson'ın İnsan Bakım Modelini oluşturan iyileştirici faktörler ve iyileştirme süreçlerinin kullanımı önerilmelidir.

Anahtar Kelimeler: Cinsel sağlık okuryazarlığı, kadın sağlığı, cinsel eğitim, cinsel sağlık

Abstract:

This review aimed to identify the factors affecting the level of sexual health literacy in women. In this study, a literature review was conducted from CINAHL, EMBASE, PsycINFO, PubMed and Web of Science databases with the keywords "sexual health literacy", "women's health", "sexual education", "sexual health" between 2018 and 2024. Sexual health literacy refers to women's ability to understand and apply sexual health information. It helps them make health decisions in their lives with their knowledge, attitudes and behaviors in this field. Studies show that factors such as gender, age, education level, place of residence, sexual experience, sexual education, place of birth, religious affiliation, cultural factors, media, employment status, number of births, family attitude, self-care level, contraceptive use significantly affect sexual health literacy. Women's educational level, husbands' educational level, family support, contraceptive use, presence of working women and low number of pregnancies are associated with high sexual health literacy. On the other hand, rural residence, cultural barriers and low socioeconomic status are associated with low sexual health literacy. Sexual education is very important to increase and improve sexual health literacy. At this point, nurses can provide effective sexual health education and play a role in protecting women from risky behaviors by using their roles as counselors and educators. While providing care for sexual education, nurses should not forget that sexuality is a sensitive and private subject and should take into account the differences of individuals. In order to improve the quality of care provided, it should be recommended to use the healing factors and improvement processes that make up Jean Watson's Human Care Model.

Keywords: Sexual health literacy, women's health, sexual education, sexual health

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AWARENESS OF GYNECOLOGIC CANCERS IN WOMEN: A STUDY ON ENDOMETRIAL CANCER

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ABSTRACT

Gynecological cancers are malignant tumors that develop in the female reproductive organs and cause high morbidity and mortality worldwide. Endometrial cancer, with 420,368 cases in women (%4.3), ranks second, while in Turkey, 7,847 women (%7.3) have been diagnosed, making it the most common gynecological cancer type.

As awareness increases, women are more likely to seek medical attention at earlier stages, leading to more successful treatment outcomes. However, there is currently no screening test for endometrial cancer, and early diagnosis is only possible through awareness. Studies show that women lack sufficient knowledge about the risks of endometrial cancer, making early detection more difficult. Symptoms such as postmenopausal bleeding are often considered normal or avoided due to shame, preventing women from seeking healthcare services. Women may miss early diagnosis opportunities due to a lack of information, economic difficulties, challenges in accessing healthcare, and low awareness.

The role of nurses is to ensure that women recognize symptoms early and provide information on healthy lifestyles. It is also important to refer high-risk individuals for early diagnosis, taking into account genetic and environmental factors. In this way, cancer can be diagnosed at an early stage and treatment processes can be made more effective.

In conclusion, increasing awareness of endometrial cancer will have positive effects on women’s health and strengthen early diagnosis and treatment processes.

Keywords: Endometrial cancer, women's health, awareness, nursing.

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İNMELİ EVDE BAKIM HASTALARININ BAKIM VERİCİLERİNİN BİLGİ GEREKSİNİMLERİ

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ÖZET

Dünya çapında önde gelen ölüm nedeni ve edinilmiş fiziksel sakatlığın ana nedeni olan inme sonrası hastaların üçte biri günlük işlerinde başkalarına muhtaç olarak yaşamlarını sürdürebilmektedir. İnme geçiren çoğu hastada görme problemleri, duyu-motor bozukluklar, bilişsel bozukluklar, tonüs bozuklukları, konuşma güçlüğü, koordinasyon bozukluğu ve yutma güçlüğü gibi fiziksel düzeyde yetersizlikler yaşandığı ve bu duruma bağlı olarak günlük aktivitelerin olumsuz etkilendiği bilinmektedir. Hastayla birlikte bakım vericilerin de yaşayabilecekleri sorunların belirlenmesi, bilgi eksikliğinin giderilmesi ve baş etme stratejilerinin geliştirilmesi önemlidir. Bireyin hastane ve ev ortamında bakımının sürdürülmesinde tüm sağlık ekip üyeleri, özellikle hemşireler anahtar rol oynamaktadır. Bireylerin öz bakım güçlerinin arttırılarak günlük yaşam aktivitelerinde yüksek düzeyde bağımsızlıklarının sağlanmasında hemşirelerin eğiticilik rolü büyük önem taşımaktadır. Hemşireler tarafından verilen sağlık eğitimi ve bakımdaki süreklilik, inmeli bireylerin hastalığın getirdiği sorunlar ve yetersizliklerle baş etmesini kolaylaştırır.Bakım verenin sorunlarını belirlemek için veri toplamak, bakım planlarında, bakım veren ve diğer aile üyelerini birlikte ele almak ve bu doğrultuda eğitim planlamak hemşirenin profesyonel sorumluluklarındandır ve bu süreçte hemşirelerin eğitim, bakım, danışmanlık, çalışmaları organize etme, yol gösterme gibi rollerini gerçekleştirmesi gerekmektedir. Bakım verenin hasta ile iletişimini, hastalık ve bakım verme ile ilgili bilgi, tutum ve davranışlarını gözlemeli, bakım verenlerin yeteneklerine odaklanarak bakım verenin olumlu tutum geliştirmelerine yardım etmelidir. Bakım veren bireylere bakım için gerekli el becerileri, hastanın günlük yaşam aktivitelerini yerine getirirken kolaylaştırıcı yöntemleri ve bakım uygulamaları hakkında verilen eğitimlerin bakım verenlerin yaşadığı bakım yükünü azaltabileceği ve hem hastanın hem de bakım verenin yaşam kalitesini artırabileceği düşünülmektedir.

Anahtar kelimeler: İnme, Bakım verici, Hemşirelik

ABSTRACT

Stroke remains one of the leading causes of death and the primary cause of acquired physical disability worldwide. Approximately one-third of stroke survivors continue their lives dependent on others for daily activities. It is well established that most stroke patients

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experience a range of physical impairments, including visual disturbances, sensorimotor dysfunction, cognitive deficits, tone abnormalities, speech difficulties, coordination problems, and dysphagia, all of which significantly impact their ability to perform daily activities.Identifying the potential challenges faced not only by patients but also by their caregivers, addressing knowledge gaps, and developing effective coping strategies are critical components of post-stroke care. All members of the healthcare team—particularly nurses—play a central role in ensuring the continuity of care in both hospital and home settings. The educational role of nurses is particularly important in enhancing patients' self-care capacity and promoting independence in activities of daily living. Health education provided by nurses, along with continuity of care, facilitates patients' adaptation to the challenges and functional limitations resulting from stroke. It is among the professional responsibilities of nurses to collect data on caregivers' needs, include caregivers and family members in care planning, and design targeted educational interventions. In this process, nurses must fulfill roles such as educator, caregiver, consultant, coordinator, and guide. Nurses should observe the caregiver's communication with the patient and assess their knowledge, attitudes, and behaviors regarding the illness and caregiving process. Supporting caregivers in developing positive attitudes by focusing on their strengths and abilities is essential. Discharge education should include training on practical caregiving skills, facilitative techniques for daily care tasks, and basic nursing practices. Such training has the potential to reduce caregiver burden and improve the quality of life for both patients and caregivers.

Keywords: Stroke, Caregiver, Nursing

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YOĞUN BAKIM ÜNİTELERİNDE HEMŞİRELİK BAKIM-UYGULAMA PROTOKOLLERİ

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ÖZET

Yoğun bakım üniteleri (YBÜ), kritik hastaların tedavi edildiği ve sürekli izlem gerektiren özel alanlardır. Bu ünitelerde sunulan hemşirelik bakımı, hastaların yaşamlarını sürdürebilmeleri için hayati öneme sahiptir. Hemşirelerin, YBÜ'deki hasta bakım süreçlerinde hem teorik bilgiye hem de uygulama yeteneğine sahip olmaları gerekmektedir. Yoğun bakım ünitelerinde hemşirelik bakım ve uygulama protokollerinin önemi, temel ilkeleri ve uygulanması gereken kritik yaklaşımları incelemektedir. Hemşirelik bakım protokolleri, hastaların tedavi süreçlerinin düzenli, etkili ve güvenli bir şekilde yürütülmesini sağlamaya yönelik olarak hazırlanmış rehberlerdir. Yoğun bakım ünitelerinde hemşirelik bakım protokollerinin uygulanması hem hasta güvenliğini hem de bakım kalitesini artıran önemli bir faktördür. Bu protokoller, vücut bakım, aspirasyon, invaziv uygulamalar, yara bakımı ve pozisyon konularını kapsamaktadır. Protokollerin doğru uygulanması, hasta güvenliğini artırırken, komplikasyonların önlenmesine ve tedavi sürecinin hızlanmasına katkı sağlar. Ayrıca, hemşirelerin YBÜ'de karşılaştıkları zorlukları, protokollerin geliştirilmesindeki rollerini ve sürekli eğitim ile güncel bilgiye erişimlerinin önemini vurgulamaktadır. Yoğun bakım ünitelerinde sunulan hemşirelik bakımının standardizasyonu ve kanıta dayalı hemşirelik bakımının sunumu için bakım uygulama protokollerinin geliştirilmesi ve uygulanması son derece önemlidir.

Anahtar kelimeler: Yoğun Bakım, Bakım-Uygulama Protokolleri, Hemşirelik

ABSTRACT

Intensive Care Units (ICU) are specialized clinical settings where critically ill patients receive treatment and require continuous monitoring. The nursing care provided in these units is of vital importance for the maintenance of patients' lives. Nurses working in ICU must be equipped with both comprehensive theoretical knowledge and advanced clinical skills to effectively manage patient care processes. This paper explores the significance of nursing care and clinical practice protocols in ICU, emphasizing their core principles and critical approaches required for effective implementation. Nursing care protocols are systematically developed guidelines intended to ensure that patient care is delivered in a structured, efficient, and safe manner. The application of these protocols in intensive care settings constitutes a key factor in enhancing patient safety and improving the overall quality of care. These protocols encompass a wide

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range of nursing interventions, including body hygiene, airway suctioning, invasive procedures, wound care, and patient positioning. Accurate and consistent implementation of these protocols contributes to minimizing the risk of complications and facilitates a more efficient treatment process. Moreover, the discussion highlights the challenges nurses encounter in ICU, their roles in the development and refinement of care protocols, and the critical importance of ongoing education and access to current, evidence-based information. The standardization of nursing care practices and the integration of evidence-based approaches in ICU necessitate the development and implementation of well-defined clinical practice protocols.

Keywords: Intensive Care, Care-Practice Protocols, Nursing

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NANOTOXICITY OF LIPID NANOPARTICLES IN DRUG DELIVERY

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ABSTRACT

Lipid nanoparticles (LNPs) have become a cornerstone in modern drug delivery, particularly for mRNA-based vaccines and therapies. While LNPs have demonstrated significant therapeutic potential, concerns regarding their long-term toxicological effects remain underexplored. While they have shown significant promise, there are growing concerns about their long-term toxicological effects that have yet to be fully addressed.

The current study investigates the nanotoxicity of LNPs, with a focus on their biodistribution, immune activation, and potential for organ accumulation.

The previous studies which examined the pharmacokinetics and toxicity profiles of LNP formulations highlighted that, while LNPs are efficient in facilitating targeted drug delivery, prolonged circulation can result in hepatic accumulation, potentially leading to mild inflammatory responses. Moreover, new research indicates that LNPs may induce temporary immune activation, posing additional risks for patients with underlying inflammatory conditions.

Formulations with certain lipids used in LNPs particularly ionizable lipids which are commonly used to stabilize mRNA, have been linked with mitochondrial dysfunction, oxidative stress, and potential cytotoxicity. These observations raise concerns about the long-term safety of LNPs, especially given their expanding use in gene therapy and vaccination.

As LNP-based drug delivery systems continue to play a bigger role, it is crucial to develop robust regulatory frameworks that address their safety profile. Future research should focus on optimizing LNP compositions to minimize adverse effects while maintaining their therapeutic efficacy, ensuring a safer future for nanomedicine that will protect patients.

Keywords: nanotoxicity, lipid nanoparticles, toxicological safety, drug delivery

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ENVIRONMENTAL PHARMACEUTICALS: A NEW TOXICOLOGICAL EMERGENCY

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ABSTRACT

Pharmaceuticals have transformed modern medicine however, the increasing presence of these contaminants in the environment has raised concerns for human health. Active pharmaceutical ingredients enter the environment through industrial waste, improper disposal, and patient excretion. This study explores the toxicological risks these pharmaceutical pollutants pose, particularly, focusing on endocrine disruption, antibiotic resistance, and bioaccumulation.

Previous studies identified residues of antibiotics, antidepressants, and hormonal drugs in wastewater and natural water bodies through techniques like chromatography. Even in low concentrations, these substances can disrupt aquatic life, damage microbial ecosystems, and interfere with the reproductive systems of fish and other organisms. Long-term exposure to these pollutants has also been connected to possible health implications for humans as well as endocrine disruption in wildlife.

Particularly concerning is the emergence of antibiotic resistance brought on by exposure to subtherapeutic antibiotic concentrations in the environment. Research shows that the selection pressure causing antimicrobial resistance, which is a serious threat to world health, is influenced by pharmaceutical contaminants.

To confront this crisis, there is a need for strict regulations for pharmaceutical disposal, investment in advanced water treatment technologies, and the development of greener, biodegradable drug formulations. A multidisciplinary approach is essential to mitigate the toxicological impact of pharmaceuticals on the environment. By acknowledging the unintended consequences of pharmaceutical use, we can develop sustainable solutions that can protect the environment and human health.

Keywords: environmental toxicology, pharmaceutical pollution, antimicrobial resistance

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ELEKTRİKLİ ARAÇLARDA YAKIT TÜKETİMİ VE ŞARJ VERİMLİLİĞİNİN ANALİZİ

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Özet

Bu çalışma, elektrikli araçların yakıt tüketimi verilerinin kapsamlı analizini gerçekleştirerek, farklı parametrelerin performans üzerindeki etkilerini ortaya koymayı amaçlamaktadır. Çalışmada, şarj işlemleri, araç menzili ve entegre yakıt tüketimi gibi temel parametreler, çeşitli kullanım senaryoları ve araç segmentleri bazında detaylı olarak incelenmiştir. Verilerin analizinde, şarj süreleri, dolum oranları, batarya kapasitesi, sürüş koşulları ve çevresel etkenler gibi çok sayıda değişken dikkate alınmış ve bu parametreler arasındaki ilişkiler niceliksel olarak ortaya konulmuştur. Elde edilen bulgular, özellikle şarj verimliliği ile araç menzili arasındaki anlamlı korelasyonları gözler önüne sermiş; aynı zamanda entegre yakıt tüketimi üzerinde etkili olan faktörlerin belirlenmesine olanak tanımıştır. Bu kapsamlı analiz, farklı kullanım senaryoları arasında gözlemlenen varyasyonların, enerji tüketimi ve performans parametreleri üzerindeki etkilerini detaylandırarak, segment bazında özelleştirilmiş enerji yönetim stratejilerinin geliştirilmesi için önemli bir temel oluşturmuştur. Sonuç olarak, çalışma, EMS uygulamalarının optimize edilmesi, enerji verimliliğinin artırılması ve sürdürülebilir ulaşım politikalarının geliştirilmesi açısından kritik veriler sunmakta, elde edilen bulgular hem teorik modellemeler hem de pratik uygulamalar için yol gösterici nitelikte değerlendirilmektedir.

Anahtar kelimeler: Elektrikli araçlar, yakıt tüketimi, şarj verimliliği, sürdürülebilir ulaşım.

Analysis of Fuel Consumption and Charging Efficiency in Electric Vehicles

Abstract

This study aims to comprehensively analyze the fuel consumption data of electric vehicles, elucidating the effects of various parameters on performance. Key parameters such as charging processes, vehicle range, and integrated fuel consumption have been thoroughly examined across different usage scenarios and vehicle segments. The analysis incorporates numerous variables, including charging times, fill rates, battery capacity, driving conditions, and environmental factors, with the relationships between these parameters quantitatively assessed. The findings highlight significant correlations, particularly between charging efficiency and vehicle range, while also identifying factors influencing integrated fuel consumption. This detailed analysis elucidates the variations observed across different usage scenarios and their impacts on energy consumption and performance parameters, laying a critical foundation for the development of segment-specific energy management strategies. Ultimately, the study provides essential data for optimizing Energy Management System (EMS) applications, enhancing energy efficiency, and advancing sustainable transportation policies. The results are deemed valuable for both theoretical modeling and practical applications.

Keywords: Electric vehicles, fuel consumption, charging efficiency, sustainable transportation

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ELEKTRİKLİ ARAÇLARDA YAKIT TÜKETİMİ ANALİZİ: SEGMENTLER, KULLANIM SENARYOLARI VE ENERJİ VERİMLİLİĞİ ÜZERİNE BİR İNCELEME

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Özet

Bu çalışma, elektrikli araçların yakıt tüketimi verilerinin kapsamlı analizini gerçekleştirmiştir. Analiz kapsamında, farklı kullanım senaryoları, araç segmentlerine göre değişen tüketim değerleri, zaman içinde gözlemlenen trendler ve kullanılan ölçüm metodolojilerinin etkileri detaylı olarak incelenmiştir. Çalışmada, çeşitli istatistiki yöntemler ve zaman serisi analiz teknikleri kullanılarak, farklı araç tipleri ve işletim koşulları altında kaydedilen veriler sistematik bir şekilde değerlendirilmiştir. Elde edilen bulgular, elektrikli araçların yakıt tüketiminde belirgin varyasyonlar olduğunu ve bu varyasyonların araç segmentleri ile kullanım senaryolarına göre farklılık gösterdiğini ortaya koymaktadır. Ayrıca, ölçüm metodolojilerindeki farklılıkların sonuçlar üzerindeki etkisi de analiz edilerek, enerji yönetim stratejilerinin optimize edilmesi için değerli veriler sunulmuştur. Bu çalışma, enerji verimliliğinin artırılması, batarya ömrünün uzatılması ve sürdürülebilir ulaşım hedeflerine ulaşılması adına önemli stratejik çıkarımlar sağlamaktadır. Elde edilen sonuçlar, mevcut EMS uygulamalarının geliştirilmesi ve gelecekteki enerji verimliliği odaklı politikaların oluşturulması için temel referans noktaları sunmaktadır.

Anahtar kelimeler: Batarya, Elektrikli Araç, Tüketim, Analiz.

Analysis of Fuel Consumption in Electric Vehicles: A Study on Segments, Usage Scenarios, and Energy Efficiency

Abstract

This study provides a comprehensive analysis of fuel consumption data for electric vehicles. The analysis encompasses various usage scenarios, consumption values varying by vehicle segments, trends observed over time, and the impacts of applied measurement methodologies, all of which have been examined in detail. Employing a range of statistical methods and time series analysis techniques, the study systematically evaluates data recorded under different vehicle types and operating conditions. The findings reveal significant variations in the fuel consumption of electric vehicles, with these variations differing across vehicle segments and usage scenarios. Furthermore, the influence of differences in measurement methodologies on the results has been analyzed, providing valuable insights for optimizing energy management strategies. This study offers critical strategic implications for enhancing energy efficiency, extending battery life, and achieving sustainable transportation goals. The results serve as foundational reference points for improving existing Energy Management System (EMS) applications and shaping future energy-efficiency-focused policies.

Keywords

Battery, Electric Vehicle, Consumption, Analysis

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ELEKTRİKLİ ARAÇLARDA YANGIN RİSKLERİ VE TÜRKİYE DEĞERLENDİRMESİ

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ÖZET

Günümüzde küresel ısınmanın hızlanması ve fosil yakıtların kullanımının artmasıyla petrol rezervlerinin azalması gelişmiş ülkeleri, elektrikli araç kullanımına yöneltmektedir. İçten yanmalı araçlara göre elektrikli araç yangınları daha az görülmekle beraber daha fazla risk barındırmaktadır. Elektrikli araçlarda yaygın olarak Lityum iyon bataryalar kullanılmaktadır. Bu bataryalar yüksek çevrim oranları yanında yüksek enerji yoğunluğu sunmakta ve düşük şarj süresi gibi çeşitli özellikleri sayesinde elektrikli araçlarda tercih edilmektedirler. Ancak, bu teknolojinin yaygınlaşmasıyla birlikte güvenlik sorunlarında da artış gözlenmektedir. Elektrikli araç yangınları uygun şekilde müdahale edilmediği ve güvenlik önlemlerinin alınmadığı durumlarda can ve mal güvenliği açısından oldukça tehlikeli hale gelebilme olasılığına sahiptir. Bu çalışmada, elektrikli araç yangınları kapsamlı olarak incelenmekte, yangın sebepleri, yangın süreci, riskler ve yangın güvenliği konularına değinilmektedir. Elektrikli araçların sürdürülebilir ve güvenli bir kullanımı için değerlendirmeler yapılmıştır.

Anahtar Kelimeler: Elektrikli araçlar; Lityum iyon batarya; Yangın; Risk

FIRE RISKS IN ELECTRIC VEHICLES AND TÜRKİYE EVALUATION

ABSTRACT

Today, the acceleration of global warming and the increasing use of fossil fuels, coupled with the depletion of oil reserves, are leading developed countries to use electric vehicles. Electric vehicle fires are less common than internal combustion vehicles, but they carry more risks. Lithium-ion batteries are widely used in electric vehicles. These batteries offer high energy density as well as high cycle rates, and are preferred in electric vehicles due to various features such as low charging time. However, with the spread of this technology, there is an increase in security problems. Electric vehicle fires can become quite dangerous in terms of life and

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property safety if they are not properly intervened and safety measures are not taken. In this study, electric vehicle fires are examined comprehensively, and fire causes, fire process, risks and fire safety issues are addressed. Assessments have been made for the sustainable and safe use of electric vehicles.

Key words: Electrical vehicles; Lithium-Ion battery; Fire; Risk

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YÜKSEK BASINÇLI DÖKÜM MAKİNELERİNDE MODÜLER PİSTON KULLANILMASI İLE ÜRETİM VERİMLİLİĞİN ARTTIRILMASI

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ÖZET

Alüminyum yüksek basınç-alüminyum enjeksiyon döküm yöntemi, ergimiş alüminyum hammaddenin çok yüksek basınç altında metalden yapılmış bir kalıba doldurulması esasına dayanmaktadır. Uygulanan yüksek basınç sayesinde fazla miktarda alüminyumun kalıba çok hızlı bir şekilde doldurulması sağlanmaktadır. Katılaşma tamamlanıncaya kadar yüksek basınç uygulanmaya devam edilmekte ve ardından kalıp açılarak itici çubuklar yardımıyla parça kalıptan çıkarılarak işlem tamamlanmaktadır. Alüminyum yüksek basınç döküm- alüminyum enjeksiyon döküm yöntemi sayesinde çok karışık şekilli parçaların dökümü mümkün olmaktadır.

Yüksek basınçlı döküm makinelerinde kovanda biriken madenin kalıba aktarılmasını sağlayan pistonlar için sistem geliştirme ihtiyacı doğmuştur. Var olan çelik ve bakır pistonlarının yüzey kısımlarında madenin kalıba aktarılması sırasında aşınmalar olmaktadır. Piston içerisindeki soğutma kanalları işleme takımlarının ulaşabileceği optimum yerlere kadar açılmaktadır, fakat yeteri kadar yüzeye yakın olmadığı, soğutma kanalları ve yüze arasında kalınlık olduğu için yüzey verimli soğutamamaktadır. Bu durumda pistonun baskı adedini düşürmekte, piston değişim sıklığını arttırmakta ve ekstra maliyeti beraberinde getirmektedir.

Yapılan çalışma ile piston tek parçadan birden fazla parçayla birlikte modüler olması sağlanmıştır. Soğutma kanalları madeni iten yüzeye yakın olarak tasarlanmıştır. İlk aşamada piston maliyeti bir kere gerçekleştirilmiştir. Ardından sadece temas eden yüzey değiştirilerek maliyetten ve kapasiteden kazanç sağlanmıştır.

Yüksek basınçlı döküm makinelerinde kullanılan madeni kalıp içerisine aktaran piston için üretim verimliliğini ve kapasitesini arttıran üretim maliyetlerini düşüren modüler pistonun tasarımının gerçekleştirilmesi ve üretiminin sağlanıp tesisteki makinelere kazandırılması sağlanacaktır. Yapılan çalışma ile piston değişim maliyetlerin önüne geçilerek maddi anlamda

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kazançlar sağlanmıştır. Bununla birlik piston kapasitesi arttırılarak piston değişiminden kaynaklanan makine duruşların önüne geçilmiştir.

Çalışma kapsamında yapılan modüler piston birden fazla parçadan oluşan ve değiştirilebilir bileşenlere sahip özel pistonlardır. Standart tek parça pistonlara göre daha uzun ömürlü, bakım dostu ve maliyet açısından avantajlı bir çözüm sunmaktadır. Modüler pistonlar, geleneksel tek parça pistonların aksine birbirinden bağımsız bileşenlerden oluşmaktadır. Ana gövde, piston başı(bakır-çelik), bileziği (bakır-çelik), soğutma kanalları, sızdırmazlık elemanları gibi bileşenleri kapsamaktadır. Yapılan çalışma ile birlikte üretimde bakır tek parça pistonlar yerine modüler pistonlar kullanarak birçok avantaj sağlanması hedeflenmiştir. Genel olarak çalışma kapsamında piston tarafında yaşanan piston aşınma, zorlanma, sıkışma ve piston değişim olarak devam eden bu süreçte yaşanan makine duruşlarının önüne geçilmiş, ayrıca değişimden kaynaklı birim maliyet kaybı da minimum seviyelere indirilmiştir.

Anahtar Kelimeler: Üretimde Verimlilik, Makine Duruşlarının Azaltılması, Makineye Müdahalenin Hızlanması, Birim Maliyet Azaltma

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KOMPAKT VE GÜVENLİ PNÖMATİK KESME MAKİNESİ

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ÖZET

Metal şekillendirme süreçlerinde hassasiyet, hız ve güvenlik, her zaman öncelikli parametreler arasında yer almıştır. Özellikle ince metal levhaların işlenmesi, bu parametrelerin birbirine üstünlük sağlamadan dengelenmesini gerektirir. Bakır gibi iletkenliği yüksek ve oldukça sünek bir malzemenin kesilmesi, her ne kadar basit bir işlem gibi görünse de, standart kesim yöntemleriyle uygulandığında sıklıkla deformasyon, çapaklanma ve malzeme israfı gibi sorunlarla karşılaşılmaktadır. Bu durum yalnızca ürün kalitesini düşürmekle kalmaz; aynı zamanda verimlilik ve iş güvenliği açısından da olumsuz sonuçlar doğurur.

Son yıllarda pnömatik sistemlerin, düşük enerji maliyetleri ve hızlı tepki süreleri sayesinde imalat süreçlerinde önemli bir alternatif sunduğu görülmektedir. Pratihar ve arkadaşlarının (2020) geliştirdiği pnömatik kesme ve delme makinesi, ince metal levhaların hızlı kesimi için temel işlevselliği sağlarken, sistemin taşınabilirliği ve kullanıcı güvenliği gibi yönlerinin sınırlı kaldığı görülmektedir. Benzer biçimde, Prasaad ve ekibi (2022), küçük ölçekli işletmelere yönelik bir pnömatik kesme çözümü sunmuş, ancak bu sistemlerin hassasiyet gerektiren ince bakır levhalar üzerindeki etkinliği detaylı biçimde ele alınmamıştır.

Bu proje, söz konusu teknik ve pratik sınırlamalardan yola çıkarak geliştirilmiş; özellikle küçük atölyelerde çalışan bireysel üreticilerin ihtiyaçlarına doğrudan yanıt vermeyi amaçlamıştır. Kompakt yapısı, taşınabilirliği ve güvenlik donanımları ile desteklenen sistem; ince levhalarda deformasyonsuz, keskin ve güvenli kesim sağlayacak şekilde tasarlanmıştır. Bu yönüyle, mevcut literatürde sıklıkla ihmal edilen, hassas ve kontrollü kesim ihtiyacına yönelik somut ve uygulanabilir bir çözüm sunarak önemli bir boşluğu doldurmaktadır

Anahtar Kelimeler: Pnömatik kesme makinesi, ince levha kesimi, taşınabilir tasarım.

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ARDUİNO KONTROLLÜ PNÖMATİK AYIRMA MEKANİZMASINA SAHİP KONVEYÖR BANT TASARIMI

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ÖZET

Projemiz, Arduino mikrodenetleyici kontrollü ve pnömatik ayrışma mekanizmasına sahip bir konveyör bant sistemi tasarlamayı amaçlamaktadır. Sistem, bant üzerindeki cisimleri boyutlarına (yüksekliklerine) göre sınıflandırarak büyük boyutlu cisimleri pnömatik bir itici ile yan tarafa ayırmayı hedeflemektedir. Sistem, DC motor ile çalışan bir konveyör bandı üzerine kurulmuş ve malzemelerin uygun bölmelere ayrılması sağlanmıştır. Literatürdeki benzer çalışmalar incelenerek geliştirilen bu sistem, özellikle eğitim ortamlarında temel otomasyon prensiplerinin uygulanmasını teşvik eden bir model olarak değerlendirilmiştir. Benzer projelerde yaygın olarak tercih edilen Arduino platformu, bu çalışmada da düşük maliyet ve programlama esnekliği nedeniyle tercih edilmiştir. Bu sayede küçük ölçekli endüstriyel uygulamalar ve eğitim amaçlı projeler için uygun bir çözüm sunduğu görülmüştür. Ayrıca, PLC tabanlı sistemlerle teorik olarak karşılaştırmalı bir analiz yapılarak Arduino tabanlı otomasyonun avantajları değerlendirilmiştir. İlk tasarım aşamasında kızılötesi (IR) sensör düşünülmüş olsa da, algılama doğruluğunu artırmak ve ortam koşullarından daha az etkilenmek için HC-SR04 ultrasonik mesafe sensörü tercih edilmiştir. Mevcut durumda sistem montaj ve test aşamasındadır; dolayısıyla performans ve doğruluk değerleri fiili deneylerle değil, bileşenlerin katalog verilerine ve teorik hesaplamalara dayalı beklentiler olarak sunulmaktadır. Yapılan hesaplamalar ve simülasyon sonuçlarına göre sistemin belirlenen tasarım kriterlerini karşılaması beklenmektedir. Sonuçlar bölümünde sistemin teorik olarak öngörülen performansı tartışılmış, gelecekteki çalışmalar kapsamında gerçek zamanlı testler ve geliştirmeler ele alınmıştır.

Anahtar Kelimeler: Arduino, Konveyör Bant, Pnömatik Sistem, Endüstriyel Otomasyon, HC-SR04 Sensörü

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OPTIMAL TASK ALLOCATION ALGORITHM AND AGENT COMMUNICATION LANGUAGE DEVELOPMENT FOR UNMANNED AERIAL VEHICLE SWARMS

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ABSTRACT

This study presents a MATLAB-based autonomous simulation environment and a basic communication model developed to analyze task allocation, coordinated motion, and environmental awareness mechanisms in multi-Unmanned Aerial Vehicle (UAV) systems. For UAV swarms to operate efficiently in dynamic mission environments, both distributed task allocation algorithms and inter-agent communication protocols are essential. In the first stage of the study, advanced techniques such as Artificial Neural Networks (ANNs), Particle Swarm Optimization (PSO), and Genetic Algorithms (GA) were utilized to form the algorithmic backbone of the system.

The proposed infrastructure was tested in the second stage through a simulation involving a swarm of three UAVs within the MATLAB environment. The UAVs initiate the flight with a vertical takeoff, proceed along a straight trajectory, and autonomously avoid two rectangular prism-shaped obstacles placed along their path. Upon detecting the first obstacle, the swarm performs an elevation maneuver to avoid collision and resumes level flight. A similar group behavior is observed when encountering the second obstacle, followed by a safe descent to reach the target location.

A key contribution of this study is the emergence of synchronized swarm behavior, whereby the entire swarm reacts to an obstacle detected by only one UAV. This method indicates the presence of a basic inter-agent communication language that facilitates shared decision-making. MATLAB's built-in shortest path algorithms were integrated into alternative scenarios to enable route planning around the obstacles. Additionally, when the UAVs' lateral positions were shifted left or right, the swarm maintained coordinated obstacle avoidance regardless of which UAV first encountered the threat.

Keywords: UAV Simulation, Obstacle Avoidance, MATLAB, Swarm Coordination, Autonomous Flight

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GAME THEORY-BASED DECISION-MAKING ALGORITHM AND REWARD DESIGN FOR PREVENTING AUTOMATIC GROUND COLLISIONS

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ABSTRACT

This study comprehensively examines the innovative technology known as the Autonomous Ground Collision Avoidance System (Auto GCAS), aimed at enhancing aviation safety. The system primarily targets minimizing risks such as pilot errors, loss of consciousness, and sudden emergency situations that may arise during low-altitude flights. It autonomously takes control of the aircraft when necessary. The fundamental operating principle of Auto GCAS relies on continuous environmental data monitoring through sensors. By analyzing parameters such as aircraft speed, altitude, and approach angle, the system detects collision risks and activates autonomous avoidance maneuvers to prevent potential accidents. In this study, the modular software architecture for reliably and scalably collecting sensor data, modeling the decision-making process based on game theory, and integrating real-time maneuver execution are discussed step by step. Simulations conducted on a three-dimensional terrain map with randomly placed obstacles show that the system is capable of preventing the majority of potential collisions.

Additionally, based on existing literature from platforms ranging from the F-16 to the F-22 and F-35, a flexible and reconfigurable simulation framework suitable for integrating different platforms has been designed and proposed. The game theory-based algorithms used in Auto GCAS evaluate the real-time interactions between the pilot and the aircraft to ensure the most optimal decisions are made. This method allows the system to generate rapid and effective responses in critical moments. In all these aspects, Auto GCAS is a robust and practical solution that reduces risks associated with human error in low-altitude flights, prioritizing safety.

Keywords: Flight Control System; Aviation Safety; Game Theory; Auto GCAS

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DEVELOPMENT OF Q-LEARNING BASED DECISION MAKING ALGORITHM FOR UAVS

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ABSTRACT

This study focuses on developing a Q-learning-based decision-making algorithm to enhance the autonomy and performance of unmanned aerial vehicles (UAVs) in complex and dynamic environments. The algorithm enables UAVs to adaptively learn optimal flight strategies through trial-and-error interactions with their surroundings by employing reinforcement learning techniques. A comprehensive simulation framework has been developed, incorporating a detailed 3D model of the UAV to simulate realistic flight dynamics and environmental conditions. The algorithm has been tested in scenarios involving obstacle avoidance, target tracking, and energy-efficient path planning, demonstrating its ability to improve flight stability, trajectory optimization, and real-time decision-making. The MATLAB UAV Toolbox was utilized to model the UAV's kinematics and validate the algorithm's efficiency under varying operational constraints. Results indicate significant enhancements in autonomous navigation, especially in complex environments requiring high adaptability and precision. Additionally, this project introduces an adaptable framework for 3D path planning that aligns with international safety and energy efficiency standards, contributing to the broader field of autonomous navigation. Future work will integrate advanced reinforcement learning methods to improve scalability and applicability in real-world UAV operations. This research underscores the potential of reinforcement learning (RL) in advancing UAV technology, offering a robust approach for improving autonomous flight systems in applications such as surveillance, delivery, and search-and-rescue missions.

Keywords: Autonomous Navigation, Q-Learning, MATLAB UAV Toolbox, Real-Time Decision-Making.

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ARTIFICIAL INTELLIGENCE-BASED THREAT DETECTION AND AVOIDANCE SYSTEMS IN AUTONOMOUS UNMANNED AERIAL VEHİCLES (UAVS)

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ABSTRACT

This study aims to develop an artificial intelligence-based system that enables autonomous unmanned aerial vehicles (UAVs) to detect environmental threats during missions and execute collision avoidance maneuvers effectively. The proposed system was implemented using the PX4 flight control software integrated with the Robot Operating System (ROS) and simulated within the Gazebo environment. Various static and dynamic threats were modeled in the simulation, and the UAV was trained to avoid them.

The project employed the reinforcement learning algorithm Proximal Policy Optimization (PPO). PPO enables the UAV to quickly adapt to environmental changes, detect threats, and make appropriate real-time avoidance decisions. The UAV processes sensor data from LiDAR, IMU, and cameras via ROS to construct a situational map and selects the safest trajectory accordingly. The agent continuously improved its performance throughout the training phase by learning optimal avoidance behaviors through environmental feedback.

As a result, the developed system demonstrated high accuracy and reliability in threat detection and real-time avoidance. This AI-supported autonomous control structure shows significant potential for application in critical operations such as defense, reconnaissance, search and rescue, and border security.

Anahtar Kelimeler: Unmanned Aerial Vehicle, Autonomous Systems, Threat Detection, PPO, Reinforcement Learning, PX4, Gazebo, ROS.

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DESIGN AND CONTROL OF AN AUTONOMOUS DRONE FOR PACKAGE DELIVERY USING Q-LEARNING

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ABSTRACT

Rapid advances in unmanned-aerial-vehicle (UAV) technology have created new opportunities for sustainable, time-critical logistics. This study uses a tabular Q-learning algorithm to present the design and control of an autonomous multi-rotor drone that performs reliable last-mile package delivery in cluttered three-dimensional (3-D) environments. A 3-D grid world, augmented with randomly distributed static obstacles and multiple delivery points, was modeled to reflect urban operating conditions. The state space consists of the drone's discrete Cartesian position and a delivery-progress index, while the action set comprises six translational moves (±x, ±y, ±z). Reward shaping enforces energy efficiency and safety: positive rewards are granted for reducing the Euclidean distance to the current target and for successful drop-offs, whereas penalties discourage collisions, out-of-bounds motion, and unnecessary loitering.

The platform was implemented in MATLAB® UAV Toolbox and validated through more than 2,000 simulated episodes that varied obstacle density, wind disturbances, and delivery order. Convergence was achieved with a learning rate of 0.05, a discount factor of 0.99, and an ε-greedy exploration policy whose ε decayed from 0.8 to 0.05. The trained controller consistently reached all delivery points without collisions, attaining a 100 % mission completion rate in every test scenario. Compared with classic A* path-planning on equivalent maps, the learned policy reduced average flight distance by 18 % and cut estimated battery consumption by 22 %, while computing decisions in real time (≤1 ms per step on a standard laptop).

Hardware considerations—including lightweight carbon-fiber frames, brushless propulsion, and modular sensor suites (GNSS, dual-redundant IMUs, optional LiDAR)—were incorporated to ensure manufacturability, cost efficiency, and compliance with ISO 21384-3:2019 and local civil-aviation regulations. A fail-safe strategy combining geofencing, return-to-launch, and low-battery emergency landing was designed to guarantee operational safety.

The proposed framework demonstrates that reinforcement learning can endow small UAVs with adaptive, energy-aware navigation capabilities suitable for dense urban logistics. Ongoing

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work focuses on (i) replacing the tabular Q-table with a deep neural network for seamless scaling to larger continuous workspaces, (ii) integrating real-time LiDAR perception for dynamic obstacle avoidance, and (iii) extending the concept to cooperative multi-drone delivery fleets.

Keywords: Autonomous drones, Q-learning, package delivery, reinforcement learning, 3-D path planning.

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DEVELOPMENT OF SAFE AND STABLE ALGORITHMS TO SUPPRESS SYSTEM ABNORMALITIES IN SWARM-BASED UNMANNED AERIAL VEHICLES

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ABSTRACT

This project addresses the challenges of anomalies and behavioral malfunctions within UAV swarms. The primary goal is to ensure uninterrupted task execution by employing learning algorithms that enable real-time detection, isolation, and adaptation without external intervention. Unlike traditional methods, the proposed approach allows the swarm to maintain its operations collectively and efficiently. A comprehensive 3D simulation environment was developed using the MATLAB UAV Toolbox to model UAV kinematics and assess system performance. Various malfunction scenarios are simulated to validate the robustness of the swarm's adaptive behavior. Faulty UAVs are detected and isolated while the remaining units continue the mission seamlessly. This innovative method aims to minimize operational disruptions, ensuring mission success in critical applications, particularly in military and logistics sectors.

Keywords: Autonomous Drone, Border Security, Image Processing, Deep Learning, Object Detection

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DEVELOPMENT OF A DECISION-MAKING ALGORITHM FOR AIR COMBAT USING GAME THEORY AND DYNAMIC PROGRAMMING

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ABSTRACT

Modern air combat scenarios necessitate complex, real-time decision-making for Unmanned Aerial Vehicles (UAVs) under conditions of uncertainty and intense adversarial pressure. In these highly dynamic and hostile environments, optimal strategy selection is critical for mission success and vehicle survival. Factors such as high speeds, limited decision-making time, and the multi-variable nature of the problem pose significant challenges for autonomous decision-making mechanisms, creating an environment where suboptimal decisions can have severe consequences. This study presents a novel decision-making algorithm for autonomous UAVs in air combat environments, innovatively integrating Game Theory (GT) and Dynamic Programming (DP) techniques. In the proposed approach, Game Theory models adversary behaviors and determines the best tactical response to counter-strategies (e.g., avoidance or engagement maneuvers). Simultaneously, Dynamic Programming constitutes the strategic planning layer, used to calculate optimal sequences of maneuvers or flight paths over mission stages or in response to changing situations. Predictions of opponent behavior obtained from the Game Theory module inform the optimization process within Dynamic Programming, enabling the synergistic operation of the two techniques. This integration aims to combine both immediate tactical responsiveness and longer-term strategic foresight. The developed algorithm's effectiveness, performance, and robustness have been rigorously validated through comprehensive MATLAB-based simulations involving various challenging air combat scenarios. Simulation results clearly demonstrate the algorithm's ability to dynamically adapt to changing threats and targets, perform effective threat prioritization in complex situations, and generate optimized decisions that significantly enhance mission effectiveness specifically by achieving a successful balance between survival and objective completion. This research represents a significant step towards improving the autonomous capabilities of UAVs in dynamic and hostile airspaces and powerfully demonstrates the potential offered by integrating Game Theory and Dynamic Programming into air combat decision-making processes, supported by robust simulation-based evidence.

Keywords: Air Combat, Unmanned Aerial Vehicles (UAVs), Autonomous Decision-Making, Game Theory, Dynamic Programming, Maneuver Optimization, MATLAB Simulation.

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CONVOLUTIONAL VISION TRANSFORMER-BASED AUTOMATED MEDICAL REPORT GENERATION

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ABSTRACT

Automatic medical report generation from chest X-ray images has attracted increasing attention due to its potential to enhance diagnostic efficiency and reduce clinical workload. Despite significant progress achieved by conventional deep learning-based architectures, existing approaches suffered from limitations in capturing diagnostically relevant visual details and generating clinically coherent descriptions. This study proposes an encoder-decoder approach to address these limitations by integrating a Convolutional Vision Transformer (CVT) as the image encoder and a pre-trained GPT-2 model as the language decoder. The CVT encoder leverages both convolutional priors and the global modeling capacity of transformers, while the GPT-2 decoder ensures fluent and contextually coherent report generation. In addition, organ segmentation masks were incorporated into the training process, and their impact on the proposed approach to focus on clinically significant regions was observed. The proposed approach has been trained and evaluated on the PadChest dataset, which contains a large-scale collection of chest X-ray images paired with radiology reports. Experimental results demonstrate that the proposed approach outperforms conventional deep learning-based models in terms of accuracy, clinical relevance, and linguistic coherence of the generated reports.

Keywords: Medical Report Generation, Radiology, Convolutional Vision Transformers, Image Processing

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EFFICIENT VISUAL INTERPRETATION WITH K-MEANS BASED COLOR CLUSTERING FOR VIDEO CAPTIONING

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ABSTRACT

Video captioning is a significant challenge in computer vision, as it relies on the effective analysis of visual information to produce meaningful textual descriptions. This task requires accurate and efficient interpretation of visual information to achieve high-quality generated captions. Earlier methods mainly relied on traditional sequential models, which often struggled from capturing long-range dependencies and complex motion patterns in videos. These challenges have motivated the development of more robust frameworks to improve accuracy and reliability in video captioning. Therefore, recent studies have emphasized the role of advanced visual information processing techniques, like transformer-based approaches, in enhancing the performance of video captioning tasks. An innovative approach is introduced to enhance visual interpretation for video caption generation through the application of K-means-based color clustering. The process of segmenting video frames into dominant color clusters contributes to reducing visual complexity, thereby enabling an efficient extraction of key features. This color-based feature representation is subsequently incorporated into a transformer-based deep learning framework, and its impact on the accuracy and relevance of generated captions is evaluated. Moreover, experiments on the MSVD and MSR-VTT datasets demonstrate that color clustering improves the identification of key visual elements, leading to substantial enhancements in both the descriptiveness and coherence of the generated captions.

Keywords: Deep Learning, Natural Language Processing, Computer Vision, Video Captioning

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A BENCHMARK STUDY OF TRANSFORMER LAYERS IN K-MEANS COLOR CLUSTERED IMAGE CAPTIONING

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ABSTRACT

Automated image captioning is a task in computer vision and natural language processing, enabling systems to generate meaningful textual descriptions of visual content for applications such as content indexing, and human-computer interaction. Enhancing the efficiency of these systems is essential to ensure accurate, contextually relevant visual descriptions in automated captioning. Earlier approaches mainly rely on deep convolutional neural networks for feature extraction and language models for caption generation. However, these methods often suffer from limitations due to high visual complexity and redundant features in images, which reduced caption accuracy and contextual relevance. This study integrates K-means color clustering with transformer-based architecture to optimize image captioning performance. Images are segmented into color-based clusters before feature extraction using K-means clustering, which enhances key features while reducing visual complexity. The segmented images are subsequently processed using a Vision Transformer to assess the impact of pre-processing on caption accuracy and contextual relevance. The experimental framework utilizes the VizWiz Captions dataset to evaluate performance, examining how the combination of color clustering and transformer depth affects descriptive quality. This benchmark study offers valuable insights into optimizing transformer-based image captioning, highlighting potential improvements in computational efficiency and captioning accuracy.

Keywords: Deep Learning, Natural Language Processing, Computer Vision, Image Captioning

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AUTOMATED CHEST X-RAY PROJECTION CLASSIFICATION

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ABSTRACT

Chest radiographs are among the most widely used imaging techniques in the evaluation of pulmonary, cardiac, and breast-related conditions. In recent years, the interpretation of these images has increasingly involved the use of computer-aided diagnosis (CAD) systems, which aim to improve diagnostic accuracy and minimize inter-observer variability. Identification of the projection plane is essential to the performance of these systems due to the fact that variations in projection view -typically frontal or lateral- significantly impact the appearance of anatomical structures and pathological features. This study proposes a deep learning-based approach for the automatic classification of chest X-ray projections. Therefore, various CNN architectures and ViT models have been trained to detect anatomical differences and categorize the images into frontal and lateral views. Among the fine-tuned models via transfer learning, MobileNetV2 yielded the best results for PadChest dataset. The training process was conducted using the Adam optimization algorithm and the cross-entropy loss function. Evaluation metrics such as accuracy, sensitivity, specificity, and F1-score demonstrated the effectiveness of the proposed model in projection classification tasks.

Keywords: Projection, Image Classification, Chest X-ray, Convolutional Neural Networks, Vision Transformer

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TRANSFORMER-BASED SEQUENCE-TO-SEQUENCE MEDICAL REPORT GENERATION

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ABSTRACT

The generation of detailed and accurate medical reports from diagnostic images has received increasing attention in recent years. Earlier studies in medical report generation have focused on traditional artificial neural network-based approaches to transform medical images into meaningful text. However, these studies suffered from challenges including identification of disease-specific features, long-range dependencies in medical images, and coherent report generation with medical terminology. In order to address the challenges, this study presents an approach to medical report generation using a transformer-based sequence-to-sequence (Seq2Seq) architecture. Therefore, the Vision Transformer and the transformer-based language model are leveraged for feature extraction and comprehensive medical report generation, respectively. The performance of this approach is evaluated using the IU-Xray dataset, which contains radiological images paired with expert-generated reports. In conclusion, the findings demonstrate that the transformer-based Seq2Seq model not only captures significant medical details with high accuracy but also structures these details into comprehensive and clinically useful reports.

Keywords: Transformer, Medical Report Generation, Image Captioning, Attention Mechanism

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AUTOMATED CHEST X-RAY GENDER CLASSIFICATION

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ABSTRACT

Chest X-ray images are a significant diagnostic resource in the evaluation of pulmonary, cardiac, and breast tissue conditions. These images include not only structures such as diseases and organs, but also anatomical features that may indicate biological gender. The identification of these biological variables, which contain distinctive information related to the disease, are a significant challenge for computer-aided automatic diagnosis systems. This study presents a deep learning framework for automated classification of gender from chest X-ray images. Therefore, the models based on Convolutional Neural Networks (CNNs) and the Vision Transformer (ViT) were employed to recognize gender-specific anatomical characteristics. Various pretrained CNN architectures, including ResNet-18, MobileNetV2, and DenseNet-121, were fine-tuned using transfer learning. Model performance was evaluated using accuracy, sensitivity, specificity, and F1-score metrics. The results demonstrated that the proposed models can effectively distinguish between male and female chest X-ray images. This approach aims to accelerate gender identification, optimize diagnostic workflows, and support radiologists in clinical decision-making.

Keywords: Gender Classification, Chest X-ray, Convolutional Neural Networks, Vision Transformer, Medical Imaging

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SİLENE AEGYPTİACA' BİTKİSİNİN GÜNEYDOĞU ANADOLU BÖLGESİ POPÜLASYONLARINDA TÜR DELİMİTASYONU

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ÖZET

Sistematik çalışmalarda tür, temel birim olarak kabul edilir ve tür delimitasyonu, biyolojik çeşitliliğin doğru bir şekilde tanımlanması açısından büyük önem taşır. *Silene aegyptiaca,* Akdeniz çevresinde yayılış gösteren tek yıllık bir bitkidir. Mevcut moleküler çalışmalar, *S. aegyptiaca*'nın yüksek düzeyde genetik çeşitlilik barındıran bir tür kompleksi olduğunu ortaya koymuştur. Ancak bu çalışmalar, Türkiye'nin Güneydoğu Anadolu Bölgesi'nde geniş bir yayılış alanına sahip olan *S. aegyptiaca*'yı yalnızca sınırlı sayıda örnekle temsil etmektedir ve bu nedenle bölgedeki olası genetik çeşitliliği yeterince yansıtmamaktadır.

Bu çalışmanın amacı, *S. aegyptiaca*'nın Türkiye'nin Güneydoğu Anadolu Bölgesi'ndeki olası farklı soylarında, multispecies coalescent (MSC) modeline dayalı bir tür delimitasyonu gerçekleştirmektir. Bu amaçla, ilgili coğrafi yayılıştan toplanan örneklerden, filogenetik analizlerde yaygın olarak kullanılan lokuslara ait DNA dizileri elde edilmiş ve bu veriler Bayesian yaklaşımlı filogenetik yöntemlerle analiz edilmiştir. Çalışmada, MSC model esaslı bir Bayesian yöntem olan "STACEY" tür delimitasyon methodu kullanılmıştır.

Elde edilen ön sonuçlar, önceki çalışmalarla paralellik göstermekte ve *S. aegyptiaca*'nın Güneydoğu Anadolu popülasyonlarında da yüksek genetik çeşitliliğin varlığına işaret etmektedir.

Anahtar Kelimeler: Tür delimitasyonu, Silene aegyptiaca, Multispecies coalescent, Filogenetik, Tür ağacı, Stacey

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INVESTIGATION OF THE EFFECT OF ANTIBIOTIC RESISTANCE DEVELOPED IN *Klebsiella pneumoniae* WITH SUB-MINIMUM INHIBITORY CONCENTRATION AND CROSS-ANTIBIOTIC RESISTANCE ON BIOFILM FORMATION

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ABSTRACT

Antibiotic resistance is increasingly recognized as a critical global health challenge, rendering once-treatable infections more difficult to manage**.** This research explores how exposure to sub-minimum inhibitory concentrations (Sub-MIC) of antibiotics influences resistance development, cross-resistance, and biofilm formation in *Klebsiella pneumoniae*. Although *K. pneumoniae* is a Gram-negative, encapsulated, and non-motile bacterium that naturally inhabits the human gut, it can potentially cause severe infections under certain conditions.

The primary objective of this study is to examine how sub-MIC levels of antibiotics contribute to resistance development in *K. pneumoniae*, assess the emergence of cross-resistance patterns, and determine how these changes impact the ability of bacteria to form biofilms. Furthermore, the research evaluates how specific environmental factors, such as temperature (37°C and 45°C), varying glucose concentrations (ranging from 0% to 2.5%), and different resistance profiles, affect the biofilm-forming capacity of the bacteria.

The findings revealed that biofilm production was more pronounced at 37°C than 45°C, indicating that lower temperatures favour biofilm formation in *K. pneumoniae*. Additionally, an increase in glucose concentration correlated with reduced biofilm development. However, no clear association was identified between antibiotic resistance and biofilm formation.

Keywords: *Klebsiella pneumoniae*, Antibiotic Resistance, Sub-Minimum Inhibitory Concentration (Sub-MIC) Application, Cross-Antibiotic Resistance, Biofilm

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PREDICTIVE MODELLING APPROACH TO UNDERSTAND THE COMBINED EFFECTS OF TEMPERATURE, pH, GLUCOSE, NaCl, AND MAGNESIUM ON *Klebsiella pneumoniae* BIOFILM DEVELOPMENT

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ABSTRACT

Biofilms are structured microbial communities embedded in a self-produced extracellular polymeric substance (EPS), facilitating bacterial adherence, enhancing resistance to environmental stress, and presenting major challenges in clinical treatment.

Klebsiella pneumoniae demonstrates substantial biofilm-forming capabilities, amplifying its pathogenic potential in nosocomial environments. Its propensity to colonize medical devices and adopt distinct phenotypes within biofilms further reinforces its antimicrobial resilience.

This study systematically evaluates the individual and combined effects of temperature, pH, glucose, sodium chloride, and magnesium ion concentrations on the biofilm-forming ability of *K. pneumoniae* BAA 1706. A framework was established through comprehensive statistical analysis and predictive regression modelling to quantify and forecast biofilm production under varying environmental conditions.

Notably, synergistic interactions, particularly between temperature and pH, significantly influenced biofilm dynamics. The findings offer valuable insights for developing targeted biofilm inhibition strategies, contributing to improved infection control in clinical and environmental settings.

Keywords: Biofilm, *Klebsiella pneumoniae,* Predictive Modelling

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INVESTIGATION OF WATER RETAINING POLYMER HYDROGEL USED IN AGRICULTURE

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ÖZET

Human beings owe their lives entirely to food, food to agriculture, and agriculture to soil and water. Therefore, the decrease in available water in the world as a result of human activities, the infertility of the soils that have been changed during the day, the division and rupture of soil sections create serious problems for future generations. Finally, developments in the chemical sector, detailed, projects aimed at agricultural activities of smart education that can hold water and fertilizer materials in their structures and then sell these materials in a controlled manner, make significant contributions to the implementation of effective agriculture in the world. For this reason, hydrogels, which are smart materials, have been the center of attention in recent years due to their superior properties in terms of agricultural applications. In this study, the effectiveness of agricultural applications with soil mixed with hydrogel was investigated. Parsley, which needs more water for its growth, was planted as seed. The growth of the seeds consisting of only soil with hydrogel added soil were observed. As a result, by taking advantage of the water retention capacity of hydrogels, the water needs of the soil are met and efficient agricultural activities are carried out with less water use.

Keywords: hidrogel, agriculture, polymer, water,

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DEFICIT IRRIGATION EFFECT ON SEED YIELD AND QUALITY OF PEPPER

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ABSTRACT

Drought stress, increasing its effects with climate change, is one of the most important abiotic stress factors adversely affecting growth and development of plants. Although effects of drought stress on plants vary, different managerial strategies are taken to mitigate its negative effects. In pepper, although drought stress effect on yield and quality losses is known, its effects on seed quality are unknown. In this current research, three irrigation regimes were applied to the Burkalem pointed pepper variety: one full irrigation treatment (I_{100}) and two water deficit stress applications (75% of the full irrigation treatment – I_{75} and 50% of full irrigation treatment- I_{50}). In results, both the carotenoid and protein contents increased as water stress increased and the lowest carotenoid and protein content were obtained from I_{100} treatment. Deficit irrigation applied to pepper had statistically significant effects on yield and yield components depending on severity of water stress: while the highest fruit yield per plant was obtained from full irrigation as 191 g, significant decreases in yield occurred as water constraint increased. Water deficiency application to pepper had statistically significant effects on seed quality: while 2.99 g of seeds per plant were obtained from full irrigation, and 0.20 g of seeds was obtained from I_{50} subject. The maximum 1000-seed weights were obtained from the irrigation treatments namely full irrigation and 25% deficit irrigation, 3.87 and 3.45 g, respectively. In addition, deficit irrigation significantly restricted seed germination and emergence performance in pepper. As a result, in seed production for pepper seed sector, plants should not be exposed to water deficit conditions due to the resulting remarkable quality losses in seeds.

Keywords: Abiotic stress, *Capsicum annum*, climate change, photosynthesis activity, seed quality.

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TÜRKİYE ORMANCILIĞINDA YABANCI BİR TÜR: YALANCI AKASYA

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ÖZET

Bu çalışma, Dünya'da geniş yayılış alanına sahip, ve ülkemiz ormancılığında önemli ekolojik ve ekonomik değere sahip yabancı/egzotik Yalancı Akasya (*Robinia pseudoacacia L.*) üzerinde gerçekleştirilmiştir. Araştırmaya konu Yalancı Akasya, ülkemizde geniş ekonomik, ekolojik kullanım alanına sahiptir ve ağaçlandırma uygulamalarında önde gelen yabancı türlerden biridir. Kumul alanlarda, erozyonu maruz kalmış sahaların rehabilitasyonunda, bulunduğu alanlarda toprağı azotça zenginleştirip iyileştirmesi, yol kenarı ve orman içi açıklıklarda, tel direği, kayık gibi birçok alanlarda kullanımına yer verilmektedir. Mevcut ormanlardan sürdürülebilir şekilde faydalanmanın sağlanması amacıyla, insanların doğal kaynaklara olan talebinin artması, çalışmaya konu Yalancı Akasya türünün sahip olduğu geniş kullanım alanı, ekolojik ve ekonomik önemi nedeniyle, türe olan talebi de artırmaktadır. Türün ağaçlandırmalarda kullanılan tescilli tek tohum kaynağı ise Isparta yöresinde yer alan 61.9 hektar büyüklüğündeki tohum meşceresidir. Bu çalışma kapsamında, türün ekonomik önemi ve ekolojik değeri ilgili literatür ışığında irdelenmeye çalışılmıştır.

Anahtar Kelimeler: *Robinia pseudoacacia*, ağaçlandırma, ekoloji, erozyon, ıslah.

AN EGZOTIC SPECIES IN TURKISH FORESTRY: BLACK LOCUST

ABSTRACT

This study was carried out on the Black locust *(Robinia pseudoacacia L.)* species, which has a wide distribution area in the world and Turkey and has an important ecological and economic value in our forestry as an egzotic species. The species in question has used widely in Türkiye

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by afforestation practices. It is used in many areas such as rehabilitation of sand dunes, erosion-exposed areas, enriching and improving the soil with nitrogen in the areas where it is located, roadside and forest clearings, wire poles, boats. In order to ensure sustainable utilization of existing forests, the increase in people's demand for natural resources, the wide usage area of the False Acacia species in question, it’s ecological and economic importance, and the demand for the species and its cultivation practices are also increasing. The species has a seed source, used in afforestation practices, established at Isparta by 61.9 ha. Within the scope of this study, the economic importance and ecological value of the species were tried to be examined in the light of the relevant literature.

Keywords: afforestation, breeding, ecology, erosion, *Robinia pseudoacacia*.

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BiLSTM-BASED TYPE-1 GLUCOSE PREDICTION WITH MULTI-PARAMETER INPUT ANALYSIS

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ABSTRACT

Accurate prediction of glucose levels using continuous glucose monitoring data is crucial for diabetes management, enabling timely interventions to reduce hypo- and hyperglycemic events. However, predicting future glucose levels remains a challenging task due to the complex and variable nature of glucose levels. While artificial intelligence based models have been widely applied to address these complexities, traditional models often lack the ability to capture the temporal dependencies essential for accurate prediction. To address this limitation, we compare Long Short-Term Memory (LSTM) and Bidirectional LSTM (BiLSTM) architectures for enhanced glucose prediction, evaluating their performance with varying numbers of physiological parameters. The prediction models were evaluated on the OhioT1DM dataset, demonstrating superior performance for 30-min prediction horizon. BiLSTM achieved a root mean square error (RMSE) of 13.54 mg/dL for 30-min horizons, showing a slight improvement over LSTM, which had an RMSE of 13.59 mg/dL when processing three parameters. Furthermore, our analysis identifies optimal parameter combinations for different prediction scenarios, demonstrating that bidirectional processing offers advantages in capturing complex glucose dynamics.

Keywords: Glucose prediction, Continuous glucose monitoring, Long Short-Term Memory, Bidirectional LSTM, Multi-parameter.

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A BENCHMARK STUDY OF RECURRENT NEURAL NETWORKS WITH EXTENSIONS FOR GLUCOSE PREDICTION

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ABSTRACT

Predicting future glucose levels for diabetes management remains a challenging task due to the complex and non-linear nature of glucose dynamics. Traditional approaches have failed to capture the complex temporal dependencies in glucose dynamics. With the development of deep learning approaches, especially recurrent neural networks (RNNs) and its variants have shown promising results in handling sequential data. Here, we report a systematic evaluation of RNN, bidirectional RNN (BiRNN), gated recurrent unit (GRU), and bidirectional GRU (BiGRU) approaches using the OhioT1DM dataset. Our analysis shows that BiRNN achieves superior performance with a root mean square error of 18.7 mg/dL for 30-minute prediction horizons, outperforming standard RNN (19.2 mg/dL), GRU (19.0 mg/dL), and BiGRU (18.9 mg/dL). The results show that while gating mechanisms offer computational advantages, bidirectional processing plays a more critical role in capturing complex glucose patterns. These findings suggest that simpler bidirectional approaches may be more effective than complex gated variants for glucose prediction tasks, providing valuable insights for the development of future diabetes management systems.

Keywords: Glucose prediction, RNN, GRU, Bidirectional, Deep learning

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REAL-TIME GLUCOSE PREDICTION WITH Q-LEARNING AND KALMAN FILTER FOR PERSONALIZED DIABETES MANAGEMENT

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ABSTRACT

Accurate glucose prediction is critical for effective diabetes management, enabling timely intervention and reducing the risk of complications. Machine learning (ML) has been widely applied to glucose prediction due to its ability to learn complex physiological patterns from continuous glucose monitoring data. However, traditional ML models often lack the adaptability to dynamically changing conditions that are essential for personalized glucose prediction. Reinforcement learning (RL) has emerged as a promising approach to improve blood glucose prediction through the use of sequential action selection and adaptability. RL-based models can optimize personalized strategies for the regulation of blood glucose levels by continuously learning from historical data and adapting to variations in individual metabolic responses. Despite its potential, RL suffers from stability, adapting to different patient conditions and handling inconsistent or limited data. In addition, RL models require extensive trial and error to find the best strategies, which can initially cause inaccurate predictions and require significant computational power. To address these limitations, we propose the integration of the Kalman filter (KF) with RL. The KF, known for its real-time state estimation and noise reduction capabilities, enhances the learning efficiency and stability of RL-based frameworks. By combining RL with the KF, the proposed model aims to improve the reliability and accuracy of glucose prediction models, offering a more robust and adaptive solution for type 1 diabetes management.

Key Words: Q-Learning, Kalman Filter, Reinforcement Learning, Machine Learning.

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PERSONALIZED GLUCOSE PREDICTION FOR DIABETES MANAGEMENT WITH Q-LEARNING AND UNSCENTED KALMAN FILTER

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ABSTRACT

Accurate glucose prediction is a key challenge in diabetes management, especially for the development of systems that can adapt to individual physiological patterns. Traditional models, such as the Extended Kalman Filter and the Unscented Kalman Filter (UKF), have been widely applied for glucose prediction. While these models are effective in handling nonlinear systems, their performance can be constrained in highly dynamic environments due to their reliance on linearization and fixed sampling techniques. To address these limitations, this study explores reinforcement learning (RL), which provides real-time feedback to adapt and improve predictions continuously. Specifically, the proposed hybrid model combines Q-Learning (QL), a type of RL that learns optimal actions through trial and error, with the UKF. This integration aims to enhance the accuracy and adaptability of glucose predictions by leveraging the strengths of both model-based and learning-based techniques. The proposed UKF-QL model is evaluated using the OhioT1DM dataset, which includes continuous glucose monitoring data, along with insulin and carbohydrate intake information. The results demonstrate that the hybrid model offers more accurate and robust glucose predictions, providing valuable insights for personalized diabetes management.

Key Words: Unscented Kalman Filter, Q-Learning, Reinforcement Learning, Diabetes Management.

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A HYBRID Q-LEARNING AND EXTENDED KALMAN FILTER APPROACH FOR REAL-TIME GLUCOSE PREDICTION IN DIABETES MANAGEMENT

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ABSTRACT

Effective glucose management is essential for type 1 diabetes patients to minimize the risks of hyperglycaemia and hypoglycaemia. Continuous glucose monitoring systems have improved diabetes management by providing real-time glucose data. However, real-time monitoring alone is insufficient for early intervention, as patients remain at risk until the necessary action is taken based on glucose monitoring. To handle this issue, glucose prediction approaches have been developed, relying on historical data to enable proactive intervention and improved diabetes management. Representative methods include Kalman filtering and its extensions, such as the extended Kalman filter (EKF). However, these techniques have limitations in accurately handling nonlinear glucose dynamics and measurement noise. Recently, reinforcement learning (RL), a subfield of machine learning (ML), has emerged as an alternative method for glucose prediction. Among RL approaches, Q-learning (QL) relies on historical data to improve glucose prediction. However, ML-based approaches are typically trained on standardized datasets, which limits their ability to provide personalized predictions that accurately reflect the unique glucose-insulin interactions of individuals. To address this limitation, we propose a novel approach that integrates EKF with RL-based QL, enabling dynamic adaptation based on glucose data for each patient. The hybrid approach dynamically adjusts predictions based on the glucose data of each patient, resulting in improved prediction accuracy. The proposed hybrid approach leverages the noise-filtering capabilities of EKF while using QL to optimize its parameters based on real-time and historical patient data. Results the OhioT1DM dataset indicate that the proposed approach enhances predictive accuracy and adapts effectively to patient-specific glucose variations over time.

Key Words: Extended Kalman Filter, Q-Learning, Reinforcement Learning, Machine Learning.

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CLASSIFICATION OF CHEST X-RAY IMAGES USING VISION TRANSFORMER

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ABSTRACT

The automatic classification of chest X-ray images has attracted an increasing amount of attention in the last decade due to its potential in rapid and accurate identification of pulmonary conditions. However, in earlier studies, several challenges are associated with this classification task, including image quality, overlapping anatomical structures, and complex pathological characteristics. These challenges are limited the model performance and effectiveness in accurately classifying pulmonary conditions. Therefore, transformer-based deep learning models have been utilized to overcome these challenges recently for medical image classification. This study aims to classify diseases in X-ray images using the Vision Transformer (ViT) model, which processes images as patch sequences and captures detailed features essential for diagnosing lung diseases. Moreover, the attention mechanisms of ViT are employed to focus on relevant pathological features, thereby improving classification performance compared to traditional convolutional neural networks. Experimental results on the IU-Xray dataset demonstrate the advantage of the proposed model in interpretations of the visual patterns associated with different pulmonary diseases, leading to enhanced diagnostic processes in clinical settings.

Keywords: Image Classification, Transformer, Attention Mechanism, Vision Transformer

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INTEGRATION OF GROUNDWATER PARAMETERS INTO SEISMIC LIQUEFICATION ASSESSMENTS WITH PMR TECHNOLOGY

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ÖZET

Zemin sıvılaşması, özellikle doygun ve kohezyonsuz zeminlerde depremler sırasında oluşan geçici taşıma gücü kaybı ile karakterize edilen, mühendislik açısından kritik bir fenomendir. Bu olgu, artan boşluk suyu basıncıyla birlikte, zemin taneleri arasındaki efektif gerilmenin azalması sonucu zeminin sıvı gibi davranmasına neden olur. Bu çalışmada, Proton Manyetik Rezonans (PMR) tekniği kullanılarak bu tür riskli zeminlerde yer altı suyu ile ilişkili hidrojeofizik özellikler değerlendirilmiştir. PMR yöntemi, yer altındaki suya duyarlı manyetik rezonans sinyalleri yoluyla gözenek yapısı, doygunluk düzeyi ve serbest su miktarı gibi parametreleri doğrudan ölçebilen benzersiz bir teknolojidir. Çalışma alanı olarak seçilen bölgelerde yüzey tabanlı PMR ölçümleri gerçekleştirilmiş, elde edilen sinyallerin bozunma süreleri ve genlikleri üzerinden su içeriği dağılımları analiz edilmiştir. Elde edilen veriler, aynı lokasyonda yapılan sondaj loglarıyla karşılaştırılarak yöntemin doğruluğu ve saha uyumu değerlendirilmiştir. PMR'nin özellikle sığ derinliklerde gözenek suyu hakkında sağladığı yüksek çözünürlüklü bilgiler, zeminlerin sıvılaşma eğilimini belirlemede önemli avantajlar sunmaktadır. Sonuçlar, PMR yönteminin hem mühendislik jeofiziği uygulamalarında hem de zemin sıvılaşma potansiyelinin değerlendirilmesinde güçlü ve güvenilir bir alternatif olduğunu göstermektedir.

Anahtar Kelimeler : Zemin sıvılaşması, PMR, gözenek suyu, hidrojeofizik, jeoteknik risk analizi

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EVALUATION OF SEISMIC BEHAVIOR PARAMETERS IN IZMIR AND ITS SURROUNDINGS: MODELLING OF SURFACE DYNAMICS WITH STRONG GROUND MOTION DATA

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ÖZET

İzmir ili, Türkiye'nin batısında yer alan ve karmaşık fay zonları nedeniyle yüksek sismik aktivite gösteren önemli bir yerleşim alanıdır. Depremlerin yıkıcı etkilerini artıran en önemli etkenlerden biri yerel zemin koşullarıdır. Batı Anadolu'da yer alan İzmir, karmaşık tektonik yapılarla çevrili olup, sık aralıklarla yıkıcı depremlerin yaşandığı bir bölgedir. Bu bağlamda yerel zemin karakteristiklerinin ortaya konulması, sismik riskin azaltılmasına yönelik çalışmalar açısından büyük önem arz etmektedir. Bu çalışmada, İzmir sınırları içerisinde kurulu 34 ivmeölçer istasyonuna ait Mw > 5 büyüklüğündeki depremlerin kayıtları kullanılarak zemin davranışına yönelik önemli sismik parametreler analiz edilmiştir. Kuvvetli yer hareketi verileri, GEOPSY yazılımı aracılığıyla işlenmiş; yatay ve düşey bileşenlerden elde edilen genlik spektrumları üzerinden H/V (Horizontal/Vertical) spektral oran eğrileri hesaplanmıştır. Bu eğriler yardımıyla her istasyon için hâkim titreşim periyotları, büyütme değerleri ve bu parametrelere bağlı olarak zemin kırılganlık indeksi (Kg), sismik temel derinlik ve Vs30 değerleri elde edilmiştir. Özellikle kuzey kesimlerde daha uzun periyot ve yüksek amplifikasyon değerleri dikkat çekerken, güneyde daha kısa periyotlar gözlenmiştir. Farklı istasyonlardan elde edilen parametrelerin mekânsal dağılımları, mikro bölgeleme çalışmalarına temel oluşturabilecek nitelikte olup, deprem etkilerine karşı yapı tasarımına yön verecek mühendislik verileri sağlamaktadır. Bu yönüyle çalışma, hem akademik araştırmalar hem de afet risk yönetimi açısından önemli katkılar sunmaktadır.

Anahtar Kelimeler: Spektral analiz, yerel zemin etkisi, H/V oranı, zemin tepkisi, sismik kırılganlık

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ABSTRACT

İzmir province is an important settlement area located in the western part of Türkiye and exhibits high seismic activity due to complex fault zones. One of the most important factors that increase the destructive effects of earthquakes is the local ground conditions. İzmir, located in Western Anatolia, is surrounded by complex tectonic structures and is a region where destructive earthquakes occur at frequent intervals. In this context, revealing the local ground characteristics is of great importance for studies aimed at reducing seismic risk. In this study, important seismic parameters related to ground behavior were analyzed using the records of earthquakes with a magnitude of Mw > 5 belonging to 34 accelerometer stations established within the borders of İzmir. Strong ground motion data were processed by GEOPSY software; H/V (Horizontal/Vertical) spectral ratio curves were calculated from the amplitude spectra obtained from the horizontal and vertical components. With the help of these curves, dominant vibration periods, amplification values and, depending on these parameters, ground fragility index (Kg), seismic foundation depth and Vs30 values were obtained for each station. While longer periods and higher amplification values were particularly notable in the northern parts, shorter periods were observed in the south. The spatial distributions of the parameters obtained from different stations can form the basis of microzonation studies and provide engineering data that will guide structural design against earthquake effects. In this respect, the study provides important contributions to both academic research and disaster risk management.

Keywords: Spectral analysis, local ground effect, H/V ratio, ground response, seismic fragility

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2020 İZMİR DEPREMİ: GEOTEKNİK AÇIDAN İNCELEME VE ZEMİN DAVRANIŞLARI

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ÖZET

Bu çalışmada, 30 Ekim 2020 tarihinde gerçekleşen İzmir Depremi geoteknik mühendisliği açısından somut verilerle ele alınmıştır. İlk olarak, levha hareketleri, fay durumu ve deprem parametreleri incelenerek depremin oluşum süreci değerlendirilmiştir. İkinci olarak, depremden etkilenen bölgelerdeki zemin özellikleri; zemin sınıfı, zemin büyütmesi, zemin sıvılaşması ve maksimum yer ivmesi gibi başlıklar altında analiz edilmiştir. Üçüncü olarak ise yapı kalitesine odaklanılarak, yapıların öngörülen deprem yüklerini karşılayabilme durumları tartışılmıştır. Çalışmanın temel amacı, geoteknik mühendisliğinin önemli konularından bazılarını gerçek bir deprem örneğiyle açıklamak ve deprem sırasında ölçülen maksimum yer ivmesi (PGA) değerleri ile bölge tasarımında kullanılan PGA değerlerini karşılaştırarak mevcut durumun değerlendirilmesini sağlamaktır.

Anahtar Kelimeler: Deprem, Zemin, Levha, Fay, Magnitüt

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INVESTIGATION OF GAMMA RADIATION SHIELDING PROPERTIES IN Fe-FeB-Cu-C MATERIALS

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ÖZET

The gamma radiation shielding properties of four different iron-based alloys produced by powder metallurgy (FeB-0, FeB-48.75, FeB-49, FeB-50) were examined using the 3″x3″ NaI(Tl) scintillation detector at 1.173 MeV and 1.332 MeV. The densities were measured using the Archimedes principle, and gamma shielding measurements were repeated two times for 20 min for each alloy. The linear attenuation coefficients (LAC) of the alloys are 0.380±0.013 and 0.397±0.022 cm^{-1} for FeB-0, 0.370±0.007 and 0.3864±0.010 cm^{-1} for FeB-48.75, 0.353±0.001 and 0.3616±0.016 cm^{-1} for Fe-49, and 0.3677±0.017 and 0.3771±0.029 cm^{-1} for FeB-50 at 1.173 MeV and 1.332 MeV, respectively. The results are consistent with the Phy-X theoretical database. The photon attenuation parameters, such as half-value layer (HVL), ten-value layer (TVL), mean free path (MFP), radiation protection efficiency (RPE), and transmission factor (TF) were also studied.

Anahtar Kelimeler: radiation shield, Ferroboron, mass attenuation coefficient

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DECARBONIZATION AND ENVIRONMENTAL SUSTAINABILITY STRATEGIES IN THE SHIPBUILDING INDUSTRY

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ABSTRACT

With the rapid advancement of industrialization in the past century, carbon emissions have significantly increased, becoming one of the main drivers of global warming and climate change. According to IPCC reports, the global temperature has risen by approximately 1°C over the last 50 years, largely due to greenhouse gas (GHG) emissions. In response, many sectors have committed to achieving net-zero carbon emissions by 2050. The shipbuilding and maritime sector, due to its high energy consumption and reliance on fossil fuels, accounts for around 3% of global GHG emissions. In this context, decarbonization and environmental sustainability strategies in shipyards have gained increasing importance in reducing environmental impact and achieving long-term cost advantages.

In this study, the carbon footprint of a shipyard operating in Türkiye was calculated using the GHG Protocol methodology. Based on the identified major emission sources, applicable strategies were developed, and both the annual carbon reduction potential and cost-benefit analyses of each strategy were conducted. These strategies include the implementation of renewable energy systems, hybrid work models, the use of electric vehicles, rainwater harvesting, and supply chain optimization. The results aim to guide companies in the shipbuilding sector toward reducing their carbon footprint and adopting more sustainable practices.

Keywords : Decarbonization, Carbon footprint, Sustainability, GHG Protocol

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TÜRKİYE'DE AKILLI ULAŞIM SİSTEMLERİNİN DEMİRYOLLARINDA UYGULANMASI

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ÖZET

Ulaştırma, toplumsal yapı ve ekonomik kalkınma üzerinde doğrudan etkili olan stratejik bir sektördür. Ulaşım faaliyetlerinin sürdürülebilir, güvenli ve verimli bir biçimde yürütülebilmesi, büyük ölçüde akıllı ulaşım sistemlerinin entegrasyonu ve etkin kullanımı ile geliştirilebilir. Karayolu, denizyolu gibi diğer ulaştırma alanlarında olduğu gibi raylı sistemlerde de akıllı teknolojiler yaygın şekilde benimsenmekte ve sürekli gelişen dinamik yapısıyla sistem performansına katkı sağlamaktadır. Raylı sistemlerde; istasyon altyapıları, demiryolu hatları, raylı sistem araçları içi sistemler ve merkezi yönetim birimleri gibi alt bileşenlerde akıllı ulaşım sistemleri uygulama alanı bulmaktadır. Araç kontrol ve yönetimi, yolcu hizmetleri, acil durum müdahale süreçleri ve işletme planlaması gibi temel işlevlerde kullanılan bu sistemler; mevcut altyapının ve üstyapının daha güvenli, verimli ve optimize bir biçimde kullanılmasıyla birlikte sefer saatlerinde iyileştirmeler gibi birçok gelişmeye olanak tanımaktadır. Bu çalışmada, Türkiye'de demiryolu endüstrisinde kullanılmakta olan ve geliştirilmekte olan temel akıllı ulaşım sistemleri ele alınmış ve bu sistemlerin kullanım düzeyi ile yaygınlığı diğer ülkelerle kıyaslamalar üzerine değerlendirmelerde bulunulmuştur.

Anahtar Kelimeler : Demiryolu hattı, akıllı ulaşım sistemleri, raylı sistemler, demiryolu araçları

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YÜKSEK HIZLI TRENLERİN TÜRKİYE ULAŞIM AĞI İÇİNDEKİ YERİ VE TERCİH SEBEPLERİ

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ÖZET

Türkiye'de ulaşım altyapısının planlanmasında uzun yıllar boyunca demiryolu yatırımlarına yeterince önem verilmemiştir. Bu durum, ulaşım türleri arasındaki dağılımın dengesizleşmesine yol açmıştır. Ağırlıklı olarak karayolu temelli yapılan planlamalar, çevresel açıdan bazı olumsuzlukları beraberinde getirirken; havayolu taşımacılığı, her ne kadar hız avantajı sunsa da ulaşım ağı içinde her noktaya erişim sağlayamaması nedeniyle önemli bir dezavantaj oluşturmuştur. Tüm bu gelişmeler, ulaşım araçlarında yeni arayışları gündeme getirmiştir. Bu çerçevede güvenlik, hız ve konfor gibi nitelikleriyle öne çıkan yüksek hızlı trenler, Türkiye için alternatif bir ulaşım türü olarak dikkat çekmektedir. Ankara, İstanbul, Eskişehir ve Konya arasında hizmete giren hatların yanı sıra, yapımı süren ve gelecekte planlanan yeni hatlarla şehirler arası bağlantının daha hızlı, güvenli ve konforlu hâle getirilmesi amaçlanmaktadır. Bu çalışmada yüksek hızlı trenlerin; güvenlik, konfor, seyahat süresi ve maliyet gibi yönlerden sunduğu katkılar ele alınmış; mevcut hatlardaki diğer ulaşım türleriyle, Türkiye'deki ve dünyadaki diğer raylı sistemlerle karşılaştırmalar yapılmıştır. Sonuç olarak yüksek hızlı trenlerin, birçok açıdan daha avantajlı bir ulaşım imkânı sunduğu ortaya konmuştur.

Anahtar Kelimeler : Yüksek hızlı tren, ulaştırma, ulaştırmada yolcu tercihleri, raylı sistemlerde konfor

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ELEKTRO EROZYONLA İŞLEMEDE ENERJİ TÜKETİMİ ÜZERİNE GÜNCEL BİR DEĞERLENDİRME

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ÖZET

Geleneksel olmayan işleme yöntemleri arasında elektro erozyonla işleme (EDM), işlenebilirliği zor malzemeler ve karmaşık geometrili parçaların üretimi açısından çok elverişli olması sayesinde en çok kullanılan imalat yöntemidir. Bu yöntemde, elektriksel ve elektriksel olmayan birçok parametre işlenen malzemelerde istenilen yüzey bütünlüğü ve ölçü tamlığı kriterlerini önemli düzeyde etkilemektedir. Aynı zamanda, EDM teknolojisi imalat endüstrisinde giderek daha fazla öne çıkarken, işleme süresinin çok fazla olması yüzünden yüksek enerji tüketimi ve düşük işleme verimliliği ile dikkat çekmektedir. Bu çalışmada, EDM teknolojisinde enerji tüketimi ve verimlilik odaklı literatürün kapsamlı bir analizi yapılmıştır. Araştırmalar, enerji tüketimi ve verimliliğinin iyileştirilmesini etkileyen en önemli zorluğun üretim-planlamada optimum elektriksel parametrelerin belirlenmesi olduğunu göstermiştir. Diğer yandan, dünyada endüstriyel imalat sektörü toplam enerji kullanımının %37'si ve toplam CO_2 emisyonlarının %17'sinden sorumludur. Ancak, EDM'de enerji tüketimi ve karbon emisyonlarının değerlendirilmesi üzerine sınırlı sayıda çalışma mevcuttur. Sürdürülebilir imalat açısından verimlilik, kalite, maliyet ve çevresel etkiler temel kriterler olduğundan, EDM'de enerji verimliliğinin kapsamlı olarak araştırılmaya ihtiyacı vardır. Bu noktada, regresyon analizi, cevap yüzey metodolojisi ve yapay sinir ağı gibi deneysel modelleme teknikleri ile çeşitli kalite kriterleri (yüzey pürüzlülüğü, ölçü tamlığı, malzeme kaldırma hızı, elektrot aşınma hızı vb.) ve enerji tüketimi için tahmin modellerinin geliştirilmesi güncel bir araştırma konusu haline gelmiştir.

Anahtar Kelimeler: EDM, Enerji tüketimi, Modelleme, Optimizasyon

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EKLEMELİ İMALAT PARÇALARDA SON İŞLEM YÖNTEMLERİNİN ANALİZİ

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ÖZET

Eklemeli imalat (AM) teknolojisinde, plastik, metal, seramik ve kompozit malzemeler tasarlanan üç boyutlu (3D) modele göre katman katman biriktirilerek somut ürünler haline dönüştürülür. Ergiyik biriktirme modelleme, seçici lazer eritme, bağlayıcı püskürtme, malzeme ekstrüzyonu ve tel ark eklemeli imalat gibi AM teknolojileri, geleneksel talaş kaldırma teknolojileriyle karşılaştırıldığında kısa üretim çevrimi, düşük maliyet, esnek tasarım ve özelleştirilebilirlik gibi avantajlara sahiptir. Ancak, AM ürünlerde düşük boyutsal doğruluk ve yüzey pürüzlülüğü, düşük dayanım ve sertlik ile birlikte kalıntı gerilme, mikro çatlak ve boşluk gibi yüzey kusurları önemli problemler arasında yer almaktadır. Söz konusu kusurları elimine etmek ve endüstriyel üretimde eklemeli imalatı yaygınlaştırmak için son işleme tekniklerinin uygulandığı görülmektedir. Bu çalışma, eklemeli imalat ürünlere uygulanan son işlem teknolojileri sistematik bir incelemesini sunar. Son işlem yöntemleri arasında yüzey iyileştirme, kimyasal işlem, ısıl işlem ve sonraki işleme yer alır. AM teknolojilerinin işlem parametrelerine bağlı oluşan kusurlar çeşitli mekanik, kimyasal veya ısıl işlem teknikleriyle giderilir. Kimyasal ve ısıl işlemlerin yanı sıra yüzey kaplama, malzemenin korozyon direncini ve yüzey sertliğini artırabilmektedir. Mekanik kesme işlemi, lazerle işleme ve elektrokimyasal parlatma gibi sonraki işleme yöntemleri, AM ürünlerin boyutsal doğruluğunu ve yüzey kalitesini iyileştirmektedir. Önümüzdeki süreçte verimliği artırmak amacıyla son işlemlerin doğrudan eklemeli üretim iş akışı ile bütünleştirilmesi önerilmektedir. Bu bağlamda, AM'de otomasyon ve robotik teknolojileri ile birlikte kontrol mekanizmalarının üretim sistemine entegrasyonu çok önemlidir.

Anahtar Kelimeler: Eklemeli imalat, Son işlem, Yüzey işlemi, Doğruluk

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DEVELOPMENT OF AN INTEGRATED BIM (BUILDING INFORMATION MODELING) SYSTEM IN A CLOUD COMPUTING PLATFORM

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ABSTRACT
The construction industry is increasingly adopting Building Information Modeling (BIM) to enhance project efficiency and collaboration. This study presents the development of an integrated BIM system hosted on a cloud computing platform, aiming to address challenges related to data accessibility, interoperability, and real-time collaboration among stakeholders. The purpose of this research is to design a scalable and secure cloud-based BIM architecture that supports multi-user access and seamless data exchange across different software environments. The methodology involves system design, implementation, and testing using real-world construction project data. Key features include centralized data storage, version control, and integration with IoT devices for live monitoring. Results demonstrate improved project coordination, reduced data redundancy, and enhanced decision-making speed. The cloud platform allows stakeholders to access updated models anytime, anywhere, facilitating remote collaboration and reducing project delays. The study concludes that integrating BIM with cloud computing significantly advances digital construction practices by offering a flexible, efficient, and cost-effective solution. This innovation supports sustainable project management and paves the way for future smart construction technologies.

Keywords: Building Information Modeling, cloud computing, construction management, digital collaboration

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SIMULATION AND PARAMETER OPTIMIZATION OF A RECTANGULAR MAGNETIC FIELD GENERATOR FOR INDUSTRIAL APPLICATIONS

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ABSTRACT
Magnetic field generators are critical components in various industrial processes, including material handling and electromagnetic forming. This paper focuses on the simulation and parameter optimization of a rectangular magnetic field generator to enhance its operational efficiency and field uniformity. The objective is to develop a computational model using finite element analysis (FEA) to simulate magnetic flux distribution and identify optimal design parameters such as coil dimensions, current intensity, and core materials. The methodology includes iterative simulations combined with optimization algorithms to maximize magnetic field strength while minimizing energy consumption and thermal effects. Results indicate that adjusting coil geometry and current parameters leads to significant improvements in field uniformity and generator performance. The optimized design exhibits reduced power losses and enhanced durability, making it suitable for demanding industrial environments. The study provides valuable insights for engineers seeking to design efficient and reliable magnetic field generators tailored to specific applications. Future work will explore experimental validation and integration with control systems for adaptive operation.

Keywords: Magnetic field generator, simulation, parameter optimization, finite element analysis

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APPLICATION OF ADVANCED MACHINE LEARNING ALGORITHMS FOR STRUCTURAL HEALTH MONITORING

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ABSTRACT
Structural health monitoring (SHM) is essential for ensuring the safety and longevity of infrastructure. This research investigates the application of advanced machine learning algorithms to analyze sensor data for early detection of structural damage. The purpose is to develop predictive models capable of identifying anomalies and forecasting deterioration in real time. The study employs supervised learning techniques including support vector machines, random forests, and deep neural networks, trained on datasets collected from bridges and buildings under various loading conditions. Data preprocessing, feature extraction, and model validation are integral parts of the methodology. Results show that deep learning models outperform traditional algorithms in accuracy and robustness, effectively detecting subtle damage patterns. The models also demonstrate adaptability to different structural types and environmental conditions. This work highlights the potential of machine learning to revolutionize SHM by enabling proactive maintenance and reducing inspection costs. The integration of these algorithms into automated monitoring systems promises enhanced infrastructure resilience and public safety. Future research will focus on expanding datasets and real-time deployment.

Keywords: Structural health monitoring, machine learning, deep learning, predictive maintenance

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THERMAL BEHAVIOR OF SUSTAINABLE CONCRETE MIXES WITH NATURAL INSULATION MATERIALS

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ABSTRACT
Sustainable construction materials are vital for reducing environmental impact and improving energy efficiency. This study examines the thermal behavior of concrete mixes incorporating natural insulation materials such as cork, hemp fibers, and coconut coir. The objective is to evaluate how these additives influence thermal conductivity, heat capacity, and overall insulation performance of concrete. Experimental methods include preparing various concrete formulations, conducting thermal conductivity tests, and analyzing microstructural properties using scanning electron microscopy. Results reveal that natural insulation materials significantly reduce thermal conductivity without compromising mechanical strength, enhancing the concrete's thermal resistance. The study also identifies optimal mix proportions that balance sustainability with structural performance. These findings support the use of bio-based materials in eco-friendly construction, contributing to energy-efficient building envelopes. The research underscores the potential of integrating natural fibers in concrete to meet green building standards and reduce reliance on synthetic insulators. Future work will explore long-term durability and environmental lifecycle assessments.

Keywords: Sustainable concrete, natural insulation, thermal conductivity, eco-friendly materials

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ASSESSING SAFETY RISKS IN URBAN CONSTRUCTION SITES THROUGH MACHINE LEARNING MODELS

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ABSTRACT
Urban construction sites present complex safety challenges due to dense environments and diverse hazards. This paper develops machine learning models to assess and predict safety risks on urban construction sites, aiming to enhance preventive measures and reduce accidents. The research collects extensive safety incident data, environmental factors, and worker behavior records from multiple urban projects. Various algorithms, including decision trees, gradient boosting, and neural networks, are trained to identify risk patterns and forecast potential hazards. The methodology integrates data preprocessing, feature selection, and model evaluation using cross-validation techniques. Results demonstrate high predictive accuracy, enabling early warnings and targeted interventions. The models also provide insights into critical risk factors such as equipment usage, weather conditions, and site layout. The study advocates for incorporating AI-driven risk assessment tools into construction management systems to improve safety culture and regulatory compliance. Challenges related to data quality and model interpretability are discussed, with recommendations for future research focusing on real-time monitoring and integration with IoT sensors.

Keywords: Construction safety, machine learning, risk assessment, urban construction

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OPTIMIZATION OF THERMAL STABILITY IN COMPOSITE MATERIALS FOR AEROSPACE APPLICATIONS

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ABSTRACT
Composite materials are critical in aerospace engineering due to their high strength-to-weight ratios and thermal resistance. This study focuses on optimizing the thermal stability of advanced composites used in aerospace applications. The objective is to enhance material performance under extreme temperature fluctuations encountered during flight. The research employs experimental thermal analysis techniques, including thermogravimetric analysis and differential scanning calorimetry, alongside computational modeling to investigate degradation mechanisms and thermal expansion behavior. Various composite formulations with different fiber reinforcements and matrix resins are tested. Results indicate that specific combinations of carbon fibers and high-performance polymers significantly improve thermal stability and reduce thermal stress. The study also explores the effects of nano-additives on thermal conductivity and mechanical properties. These findings contribute to the development of safer, more reliable aerospace components capable of withstanding harsh operational environments. The paper concludes with recommendations for material selection and processing methods to achieve optimal thermal performance. Future research will extend to fatigue testing and environmental aging.

Keywords: Thermal stability, composite materials, aerospace engineering, material optimization

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IMPACT OF STRUCTURAL DESIGN ON THE PERFORMANCE OF BRIDGES UNDER SEISMIC LOADING CONDITIONS

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ABSTRACT

Seismic resilience is a paramount consideration in bridge engineering, especially in earthquake-prone regions. This paper investigates how different structural design approaches influence the performance of bridges subjected to seismic loading. The study compares traditional reinforced concrete designs with innovative base isolation and energy dissipation systems through numerical simulations and experimental shake table tests. The methodology includes dynamic analysis under various earthquake scenarios to assess stress distribution, displacement, and failure modes. Results demonstrate that incorporating seismic design features significantly enhances bridge stability and reduces damage during earthquakes. The research also evaluates cost-benefit aspects of advanced designs, highlighting their long-term value in reducing repair costs and ensuring public safety. The paper discusses design recommendations for engineers and policymakers to improve seismic preparedness in infrastructure projects. It emphasizes the importance of integrating updated seismic codes and continuous monitoring to adapt to evolving risk profiles. This work contributes to safer bridge construction practices and disaster risk reduction strategies.

Keywords: Seismic design, bridge engineering, structural performance, earthquake resilience

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ENERGY-EFFICIENT MATERIALS IN CONSTRUCTION FOR REDUCING ENVIRONMENTAL IMPACT: A CASE STUDY

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ABSTRACT

Reducing the environmental footprint of construction materials is critical for sustainable development. This case study evaluates the use of energy-efficient materials in a commercial building project, focusing on their contribution to lowering carbon emissions and operational energy consumption. The research assesses materials such as insulated concrete forms, recycled steel, and low-emissivity glass through life cycle analysis and energy modeling. Data on material sourcing, manufacturing processes, and building energy performance are analyzed to quantify environmental benefits. Results indicate that the selected materials significantly reduce embodied energy and improve thermal efficiency, leading to substantial energy savings over the building's lifespan. The study also considers economic factors, demonstrating cost-effectiveness through reduced utility expenses and maintenance. Challenges related to material availability and regulatory compliance are discussed. The paper concludes that integrating energy-efficient materials is a viable strategy for mitigating climate change impacts in the construction sector. Recommendations for architects, engineers, and policymakers emphasize the importance of adopting green building standards and promoting innovation in material technologies.

Keywords: Energy-efficient materials, sustainable construction, environmental impact, life cycle analysis

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DEVELOPMENT OF MOLECULAR IMPRINTED POLYMERS (MIPS) FOR THE SELECTIVE REMOVAL OF CARBAMAZEPINE FROM AQUEOUS SOLUTION

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Abstract:

The occurrence and removal of trace organic contaminants in the aquatic environment has become a focus of environmental concern. For the selective removal of carbamazepine from loaded waters molecularly imprinted polymers (MIPs) were synthesized with carbamazepine as template. Parameters varied were the type of monomer, crosslinker, and porogen, the ratio of starting materials, and the synthesis temperature. Best results were obtained with a template to crosslinker ratio of 1:20, toluene as porogen, and methacrylic acid (MAA) as monomer. MIPs were then capable to recover carbamazepine by 93% from a 10-5 M landfill leachate solution containing also caffeine and salicylic acid. By comparison, carbamazepine recoveries of 75% were achieved using a nonimprinted polymer (NIP) synthesized under the same conditions, but without template. In landfill leachate containing solutions carbamazepine was adsorbed by 93-96% compared with an uptake of 73% by activated carbon. The best solvent for desorption was acetonitrile, with which the amount of solvent necessary and dilution with water was tested. Selected MIPs were tested for their reusability and showed good results for at least five cycles. Adsorption isotherms were prepared with carbamazepine solutions in the concentration range of 0.01 M to 5*10-6 M. The heterogeneity index showed a more homogenous binding site distribution.

Keywords: Carbamazepine, landfill leachate, removal, reuse

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PENTACHLOROPHENOL REMOVAL VIA ADSORPTION AND BIODEGRADATION

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Nurina Anuar is with National University of Malaysia

Abstract:

Removal of PCP by a system combining biodegradation by biofilm and adsorption was investigated here. Three studies were conducted employing batch tests, sequencing batch reactor (SBR) and continuous biofilm activated carbon column reactor (BACCOR). The combination of biofilm-GAC batch process removed about 30% more PCP than GAC adsorption alone. For the SBR processes, both the suspended and attached biomass could remove more than 90% of the PCP after acclimatisation. BACCOR was able to remove more than 98% of PCP-Na at concentrations ranging from 10 to 100 mg/L, at empty bed contact time (EBCT) ranging from 0.75 to 4 hours. Pure and mixed cultures from BACCOR were tested for use of PCP as sole carbon and energy source under aerobic conditions. The isolates were able to degrade up to 42% of PCP under aerobic conditions in pure cultures. However, mixed cultures were found able to degrade more than 99% PCP indicating interdependence of species.

Keywords: Adsorption, biodegradation, identification, isolated bacteria, pentachlorophenol.

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FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS

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Abstract:

The objective of this study was to develop vaginal suppository containing lactobacillus. Four kinds of vaginal suppositories containing Lactobacillus paracasei HL32 were formulated: 1) a conventional suppository with Witepsol H-15 as a base, 2) a conventional suppository with mixed polyethylene glycols (PEGs) as a base, 3) a hollow-type suppository with Witepsol H-15 as a base and 4) a hollow-type suppository with mixed PEGs as a base. The release studies demonstrated that the hollow-type suppository with mixed PEGs as the base gave the highest release of L. paracasei HL32 and was microbiological stable after storage at 2- 8°C over the period of 3 months.

Keywords: Lactobacillus paracasei HL32, vaginal suppository, release study, hollow-type, viability.

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SERICIN FILM: INFLUENCE OF CONCENTRATION ON ITS PHYSICAL PROPERTIES

N. Namviriyachote, N. Bang, P. Aramwit

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Abstract:

Silk sericin (SS) is a glue-like protein from silkworm cocoon. With its outstanding moisturization and activation collagen synthesis properties, silk protein is applied for wound healing. Since wound dressing in film preparation can facilitate patients- convenience and reduce risk of wound contraction, SS and polyvinyl alcohol (PVA) films were prepared with various concentrations of SS. Their physical properties such as surface density, light transmission, protein dissolution and tensile modulus were investigated. The results presented that 3% SS with 2% PVA is the best ingredient for SS film forming.

Keywords: Sericin, silk protein, film, wound healing.

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VALIDATION AND APPLICATION OF A NEW OPTIMIZED RP-HPLC-FLUORESCENT DETECTION METHOD FOR NORFLOXACIN

Mahmood Ahmad, Ghulam Murtaza, Sonia Khiljee, Muhammad Asadullah Madni

Abstract:

A new reverse phase-high performance liquid chromatography (RP-HPLC) method with fluorescent detector (FLD) was developed and optimized for Norfloxacin determination in human plasma. Mobile phase specifications, extraction method and excitation and emission wavelengths were varied for optimization. HPLC system contained a reverse phase C18 (5 µm, 4.6 mm×150 mm) column with FLD operated at excitation 330 nm and emission 440 nm. The optimized mobile phase consisted of 14% acetonitrile in buffer solution. The aqueous phase was prepared by mixing 2g of citric acid, 2g sodium acetate and 1 ml of triethylamine in 1 L of Milli-Q water was run at a flow rate of 1.2 mL/min. The standard curve was linear for the range tested (0.156–20 µg/mL) and the coefficient of determination was 0.9978. Aceclofenac sodium was used as internal standard. A detection limit of 0.078 µg/mL was achieved. Run time was set at 10 minutes because retention time of norfloxacin was 0.99 min. which shows the rapidness of this method of analysis. The present assay showed good accuracy, precision and sensitivity for Norfloxacin determination in human plasma with a new internal standard and can be applied pharmacokinetic evaluation of Norfloxacin tablets after oral administration in human.

Keywords: Norfloxacin, Aceclofenac sodium, Methodoptimization, RP-HPLC method, Fluorescent detection, Calibrationcurve.

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ANTIBACTERIAL CAPACITY OF PLUMERIA ALBA PETALS

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Abstract:

Antibacterial activity of Plumeria alba (Frangipani) petals methanolic extracts were evaluated against Escherichia coli, Proteus vulgaris,Staphylococcus aureus, Klebsiella pneumoniae, Pseudomonas aeruginosa, Staphylococcus saprophyticus, Enterococcus faecalis and Serratia marcescens by using disk diffusion method. Concentration extracts (80 %) showed the highest inhibition zone towards Escherichia coli (14.3 mm). Frangipani extract also showed high antibacterial activity against Staphylococcus saprophyticus, Proteus vulgaris and Serratia marcescens, but not more than the zones of the positive control used. Comparison between two broad specrum antibiotics to frangipani extracts showed that the 80 % concentration extracts produce the same zone of inhibition as Streptomycin. Frangipani extracts showed no bacterial activity towards Klebsiella pneumoniae, Pseudomonas aeruginosa and Enterococcus faecalis. There are differences in the sensitivity of different bacteria to frangipani extracts, suggesting that frangipani-s potency varies between these bacteria. The present results indicate that frangipani showed significant antibacterial activity especially to Escherichia coli.

Keywords: Frangipani, Plumeria alba, anti microbial, Escherichia coli

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SYNTHESIS OF POLYMERIC NANOCOMPOSITES FOR ENVIRONMENTAL REMEDIATION OF PHARMACEUTICAL POLLUTANTS

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ABSTRACT

Pharmaceutical pollutants have emerged as a significant environmental concern due to their persistence and potential adverse effects on aquatic ecosystems and human health. This study focuses on the synthesis and characterization of polymeric nanocomposites designed specifically for the remediation of pharmaceutical contaminants in water. The research explores the incorporation of various nanomaterials such as graphene oxide, metal oxides, and carbon nanotubes into polymer matrices to enhance adsorption capacity and catalytic degradation efficiency. Advanced synthesis techniques including in-situ polymerization and solution blending were employed to fabricate the nanocomposites. Comprehensive physicochemical analyses were conducted to evaluate surface area, porosity, and functional group availability, which are critical for pollutant interaction. Batch adsorption experiments demonstrated high removal efficiencies for common pharmaceutical compounds such as antibiotics and analgesics under varying pH and temperature conditions. Furthermore, catalytic degradation tests revealed that these nanocomposites effectively break down pollutants into less harmful byproducts. The study also assessed the reusability and stability of the materials over multiple remediation cycles, indicating promising durability for practical applications. Overall, the findings suggest that polymeric nanocomposites represent a versatile and effective approach to mitigating pharmaceutical pollution in wastewater treatment processes, contributing to environmental sustainability and public health protection. Future work will focus on scaling up synthesis and integrating these materials into existing treatment infrastructures.

Keywords: polymeric nanocomposites, pharmaceutical pollutants, environmental remediation, adsorption, catalytic degradation

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REMOVAL OF HEAVY METALS USING FUNCTIONALIZED BIOSORBENTS FROM AGRO-WASTE

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ABSTRACT

Heavy metal contamination in water sources poses a severe risk to ecosystems and human health, necessitating efficient and sustainable remediation strategies. This research investigates the use of functionalized biosorbents derived from agricultural waste materials for the removal of heavy metals such as lead, cadmium, and mercury from aqueous solutions. The study focuses on modifying agro-waste biomass through chemical treatments to enhance surface functional groups, thereby increasing biosorption capacity. Characterization techniques including Fourier-transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM), and surface area analysis were employed to assess the structural and chemical properties of the biosorbents. Batch adsorption experiments were conducted under varying conditions of pH, contact time, and initial metal concentration to optimize removal efficiency. Results indicated that functionalized biosorbents exhibited significantly higher adsorption capacities compared to raw biomass, achieving removal rates exceeding 90% for targeted metals. Isotherm and kinetic models were applied to elucidate the adsorption mechanisms, revealing chemisorption as the dominant process. The study also evaluated the regeneration potential of the biosorbents, demonstrating effective desorption and reuse over multiple cycles. This approach offers an eco-friendly, cost-effective alternative to conventional heavy metal remediation techniques, promoting waste valorization and environmental protection. The findings support the potential for scaling up biosorbent applications in wastewater treatment facilities, particularly in regions affected by industrial pollution.

Keywords: heavy metals, biosorbents, agro-waste, adsorption, water treatment

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DEVELOPMENT OF BIOSENSOR PLATFORMS FOR DETECTION OF ENVIRONMENTAL CONTAMINANTS

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ABSTRACT

The detection and monitoring of environmental contaminants are critical for safeguarding ecosystems and public health. This study presents the development of advanced biosensor platforms tailored for rapid, sensitive, and selective detection of various pollutants including pesticides, heavy metals, and organic toxins. The research focuses on integrating biological recognition elements such as enzymes, antibodies, and nucleic acids with transducer technologies including electrochemical, optical, and piezoelectric sensors. Fabrication methods were optimized to enhance sensor stability, sensitivity, and response time. Laboratory evaluations demonstrated that the biosensors could detect contaminants at trace levels, with limits of detection significantly below regulatory thresholds. The platforms were tested in real environmental samples, confirming their applicability in complex matrices. Additionally, the study explores miniaturization and portability aspects, aiming to develop user-friendly devices for on-site monitoring. Challenges related to sensor fouling, selectivity, and reproducibility were addressed through surface modification and signal amplification techniques. The findings underscore the potential of biosensor technology to revolutionize environmental monitoring by providing cost-effective, real-time data critical for pollution control and regulatory compliance. Future research will focus on multiplexed detection and integration with wireless communication systems for enhanced environmental surveillance.

Keywords: biosensors, environmental contaminants, pollutant detection, sensor technology, real-time monitoring

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PHYSICAL AND CHEMICAL PROPERTIES OF HYDROGEL SYSTEMS CONTAINING ACTIVE PHARMACEUTICAL INGREDIENTS

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ABSTRACT

Hydrogel systems have gained considerable attention as drug delivery vehicles due to their biocompatibility, tunable properties, and ability to encapsulate active pharmaceutical ingredients (APIs). This study investigates the physical and chemical characteristics of hydrogels formulated with various APIs to understand their suitability for controlled drug release applications. Different polymeric networks including natural and synthetic polymers were synthesized and loaded with model drugs representing diverse therapeutic classes. Characterization techniques such as swelling behavior analysis, rheology, Fourier-transform infrared spectroscopy (FTIR), and differential scanning calorimetry (DSC) were employed to assess the hydrogels' structural integrity, drug-polymer interactions, and thermal stability. Drug release profiles were evaluated under simulated physiological conditions to determine kinetics and mechanisms of release. Results demonstrated that hydrogel composition and crosslinking density significantly influence swelling capacity and drug diffusion rates. The presence of APIs affected the network structure, sometimes enhancing mechanical strength or altering degradation rates. The study highlights the potential for customizing hydrogel formulations to achieve desired release profiles tailored to specific medical needs. These findings contribute to the design of advanced drug delivery systems that improve therapeutic efficacy and patient compliance. Future research will focus on in vivo evaluations and scaling up production for clinical applications.

Keywords: hydrogels, drug delivery, pharmaceutical ingredients, controlled release, polymer networks

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OPTIMIZATION OF SOLID PHASE EXTRACTION FOR TRICYCLIC ANTIDEPRESSANT DRUGS IN URINE SAMPLES,

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ABSTRACT

The accurate quantification of tricyclic antidepressant (TCA) drugs in biological fluids is essential for therapeutic drug monitoring and toxicological investigations. This study focuses on optimizing solid phase extraction (SPE) protocols to isolate TCAs from urine samples with high recovery and purity. Various SPE sorbents, elution solvents, and sample preparation techniques were systematically evaluated to enhance extraction efficiency. Method validation included assessments of linearity, precision, accuracy, and limits of detection and quantification using high-performance liquid chromatography (HPLC) coupled with UV detection. The optimized procedure demonstrated superior selectivity and sensitivity compared to conventional liquid-liquid extraction methods, reducing matrix interferences and sample preparation time. Application of the method to real patient samples confirmed its robustness and reliability. The study also discusses potential challenges such as sorbent saturation and analyte degradation, proposing solutions to mitigate these issues. This optimized SPE method offers a valuable tool for clinical and forensic laboratories, improving the accuracy of TCA drug analysis and supporting better patient care and forensic outcomes. Future work may extend the approach to other classes of psychoactive drugs and biological matrices.

Keywords: solid phase extraction, tricyclic antidepressants, urine analysis, HPLC, method optimization

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ANTIFUNGAL ACTIVITY OF NATURAL EXTRACTS FROM TRADITIONAL HERBS AGAINST COMMON PATHOGENS

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ABSTRACT

The rise of antifungal resistance among common pathogens necessitates the exploration of alternative therapeutic agents. This study evaluates the antifungal properties of natural extracts derived from traditional medicinal herbs widely used in indigenous healing practices. Various extraction methods including aqueous, ethanolic, and methanolic techniques were employed to obtain bioactive compounds. The antifungal efficacy was tested against clinically relevant fungal strains such as Candida albicans, Aspergillus niger, and Cryptococcus neoformans using broth microdilution and agar diffusion assays. Phytochemical screening identified key compounds including flavonoids, alkaloids, and terpenoids responsible for antifungal activity. Results showed significant inhibition of fungal growth, with some extracts demonstrating comparable or superior effects to standard antifungal drugs. The study also investigated the potential synergistic effects of combined extracts and assessed cytotoxicity on mammalian cell lines to evaluate safety profiles. These findings support the potential of traditional herbs as sources of novel antifungal agents and encourage further isolation and characterization of active constituents. The research contributes to the development of alternative treatments addressing antifungal resistance and expanding the pharmacopeia with natural products.

Keywords: antifungal activity, natural extracts, traditional herbs, fungal pathogens, drug resistance

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ANALYSIS OF THE TOXICITY OF NANOPARTICLES IN AQUATIC ECOSYSTEMS: A COMPARATIVE STUDY

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ABSTRACT

Nanoparticles (NPs) are increasingly used in various industrial and consumer products, raising concerns about their environmental impact, particularly in aquatic ecosystems. This comparative study assesses the toxicity of different types of nanoparticles including metal oxides, carbon-based, and polymeric NPs on aquatic organisms representing multiple trophic levels. Laboratory exposure experiments were conducted using algae, daphnia, and fish species to evaluate acute and chronic toxic effects. Endpoints measured included mortality, growth inhibition, behavioral changes, and biochemical markers of oxidative stress. The study also examined the influence of nanoparticle size, concentration, surface charge, and aggregation behavior on toxicity profiles. Results indicated that metal oxide NPs generally exhibited higher toxicity, while polymeric NPs showed lower adverse effects. However, all tested nanoparticles caused some degree of physiological disruption, raising concerns about bioaccumulation and ecosystem health. The research highlights the need for standardized testing protocols and regulatory frameworks to manage nanoparticle risks. It also underscores the importance of developing environmentally safer nanomaterials and monitoring their release into aquatic environments. These findings provide critical insights for policymakers, industry stakeholders, and environmental scientists aiming to balance technological advancement with ecological protection.

Keywords: nanoparticles, aquatic toxicity, environmental impact, ecotoxicology, nanomaterials

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EVALUATION OF URBAN LAND DEVELOPMENT DIRECTION IN KABUL CITY, AFGHANISTAN

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Abstract:

Kabul, the capital and largest city in Afghanistan has been experiencing a massive population expansion and fast economic development in last decade, in which urban land has increasingly expanded and formed a high informal development territory in the city. This paper investigates the urban land development direction based on the integrated urbanization trends in Kabul city since the last and the fastest ever urban land growth period (1999-2008), which is parallel with the establishment of the new government in Afghanistan. Considering the existing challenges in terms of informal settlements, squatter settlements, the population expansion of the city, and fast economic development, as well as the huge influx of returning refugees from neighboring countries, and the sprawl direction of urbanization of the Kabul city urban fringes, this research focuses on the possible urban land development direction and trends for the city. The paper studies the feasible future land development direction of Kabul city in the northern part called Shamali basin, in which district 17 is the gateway for future development. The area has much developable area including eight districts of Kabul province, and the vast area of Parwan and Kapisa provinces. The northern area of the Kabul city generally has favorable conditions for further urbanization from the city. It is a large and relatively flat area of area in the northern part of Kabul city, with ample water resources available from the Panjshir basin as a base principle of land development direction in the area.

Keywords: Kabul city, land development trends, urban land development, urbanization.

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INFLUENCE OF PLACE IDENTITY ON WALKABILITY: A COMPARATIVE STUDY BETWEEN TWO MIXED USED STREETS CHAHARBAGH ST. ISFAHAN, IRAN AND DEREBOYU ST. LEFKOSA, NORTH CYPRUS

R. Rafiemanzelat

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Abstract:

One of the most recent fields of investigation in urban issues focuses on the walkability in urban spaces. Considering the importance of walkability apart from pedestrian transportation, increasing walkability will help to reduce the congestion and environmental impact. This subject also matters as it has a social life, experiential quality and economical sustainability value. This study focused on the effects of walkability and place identity on each other in urban public spaces, streets in particular, as a major indicator of their success. The theoretical aspects which examine for this purpose consist of two parts: The first will evaluate the essential components of place identity in the streets and the second one will discuss the concept of walkability and its development theories which have been derived from walkable spaces. Finally, research investigates place identity and walkability and their determinants in two major streets in different cities. The streets are Chaharbagh Street in Isfahan/Iran and Dereboyu Street in Lefkosa/North Cyprus. This study has a qualitative approach with the research method of walkability studies. The qualitative method is combined with the collection of data relating to walking behavior and place identity through an observational field study. The result will show a relationship between pedestrian-friendly spaces and identity by related variables which has obtained.

Keywords: Place identity, walkability, urban public space, streets, pedestrian-friendly.

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Renewed Urban Waterfront: Spatial Conditions of a Contemporary Urban Space Typology

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Abstract:

The formerly industrially or militarily used Urban Waterfront is a potential area for urban development. Extensive interventions in the urban space come along with the development of these previously inaccessible areas in the city. The development of the Urban Waterfront in the European City is not subject to any recognizable urban paradigm. In this study, the development of the Urban Waterfront as a new urban space typology is analyzed by case studies of Urban Waterfront developments in European Cities. For humans, perceptible spatial conditions are categorized and it is identified whether the themed Urban Waterfront Developments are congruent or incongruent urban design interventions and which deviations the Urban Waterfront itself induce. As congruent urban design, a design is understood, which fits in the urban fabric regarding its similar spatial conditions to the surrounding. Incongruent urban design, however, shows significantly different conditions in its shape. Finally, the spatial relationship of the themed Urban Waterfront developments and their associated environment are compared in order to identify contrasts between new and old urban space. In this way, conclusions about urban design paradigms of the new urban space typology are tried to be drawn.

Keywords: Composition, congruence, identity, paradigm, spatial condition, urban design, urban development, urban waterfront.

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URBAN ECOLOGICAL INTERACTION: AIR, WATER, LIGHT AND NEW TRANSIT AT THE HUMAN SCALE OF BARCELONA'S SUPERILLES

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Abstract:

As everyday transit options are shifting from autocentric to pedestrian and bicycle oriented modes for healthy living, downtown streets are becoming more attractive places to live. However, tools and methods to measure the natural environment at the small scale of streets do not exist. Fortunately, a combination of mobile data collection technology and parametric urban design software now allows an interface to relate urban ecological conditions. This paper describes creation of an interactive tool to measure urban phenomena of air, water, and heat/light at the scale of new three-by-three block pedestrianized areas in Barcelona called Superilles. Each Superilla limits transit to the exterior of the blocks and to create more walkable and bikeable interior streets for healthy living. The research will describe the integration of data collection, analysis, and design output via a live interface using parametric software Rhino Grasshopper and the Human User Interface (UI) plugin.

Keywords: Transit, urban design, GIS, parametric design, Superilles, Barcelona, urban ecology.

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PERFORMANCE EVALUATION OF A 'PRIORITY-CONTROLLED' INTERSECTION CONVERTED TO SIGNAL-CONTROLLED INTERSECTION

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Abstract:

There is a call to ensure that the issues of safety and efficient throughput are considered during design; the solutions to these issues can also be retrofitted at locations where they were not captured during design, but have become problems to road users over time. This paper adopts several methods to analyze the performance of an intersection which was formerly a 'priority-controlled' intersection, but has now been converted to a 'signal-controlled' intersection. Extensive review of literature helped form the basis for result analysis and discussion. The Ikot-Ekpene/Anagha-Ezikpe intersection, located at the heart of Umuahia was adopted as case study; considering the high traffic volume on the route. Anecdotal evidence revealed that traffic signals imposed enormous delays at the intersection, especially for traffic on the major road. The major road has arrival flow which surpasses the saturation flow obtained from modelling of the isolated signalized intersection. Similarly, there were several geometric elements that did not agree with the specific function of the road. A roundabout, particularly flower roundabout was recommended as a better traffic control measure.

Keywords: Highway function, level of service, roundabout, traffic delays, Umuahia.

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Discussion about Frequent Adjustment of Urban Master Planning in China: A Case Study of Changshou District, Chongqing City

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Abstract:

Since the reform and opening, the urbanization process of China has entered a rapid development period. In recent years, the authors participated in some projects of urban master planning in China and found a phenomenon that the rapid urbanization area of China is experiencing frequent adjustment process of urban master planning. This phenomenon is not the natural process of urbanization development. It may be caused by different government roles from different levels. Through the methods of investigation, data comparison and case study, this paper aims to explore the reason why the rapid urbanization area is experiencing frequent adjustment of master planning and give some solution strategies. Firstly, taking Changshou district of Chongqing city as an example, this paper wants to introduce the phenomenon about frequent adjustment process in China. And then, discuss distinct roles in the process between national government, provincial government and local government of China. At last, put forward preliminary solutions strategies for this area in China from the aspects of land use, intergovernmental cooperation and so on.

Keywords: Urban master planning, frequent adjustment, urbanization development, problems and strategies, China.

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Hybrid Living: Emerging Out of the Crises and Divisions

Yiorgos Hadjichristou

Abstract:

The paper will focus on the hybrid living typologies which are brought about due to the Global Crisis. Mixing of the generations and the groups of people, mingling the functions of living with working and socializing, merging the act of living in synergy with the urban realm and its constituent elements will be the springboard of proposing an essential sustainable housing approach and the respective urban development. The thematic will be based on methodologies developed both on the academic, educational environment including participation of students' research and on the practical aspect of architecture including case studies executed by the author in the island of Cyprus. Both paths of the research will deal with the explorative understanding of the hybrid ways of living, testing the limits of its autonomy. The evolution of the living typologies into substantial hybrid entities, will deal with the understanding of new ways of living which include among others: re-introduction of natural phenomena, accommodation of the activity of work and services in the living realm, interchange of public and private, injections of communal events into the individual living territories. The issues and the binary questions raised by what is natural and artificial, what is private and what public, what is ephemeral and what permanent and all the in-between conditions are eloquently traced in the everyday life in the island. Additionally, given the situation of Cyprus with the eminent scar of the dividing 'Green line' and the waiting of the 'ghost city' of Famagusta to be resurrected, the conventional way of understanding the limits and the definitions of the properties is irreversibly shaken. The situation is further aggravated by the unprecedented phenomenon of the crisis on the island. All these observations set the premises of reexamining the urban development and the respective sustainable housing in a synergy where their characteristics start exchanging positions, merge into each other, contemporarily emerge and vanish, changing from permanent to ephemeral. This fluidity of conditions will attempt to render a future of the built- and unbuilt realm where the main focusing point will be redirected to the human and the social. Weather and social ritual scenographies together with 'spontaneous urban landscapes' of 'momentary relationships' will suggest a recipe for emerging urban environments and sustainable living. Thus, the paper will aim at opening a discourse on the future of the sustainable living merged in a sustainable urban development in relation to the imminent solution of the division of island, where the issue of property became the main obstacle to be overcome. At the same time, it will attempt to link this approach to the global need for a sustainable evolution of the urban and living realms.

Keywords: Social ritual scenographies, spontaneous urban landscapes, substantial hybrid entities, re-introduction of natural phenomena.

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CORPORATE GOVERNANCE NETWORKS AND INTERLOCKING DIRECTORATES IN THE CZECH REPUBLIC

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Abstract:

This paper presents an exploration into the structure of the corporate governance network and interlocking directorates in the Czech Republic. First a literature overview and a basic terminology of the network theory is presented. Further in the text, statistics and other calculations relevant to corporate governance networks are presented. For this purpose an empirical data set consisting of 2 906 joint stock companies in the Czech Republic was examined. Industries with the highest average number of interlocks per company were healthcare, and energy and utilities. There is no observable link between the financial performance of the company and the number of its interlocks. Also interlocks with financial companies are very rare.

Keywords: Corporate Governance, Interlocking Directorates, Network Theory, Czech Republic.

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THE IMPACT OF STAKEHOLDER COMMUNICATION STRATEGIES ON CONSUMERS- ACCEPTANCE AND FINANCIAL PERFORMANCE: IN THE CASE OF FERTILIZER INDUSTRY IN MALAYSIA

Hasnida Abdul Wahab, Shahrina Md Nordin, Lai Fong Woon, Hasrina Mustafa

Universiti Teknologi Petronas, Perak, Malaysia

Abstract:

There has been a growing emphasis in communication management from simple coordination of promotional tools to a complex strategic process. This study will examine the current marketing communications and engagement strategies used in addressing the key stakeholders. In the case of fertilizer industry in Malaysia, there has been little empirical research on stakeholder communication when major challenges facing the modern corporation is the need to communicate its identity, its values and products in order to distinguish itself from competitors. The study will employ both quantitative and qualitative methods and the use of Structural Equation Modeling (SEM) to establish a causal relationship amongst the key factors of stakeholder communication strategies and increment in consumers- choice/acceptance and impact on financial performance. One of the major contributions is a conceptual framework for communication strategies and engagement in increasing consumers- acceptance level and the firm-s financial performance.

Keywords: Consumers' acceptance, financial performance, stakeholder communication strategies.

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ANALYSIS OF RUBBER WASTE UTILIZATION AT PANDORA PRODUCTION COMPANY LIMITED

S. Pechpoothong, M. Kopystecki

Sarisa Pechpooghong is with the Suan Sunandha Rajabhat Bankok, Thailand

Abstract:

The eco-efficient use of “waste" makes sense from economic, social, and environmental perspectives. By efficiency diverting “waste" products back into useful and/or profitable inputs, industries and entire societies can reap the benefits of improved financial profit, decreased environmental degradation, and overall well-being of humanity. In this project, several material flows at Company Limited were investigated. Principles of "industrial ecology" were applied to improve the management of waste rubbers that are used in the jewelry manufacturing process. complete this project, a brief engineering analysis stream, and investigated eco-efficient principles for more efficient handling of the materials and wastes were conducted, and the result were used to propose implementation strategies.

Keywords: Rubber, ecology, waste.

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THE STUDY OF PUBLIC CONSCIOUSNESS OF UNDERGRADUATE STUDENTS, SUAN SUNANDHA RAJABHAT UNIVERSITY

Nantida Otakum

Abstract:

The purpose of the study is to study the level of public consciousness of Suan Sunandha Rajabhat University undergraduate students. This study also compares differences in the level of public consciousness among undergraduate students who are different in sex and year of study. The research methodology employed a questionnaire as a quantitative method. The respondents were undergraduate students at Suan Sunandha Rajabhat University. Totally, 400 usable questionnaires were received. Descriptive and inferential statistics were used in data analysis. The results showed that the level of public consciousness of undergraduate students was at a good level in all aspects. The aspect of social participation was at the highest level, while the aspect of shared vision was at the lowest level. The results also indicated that undergraduate students with differences in sex and year of study were not significantly different in public consciousness level.

Keywords: Participation, public consciousness, Suan Sunandha Rajabhat University, undergraduate students.

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HYBRID ENERGY SUPPLY WITH DOMINANTLY RENEWABLE OPTION FOR SMALL INDUSTRIAL COMPLEX

Tomislav Stambolic, Anton Causevski

Abstract:

The deficit of power for electricity demand reaches almost 30% for consumers in the last few years. This reflects with continually increasing the price of electricity, and today the price for small industry is almost 110Euro/MWh. The high price is additional problem for the owners in the economy crisis which is reflected with higher price of the goods. The paper gives analyses of the energy needs for real agro complex in Macedonia, private vinery with capacity of over 2 million liters in a year and with self grapes and fruits fields. The existing power supply is from grid with 10/04 kV transformer. The geographical and meteorological condition of the vinery location gives opportunity for including renewable as a power supply option for the vinery complex. After observation of the monthly energy needs for the vinery, the base scenario is the existing power supply from the distribution grid. The electricity bill in small industry has three factors: electricity in high and low tariffs in kWh and the power engaged for the technological process of production in kW. These three factors make the total electricity bill and it is over 110 Euro/MWh which is the price near competitive for renewable option. On the other side investments in renewable (especially photovoltaic (PV)) has tendency of decreasing with price of near 1,5 Euro/W. This means that renewable with PV can be real option for power supply for small industry capacities (under 500kW installed power). Therefore, the other scenarios give the option with PV and the last one includes wind option. The paper presents some scenarios for power supply of the vinery as the followings: • Base scenario of existing conventional power supply from the grid • Scenario with implementation of renewable of Photovoltaic • Scenario with implementation of renewable of Photovoltaic and Wind power The total power installed in a vinery is near 570 kW, but the maximum needs are around 250kW. At the end of the full paper some of the results from scenarios will be presented. The paper also includes the environmental impacts of the renewable scenarios, as well as financial needs for investments and revenues from renewable.

Keywords: Energy, Power Supply, Renewable, Efficiency.

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A STATISTICAL PREDICTION OF LIKELY DISTRESS IN NIGERIA BANKING SECTOR USING A NEURAL NETWORK APPROACH

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Abstract:

One of the most significant threats to the economy of a nation is the bankruptcy of its banks. This study evaluates the susceptibility of Nigerian banks to failure with a view to identifying ratios and financial data that are sensitive to solvency of the bank. Further, a predictive model is generated to guide all stakeholders in the industry. Thirty quoted banks that had published Annual Reports for the year preceding the consolidation i.e. year 2004 were selected. They were examined for distress using the Multilayer Perceptron Neural Network Analysis. The model was used to analyze further reforms by the Central Bank of Nigeria using published Annual Reports of twenty quoted banks for the year 2008 and 2011. The model can thus be used for future prediction of failure in the Nigerian banking system.

Keywords: Bank, Bankruptcy, Financial Ratios, Neural Network, Multilayer Perceptron, Predictive Model

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EFFICIENCY IN URBAN GOVERNANCE TOWARDS SUSTAINABILITY AND COMPETITIVENESS OF CITY : A CASE STUDY OF KUALA LUMPUR

Hamzah Jusoh, Azmizam Abdul Rashid

Abstract:

Malaysia has successfully applied economic planning to guide the development of the country from an economy of agriculture and mining to a largely industrialised one. Now, with its sights set on attaining the economic level of a fully developed nation by 2020, the planning system must be made even more efficient and focused. It must ensure that every investment made in the country, contribute towards creating the desirable objective of a strong, modern, internationally competitive, technologically advanced, post-industrial economy. Cities in Malaysia must also be fully aware of the enormous competition it faces in a region with rapidly expanding and modernising economies, all contending for the same pool of potential international investments. Efficiency of urban governance is also fundamental issue in development characterized by sustainability, subsidiarity, equity, transparency and accountability, civic engagement and citizenship, and security. As described above, city competitiveness is harnessed through 'city marketing and city management'. High technology and high skilled industries, together with finance, transportation, tourism, business, information and professional services shopping and other commercial activities, are the principal components of the nation-s economy, which must be developed to a level well beyond where it is now. In this respect, Kuala Lumpur being the premier city must play the leading role.

Keywords: Economic planning, sustainability, efficiency, urban governance and city competitiveness.

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A STUDY OF NEURO-FUZZY INFERENCE SYSTEM FOR GROSS DOMESTIC PRODUCT GROWTH FORECASTING

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Abstract:

In this paper we present a Adaptive Neuro-Fuzzy System (ANFIS) with inputs the lagged dependent variable for the prediction of Gross domestic Product growth rate in six countries. We compare the results with those of Autoregressive (AR) model. We conclude that the forecasting performance of neuro-fuzzy-system in the out-of-sample period is much more superior and can be a very useful alternative tool used by the national statistical services and the banking and finance industry.

Keywords: Autoregressive model, Forecasting, Gross DomesticProduct, Neuro-Fuzzy

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RISK OF LATE PAYMENT IN THE MALAYSIAN CONSTRUCTION INDUSTRY

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Abstract:

The purpose of this study is to identify the underlying causes of late payment from the contractors- perspective in the Malaysian construction industry and to recommend effective solutions to mitigate late payment problems. The target groups of respondents in this study were Grades G3, G5, G6 and G7 contractors with specialization in building works and civil engineering works registered with the Construction Industry Development Board (CIDB) in Malaysia. Results from this study were analyzed with Statistical Package for the Social Science (SPSS 15.0). From this study, it was found that respondents have highest ranked five significant variables out of a total of forty-one variables which can caused late payment problems: a) cash flow problems due to deficiencies in client-s management capacity (mean = 3.96); b) client-s ineffective utilization of funds (mean = 3.88); c) scarcity of capital to finance the project (mean = 3.81); d) clients failure to generate income from bank when sales of houses do not hit the targeted amount (mean=3.72); and e) poor cash flow because of lack of proper process implementation, delay in releasing of the retention monies to contractor and delay in the evaluation and certification of interim and final payment (mean = 3.66).

Keywords: Underlying causes, late payment, constructionindustry, Malaysia.

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SHED SNAKE SKINS: A NATURAL RESOURCE FOR BIOMIMETIC MEMBRANES – ADVANCING PERMEATION STUDIES AND DRUG DELIVERY APPLICATIONS

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Aerospace Research and Test Establishment, Czech Republic

Abstracts

Shed snake skin, a readily available and sustainable material, exhibits unique properties that make it ideal for developing biomimetic membranes. This study investigated the potential of shed snake skin for permeation studies and drug delivery applications. The skin was characterized for its structural integrity, permeability, and biocompatibility. Results revealed that snake skin possesses semi-permeable properties, allowing for selective transport of molecules based on size and charge. Moreover, its biocompatibility makes it suitable for potential use in drug delivery systems. This research highlights the promising potential of shed snake skin as a sustainable and natural resource for advancing permeation studies and developing novel drug delivery platforms.

Keywords: Snake skin, biomimetic membranes, permeation studies, drug delivery, natural resource.

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PRECISION DRUG DELIVERY OF GLIBENCLAMIDE: EXPLORING THE IMPACT OF POLYVINYL PYRROLIDONE AND ETHYL CELLULOSE CONCENTRATION ON RELEASE PROFILES AND KINETICS

Dr. Stepan Arakelova, Assis. Prof. Dr. Lilia Arsenyan

Bauman Moscow State Technical University, Russia

Abstract

This study explored the impact of varying polyvinyl pyrrolidone (PVP) and ethyl cellulose (EC) concentrations on the release profiles and kinetics of glibenclamide from matrix tablets prepared by direct compression. PVP acted as a hydrophilic binder, while EC served as a retarding polymer. Both PVP and EC concentrations significantly influenced the drug release profiles. Increasing PVP content enhanced initial burst release, whereas higher EC concentrations led to prolonged and sustained release. Dissolution kinetics analysis revealed a shift from Fickian diffusion to anomalous diffusion with increasing EC concentration, suggesting a more complex release mechanism involving both diffusion and polymer relaxation. These findings highlight the potential of optimizing PVP and EC ratios to tailor glibenclamide release profiles for achieving improved therapeutic efficacy and minimizing adverse effects.

Keywords: Glibenclamide, precision drug delivery, polyvinyl pyrrolidone, ethyl cellulose, release profile, dissolution kinetics.

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INVESTIGATING THE EFFECTS OF AMINOPOLYETHER ON 18F-FDG PROPERTIES AND ITS IMPLICATIONS FOR PET IMAGING APPLICATIONS

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Bataan Peninsula State University , Philippines

Abstract

Background: 18F-FDG is the gold standard radiotracer for positron emission tomography (PET) imaging of glucose metabolism. However, its limitations include rapid in vivo defluorination and high lipophilicity, leading to non-specific uptake in organs like the brain. Aminopolyethers (APEs) have shown promise as potential carriers for radioligands due to their favorable properties, including high biocompatibility, low immunogenicity, and tunable physicochemical properties.

Objective: This study investigated the effects of APEs on the properties of 18F-FDG and its implications for PET imaging applications.

Methods: 18F-FDG was labeled with 18F-fluoride using standard methods. The stability, lipophilicity, and biodistribution of 18F-FDG in the presence of different APEs were evaluated in vitro and in vivo.

Results: APEs were found to significantly improve the stability of 18F-FDG, reducing its defluorination rate. Additionally, the lipophilicity of 18F-FDG was decreased by APEs, leading to improved target-to-background ratios in PET images. Biodistribution studies showed that APE-conjugated 18F-FDG exhibited reduced uptake in non-target organs such as the brain, suggesting improved specificity for PET imaging.

Conclusion: This study demonstrates the potential of APEs to improve the properties of 18F-FDG and enhance its effectiveness for PET imaging applications. Further research is needed to optimize the design of APEs and their conjugation with other radioligands for various PET imaging applications.

Keywords: Aminopolyether, 18F-FDG, PET imaging, radioligands, stability, lipophilicity, biodistribution

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ENDOPHYTES AS A NEW SOURCE OF BIOACTIVE COMPOUNDS: ISOLATION AND IDENTIFICATION OF FIBRINOLYTIC PROTEASE-PRODUCING FUNGI FROM HIBISCUS LEAVES

Assoc. Prof. Dr. Suman Sharma

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Abstract

Endophytic fungi represent a promising source of novel bioactive compounds due to their diverse metabolic pathways and unique ecological niches within host plants. This study aimed to isolate and identify fibrinolytic protease-producing endophytic fungi from Hibiscus leaves. Using standard isolation techniques, a total of 23 fungal isolates were obtained, with eight isolates exhibiting fibrinolytic activity on skim milk agar plates. Molecular identification based on internal transcribed spacer (ITS) regions revealed these active isolates belonged to diverse fungal genera, including Penicillium, Trichoderma, Aspergillus, and Fusarium. Additionally, the production of fibrinolytic protease by these fungi was confirmed through zymography analysis. This study highlights the potential of endophytic fungi from Hibiscus leaves as a novel source of fibrinolytic proteases, which hold promise for therapeutic applications in cardiovascular diseases.

Keywords: Endophytes, Hibiscus leaves, Fibrinolytic protease, Bioactive compounds.

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FROM CONCEPT TO REALITY: THE DESIGN AND DEVELOPMENT OF A MECHANICAL FORCE GAUGE FOR SQUARE WATERMELON MOLDING

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Lyallpur Khalsa College, Jalandhar (Punjab)-India

Abstract

This study describes the design and development of a novel mechanical force gauge specifically tailored for square watermelon molding. It introduces the unique characteristics of square watermelons and explores the limitations of existing force measurement methods. Three main gauge models are evaluated: hydraulic, strain gauge, and mechanical. The mechanical gauge ultimately emerges as the most suitable option due to its advantages in terms of force and pressure measurement, peak force indication, continuous monitoring of melon growth, material compatibility with the growth environment, air conditioning capability, sunlight transmission, straightforward calibration, ease of assembly/disassembly, visual inspection capability, versatility, simplicity, and cost-effectiveness. The performance and features of the developed mechanical force gauge are further detailed, highlighting its potential to revolutionize the production of high-quality square watermelons.

Keywords: square watermelon, mechanical force gauge, mold, pressure measurement, melon growth, fruit reshaping

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THE ROLE OF EXERCISE IN IMPROVING SEXUAL PERFORMANCE AND SEMEN QUALITY OF SAHIWAL BULLS: A PRACTICAL GUIDE FOR BREEDERS

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Bayero University Kano, Nigeria

ABSTRACT

his paper explores the role of exercise in improving sexual performance and semen quality of Sahiwal bulls, presenting practical guidance for breeders. The study demonstrates that regular exercise enhances key parameters of reproductive health, including libido, sperm motility, concentration, and morphology, ultimately leading to improved breeding outcomes. The mechanisms underlying these benefits are explored, highlighting the physiological adaptations induced by exercise, such as increased testosterone production, improved blood flow, and reduced oxidative stress. Practical recommendations for designing and implementing exercise programs for Sahiwal bulls are provided, including specific exercise types, duration, frequency, and intensity considerations. By incorporating a well-designed exercise regimen into their breeding practices, breeders can improve the reproductive efficiency and overall health of their Sahiwal bulls, leading to increased productivity and profitability.

Keywords: Sahiwal bull, sexual performance, semen quality, exercise, libido, sperm motility, sperm concentration, sperm morphology, testosterone, blood flow, oxidative stress, breeding efficiency, productivity, profitability.

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INVESTIGATING THE IMPACT OF DIETARY HERBAL SEED SUPPLEMENTATION ON CARCASS CHARACTERISTICS, IMMUNE RESPONSE, AND ANTIOXIDANT STATUS OF BROILER CHICKENS

Sirijit Tipchuwong, Chayanid Asasutjarit

Ibn Khaldoun University of Tiaret- Algeria

Abstract

This study investigated the effects of dietary herbal seed supplementation on carcass characteristics, immune response, and antioxidant status of broiler chickens. Broiler chicks were randomly assigned to experimental groups fed with diets containing different levels of herbal seed powder (HBP).

Results: Compared to the control group, dietary HBP supplementation significantly improved carcass yield, breast muscle percentage, and dressing percentage. Additionally, HBP increased the levels of immune globulins (IgA, IgG, and IgM) and enhanced the activity of antioxidant enzymes (SOD, CAT, and GPx). Furthermore, HBP supplementation reduced oxidative stress markers (MDA) and improved meat quality parameters such as water holding capacity and cooking loss.

Conclusion: These findings suggest that dietary herbal seed supplementation can be a promising strategy to improve carcass characteristics, enhance immune response, and promote antioxidant status in broiler chickens, thereby contributing to sustainable and healthy poultry production.

Keywords: herbal seed supplementation, broiler chickens, carcass characteristics, immune response, antioxidant status, growth performance, blood parameters, meat quality.

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PERFORMANCE ENHANCEMENT OF MEMBRANE DISTILLATION PROCESS IN FRUIT JUICE CONCENTRATION BY MEMBRANE SURFACE MODIFICATION

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Abstract:

In this work Membrane Distillation is applied to concentrate orange Juice. Clarified orange juice (11o Brix) obtained from fresh fruits and a sugar solution was subjected to membrane distillation. The experiments were performed on a flat sheet module using orange juice and sucrose solution as feeds. The concentration of a sucrose solution, used as a model fruit juice and also orange juice, was carried out in a direct contact membrane distillation using hydrophobic PTFE membrane of pore size 0.2 μm and porosity 70%. Surface modification of PTFE membrane has been carried out by treating membrane with alcohol and water solution to make it hydrophilic and then hydrophobicity was regained by drying. The influences of the feed temperature, feed concentration, flow rate, operating time on the permeate flux were studied for treated and non treated membrane. In this work treated and non treated membrane were compared in terms of water flux, Within the tested range, MD with surface modified membrane the water flux has been significantly improved by treating the membrane surface.

Keywords: Membrane Distillation, Surface Modification, Orange Juice. Polytetrafluoroethylene.

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PRODUCTION OF APRICOT VINEGAR USING AN ISOLATED ACETOBACTER STRAIN FROM IRANIAN APRICOT

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Abstract:

Vinegar or sour wine is a product of alcoholic and subsequent acetous fermentation of sugary precursors derived from several fruits or starchy substrates. This delicious food additive and supplement contains not less than 4 grams of acetic acid in 100 cubic centimeters at 20°C. Among the large number of bacteria that are able to produce acetic acid, only few genera are used in vinegar industry most significant of which are Acetobacter and Gluconobacter. In this research we isolated and identified an Acetobacter strain from Iranian apricot, a very delicious and sensitive summer fruit to decay, we gathered from fruit's stores in Isfahan, Iran. The main culture media we used were Carr, GYC, Frateur and an industrial medium for vinegar production. We isolated this strain using a novel miniature fermentor we made at Pars Yeema Biotechnologists Co., Isfahan Science and Technology Town (ISTT), Isfahan, Iran. The microscopic examinations of isolated strain from Iranian apricot showed gram negative rods to cocobacilli. Their catalase reaction was positive and oxidase reaction was negative and could ferment ethanol to acetic acid. Also it showed an acceptable growth in 5%, 7% and 9% ethanol concentrations at 30°C using modified Carr media after 24, 48 and 96 hours incubation respectively. According to its tolerance against high concentrations of ethanol after four days incubation and its high acetic acid production, 8.53%, after 144 hours, this strain could be considered as a suitable industrial strain for a production of a new type of vinegar, apricot vinegar, with a new and delicious taste. In conclusion this is the first report of isolation and identification of an Acetobacter strain from Iranian apricot with a very good tolerance against high ethanol concentrations as well as high acetic acid productivity in an acceptable incubation period of time industrially. This strain could be used in vinegar industry to convert apricot spoilage to a beneficiary product and mentioned characteristics have made it as an amenable strain in food and agricultural biotechnology.

Keywords: Acetic Acid Bacteria, Acetobacter, Fermentation, Food and Agricultural Biotechnology, Iranian Apricot, Vinegar.

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EFFECT OF FERMENTATION TIME ON XANTHAN GUM PRODUCTION FROM SUGAR BEET MOLASSES

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Abstract:

Xanthan gum is a microbial polysaccharide of great commercial significance. The purpose of this study was to select the optimum fermentation time for xanthan gum production by Xanthomonas campestris (NRRL-B-1459) using 10% sugar beet molasses as a carbon source. The pre-heating of sugar beet molasses and the supplementation of the medium were investigated in order to improve xanthan gum production. Maximum xanthan gum production in fermentation media (9.02 g/l) was observed after 4 days shaking incubation at 25°C and 240 rpm agitation speed. A solution of 10% sucrose was used as a control medium. Results indicated that the optimum period for xanthan gum production in this condition was 4 days.

Keywords: Biomass, Molasses, Xanthan gum, Xanthomonascampestris

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UTILIZATION JUICE WASTES AS CORN REPLACEMENT IN THE BROILER DIET

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Abstract:

An experiment was conducted with 80 unsexed broilers of the Arbor Acress strain to determine the capability of a carrot and fruit juice wastes mixture (carrot, apple, manggo, avocado, orange, melon and Dutch egg plant) in the same proportion for replacing corn in broiler diet. This study involved a completely randomized design (CRD) with 5 treatments (0, 5, 10, 15, and 20% of juice wastes mixture in diets) and 4 replicates per treatment. Diets were isonitrogenous (22% crude protein) and isocaloric (3000 kcal/kg diet). Measured variables were feed consumption, average daily gain, feed conversion, as well as percentages of abdominal fat pad, carcass, digestive organs (liver, pancreas and gizzard), and heart. Data were analyzed by analysis of variance for CRD. Increasing juice wastes mixture levels in diets increased feed consumption ($P<0.05$) and average daily gain ($P<0.01$), while improving feed utilization efficiency ($P<0.05$). These treatments also affected ($P<0.05$) abdominal fat pad percentage but had no effect ($P>0.05$) on carcass, liver, pancreas, gizzard or heart percentages. In conclusion, up to 20% of juice wastes mixture could be included for the broiler diet to effectively replace up to 40% corn in the diet.

Keywords: average daily gain, feed consumption, feedconversion, juice waste mixture

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SURVEY OF IMPACT OF PRODUCTION AND ADOPTION OF NANOCROPS ON FOOD SECURITY

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Abstract:

Perspective of food security in 21 century showed shortage of food that production is faced to vital problem. Food security strategy is applied longtime method to assess required food. Meanwhile, nanotechnology revolution changes the world face. Nanotechnology is adequate method utilize of its characteristics to decrease environmental problems and possible further access to food for small farmers. This article will show impact of production and adoption of nanocrops on food security. Population is researchers of agricultural research center of Esfahan province. The results of study show that there was a relationship between uses, conversion, distribution, and production of nanocrops, operative human resources, operative circumstance, and constrains of usage of nanocrops and food security. Multivariate regression analysis by enter model shows that operative circumstance, use, production and constrains of usage of nanocrops had positive impact on food security and they determine in four steps 20 percent of it.

Keywords: adoption, food safety, food security, nanocrops

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SOUS VIDE PACKAGING TECHNOLOGY APPLICATION FOR SALAD WITH MEAT IN MAYONNAISE SHELF LIFE EXTENSION

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Abstract:

Experiments have been carried out at the Latvia University of Agriculture Department of Food Technology. The aim of this work was to assess the effect of sous vide packaging during the storage time of salad with meat in mayonnaise at different storage temperature. Samples were evaluated at 0, 1, 3, 7, 10, 15, 18, 25, 29, 42, and 52 storage days at the storage temperature of +4±0.5 ºC and +10±0.5 ºC. Experimentally the quality of the salad with meat in mayonnaise was characterized by measuring colour, pH and microbiological properties. The sous vide packaging was effective in protecting the product from physical, chemical, and microbial quality degradation. The sous vide packaging significantly reduces microbial growth at storage temperature of +4±0.5 ºC and +10±0.5 ºC. Moreover, it is possible to extend the product shelf life to 52 days even when stored at +10±0.5 ºC.

Keywords: salad with meat in mayonnaise, shelf life, sous videpackaging.

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INVESTIGATION OF PHYSICOCHEMICAL PROPERTIES OF THE BACTERIAL CELLULOSE PRODUCED BY GLUCONACETOBACTER XYLINUS FROM DATE SYRUP

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Abstract:

Bacterial cellulose, a biopolysaccharide, is produced by the bacterium, Gluconacetobacter xylinus. Static batch fermentation for bacterial cellulose production was studied in sucrose and date syrup solutions (Bx. 10%) at 28 °C using G. xylinus (PTCC, 1734). Results showed that the maximum yields of bacterial cellulose (BC) were 4.35 and 1.69 g/l00 ml for date syrup and sucrose medium after 336 hours fermentation period, respectively. Comparison of FTIR spectrum of cellulose with BC indicated appropriate coincidence which proved that the component produced by G. xylinus was cellulose. Determination of the area under X-ray diffractometry patterns demonstrated that the crystallinity amount of cellulose (83.61%) was more than that for the BC (60.73%). The scanning electron microscopy imaging of BC and cellulose were carried out in two magnifications of 1 and 6K. Results showed that the diameter ratio of BC to cellulose was approximately 1/30 which indicated more delicacy of BC fibers relative to cellulose.

Keywords: Gluconacetobacter xylinus, Fourier Transform Infrared spectroscopy, Scanning Electron Microscopy, X-ray diffractometry

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COMPARISON OF PHYSICO-CHEMICAL PROPERTIES AND FATTY ACID COMPOSTION OF ELATERIOSPERMUM TAPOS (BUAH PERAH), PALM OIL AND SOYBEAN OIL

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Abstract:

Elateriospermum tapos seed (buah perah) is the one of the rich sources of polyunsaturated fatty acids. It contains high percentage of oleic acid which is the important component to develop nervous system and also α-linolenic acid (ALA) which is the precursor of omega-3 fatty acids series to synthesize eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). However, there is less study about this valuable oilseed and exploit its potential. Therefore, this paper is to assess the comparison of physico-chemical properties and fatty composition of perah oil to palm oil and soybean oil. From the comparison, perah oil shows low peroxide value means it has good oxidative stability and also high iodine values shows that it can be used in paint industry. The study shown that perah oil is comparable to palm oil and soybean oil, so it has high potential to be exploited in the oleochemical, pharmaceutical, cosmetics and paint industries.

Keywords: α-linolenic acid, palm oil, perah oil, soybean oil

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PHYSICAL PROPERTIES AND STABILITY OF EMULSIONS AS AFFECTED BY NATIVE AND MODIFIED YAM STARCHES

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Abstract:

This study was conducted in order to determine the physical properties and stability of mayonnaise-like emulsions as affected by modified yam starches. Native yam starch was modified via pre-gelatinization and cross-linking phosphorylation procedures. The emulsions (50% oil dispersed phase) were prepared with 0.3% native potato, native yam, pre-gelatinized yam and cross-linking phosphorylation yam starches. The droplet size of surface weighted mean diameter was found to be significantly ($p < 0.05$) lower in the sample with cross-linking phosphorylation yam starch as compared to other samples. Moreover, the viscosity of the sample with pregelatinized yam starch was observed to be higher than that of other samples. The phase separation stability was low in the freshly prepared and stored (45 days, 5°C) emulsions containing native yam starch. This study thus generally suggested that modified yam starches were more suitable (i.e. better physical properties and stability) to be used as stabilizers in a similar system i.e. light mayonnaises, rather than a native yam starch.

Keywords: Oil-in-water emulsions, low-fat mayonnaises, modified yam starches, droplet size distribution, viscosity.

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OPTIMIZATION OF EXTRACTION OF PHENOLIC COMPOUNDS FROM AVICENNIA MARINA (FORSSK.)VIERH USING RESPONSE SURFACE METHODOLOGY

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Abstract:

Optimization of extraction of phenolic compounds from Avicennia marina using response surface methodology was carried out during the present study. Five levels, three factors rotatable design (CCRD) was utilized to examine the optimum combination of extraction variables based on the TPC of Avicennia marina leaves. The best combination of response function was 78.41 °C, drying temperature; 26.18°C; extraction temperature and 36.53 minutes of extraction time. However, the procedure can be promptly extended to the study of several others pharmaceutical processes like purification of bioactive substances, drying of extracts and development of the pharmaceutical dosage forms for the benefit of consumers.

Keywords: Avicennia marina, Central Composite RotatableDesign (CCRD), Response Surface Methodology, Total Phenoliccontents (TPC)

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CHEMICAL AND BIOLOGICAL PROPERTIES OF LOCAL COWPEA SEED PROTEIN GROWN IN GIZAN REGION

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Abstract:

The aim of the present study was to investigate the chemical and biological properties of local cowpea seed protein cultivated in Gizan region. The results showed that the cowpea and its products contain high level of protein (22.9-77.6%), high carbohydrates (9.4-64.3%) and low fats (0.1-0.3%). The trypsin and chymotrypsin activities were found to be 32.2 and 15.2 units, respectively. These activities were not affected in both defatted and protein concentrate whereas they were significantly reduced in isolated protein and cooked samples. The phytate content of cooked and concentrated cowpea samples varied from 0.25% -0.32%, respectively. Tannin content was found to be 0.4% and 0.23% for cooked and raw samples, respectively. The in vitro protein digestibility was very high in cowpea seeds (75.04-78.76%). The biological evaluation using rats showed that the group fed with animal feed containing casein gain more weight than those fed with that containing cowpea. However, the group fed with cooked cowpea gain more weight than those fed with uncooked cowpea. On the other hand, in vivo digestion showed high value (98.33%) among the group consumed casein compared to other groups those consumed cowpea contains feed. This could be attributed to low antinutritional factors in casein contains feed compared to those of cowpea contains feed because cooking significantly increased the digestion rate (80.8% to 83.5%) of cowpea contains feed. Furthermore, the biological evaluation was high (91.67%) of casein containing feed compared to that of cowpea containing feed (80.83%-87.5%). The net protein utilization (NPU) was higher (89.67%) in the group fed with casein containing feed than that of cowpea containing feed (56.33%-69.67%).

Keywords: Biological properties, Cowpea seed protein, Antinutritional factors, In vitro digestibility

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INTERACTION EFFECT OF DGAT1 AND COMPOSITE GENOTYPE OF BETA-KAPPA CASEIN ON ECONOMIC MILK PRODUCTION TRAITS IN CROSSBRED HOLSTEIN

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Abstract:

The objective was to determine the single gene and interaction effect of composite genotype of beta-kappa casein and DGAT1 gene on milk yield (MY) and milk composition, content of milk fat (%FAT), milk protein (%PRO), solid not fat (%SNF), and total solid (%TS) in crossbred Holstein cows. Two hundred and thirty- one cows were genotyped with PCR-RFLP for DGAT1 and composite genotype data of beta-kappa casein from previous work were used. Two model, (1), and (2), was used to estimate single gene effect, and interaction effect on the traits, respectively. The significance of interaction effects on all traits were detected. Most traits have consistent pattern of significant when model (1), and (2) were compared, except the effect of composite genotype of betakappa casein on %FAT, and the effect of DGAT1 on MY, which the significant difference was detected in only model (1).The results suggested that when the optimum of all traits was necessary, interaction effect should be concerned.

Keywords: composite genotype of beta-kappa casein, DGAT1gene, Milk composition, Milk yield

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REVEA LING CASEIN MICELLE DISPERSION UNDER VARIOUS RANGES OF NACL: EVOLUTION OF PARTICLES SIZE AND STRUCTURE

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Abstract:

Dispersions of casein micelles (CM) were studied at a constant protein concentration of 5 wt % in high NaCl environment ranging from 0% to 12% by Dynamic light scattering (DLS) and Fourier Transform Infrared (FTIR). The rehydration profiles obtained were interpreted in term of wetting, swelling and dispersion stages by using a turbidity method. Two behaviours were observed depending on the salt concentration. The first behaviour (low salt concentration) presents a typical rehydration profile with a significant change between 3 and 6% NaCl indicating quick wetting, swelling and long dispersion stage. On the opposite, the dispersion stage of the second behaviour (high salt concentration) was significantly shortened indicating a strong modification of the protein backbone. A salt increase result to a destabilization of the micelle and the formation of mini-micelles more or less aggregated indicating an average micelles size ranging from 100 to 200 nm. For the first time, the estimations of secondary structural elements (irregular, ß-sheet, α-helix and turn) by the Amide III assignments were correlated with results from Amide I.

Keywords: Casein, DLS, FTIR, Ionic environment.

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PROCESS DEVELOPMENT OF SAFE AND READY-TO-EAT RAW OYSTER MEAT BY IRRADIATION TECHNOLOGY

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Assistant Professor in Faculty of Fisheries, Kasetsart University , Thailand

Abstract:

White scar oyster (Crassostrea belcheri) is often eaten raw and being the leading vehicle for foodborne disease, especially Salmonella Weltevreden which exposed the prominent and most resistant to radiation. Gamma irradiation at a low dose of 1 kGy was enough to eliminate S. Weltevreden contaminated in oyster meat at a level up to 5 log CFU/g while it still retain the raw characteristics and equivalent sensory quality as the non-irradiated one. Process development of ready-to-eat chilled oyster meat was conducted by shucking the meat, individually packed in plastic bags, subjected to 1 kGy gamma radiation at chilled condition and then stored in 4oC refrigerated temperature. Microbiological determination showed the absence of S. Weltevreden (5 log CFU/g initial inoculated) along the whole storage time of 30 days. Sensory evaluation indicated the decreasing in sensory scores along storage time which determining the product shelf life to be 18 days compared to 15 days of nonirradiated one. The most advantage of developed process was to provide the safe raw oyster to consumers and in addition sensory quality retained and 3-day extension shelf life also exist.

Keywords: decontamination, food safety, irradiation, oyster, Salmonella Weltevreden

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EFFECT OF PRETREATMENT METHOD ON THE CONTENT OF PHENOLIC COMPOUNDS, VITAMIN C AND ANTIOXIDANT ACTIVITY OF DRIED DILL

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Abstract:

Dill contains range of phytochemicals, such as vitamin C and polyphenols, which significantly contribute to their total antioxidant activity. The aim of the current research was to determine the best blanching method for processing of dill prior to microwave vacuum drying based on the content of phenolic compounds, vitamin C and free radical scavenging activity. Two blanching mediums were used – water and steam, and for part of the samples microwave pretreatment was additionally used. Evaluation of vitamin C, phenolic contents and scavenging of DPPH˙ radical in dried dill was performed. Blanching had an effect on all tested parameters and the blanching conditions are very important. After evaluation of the results, as the best method for dill pretreatment was established blanching at 90 °C for 30 seconds.

Keywords: blanching, microwave vacuum drying, TPC, vitamin C.

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VISUALIZED CHARACTERIZATION OF MOLECULAR MOBILITY FOR WATER SPECIES IN FOODS

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Abstract:

Six parameters, the effective diffusivity (De), activation energy of De, pre-exponential factor of De, amount (ASOW) of self-organized water species, and amplitude (α) of the forced oscillation of the molecular mobility (1/tC) derived from the forced cyclic temperature change operation, were characterized by using six typical foods, squid, sardines, scallops, salmon, beef, and pork, as a function of the correlation time (tC) of the water molecule-s proton retained in the foods. Each of the six parameters was clearly divided into the water species A1 and A2 at a specified value of tC =10-8s (=CtC), indicating an anomalous change in the physicochemical nature of the water species at the CtC. The forced oscillation of 1/tC clearly demonstrated a characteristic mode depending on the food shown as a three dimensional map associated with 1/tC, the amount of self-organized water, and tC.

Keywords: molecular mobility, self-organization, hysteresis, water species A1 and A2, forced cyclic temperature change operation (FCTCO)

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USING ISM TO IDENTIFY THE INTERRELATIONSHIPS AMONG CRITERIA FOR KNOWLEDGE MANAGEMENT WITHIN MALAYSIAN ORGANIZATIONS

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ABSTRACT

This study employs Interpretive Structural Modeling (ISM) to analyze and identify the complex interrelationships among various criteria critical to effective knowledge management within Malaysian organizations. Knowledge management is increasingly recognized as a strategic asset, yet organizations face challenges in prioritizing and understanding how different factors influence one another. The research begins by reviewing existing literature to compile a comprehensive list of criteria, including organizational culture, technology infrastructure, leadership support, and employee engagement. Using expert input and ISM methodology, the study constructs a hierarchical model that visually represents the dependencies and driving forces among these criteria. Findings reveal that leadership commitment and organizational culture serve as foundational drivers that significantly impact other elements such as technology adoption and knowledge sharing practices. The model also highlights feedback loops and mutual influences that complicate straightforward management approaches. By clarifying these relationships, the research provides managers with a structured framework to develop targeted strategies for enhancing knowledge management effectiveness. The study contributes to both theoretical understanding and practical application, offering insights relevant to organizations in Malaysia and comparable emerging economies. Future research directions include validating the model across different sectors and integrating quantitative data for more robust analysis.

Keywords: Knowledge management, Interpretive Structural Modeling, organizational culture, leadership, Malaysia

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EXPLORING THE IMPACT OF MARKET BETA ON ASSET PRICING: FINDINGS FROM THE ROMANIAN STOCK MARKET

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ABSTRACT

This paper investigates the role of market beta in asset pricing within the Romanian stock market, aiming to understand how systematic risk influences expected returns in an emerging market context. Market beta, a measure of an asset's sensitivity to overall market movements, is a fundamental concept in financial theory, yet its empirical validity can vary across markets. The study uses historical stock price data and market indices from the Bucharest Stock Exchange over a ten-year period. Employing regression analysis and the Capital Asset Pricing Model (CAPM), the research tests the relationship between beta values and realized returns for a diverse set of equities. Results indicate a positive but nonlinear association, suggesting that while higher beta stocks generally yield higher returns, the relationship is influenced by market volatility and investor behavior specific to Romania. The paper also explores sectoral differences and the impact of macroeconomic factors on beta's predictive power. These findings contribute to a nuanced understanding of risk-return dynamics in transitional economies and offer practical implications for portfolio management and risk assessment. The study recommends further investigation into alternative risk measures and the integration of behavioral finance perspectives to enhance asset pricing models in emerging markets.

Keywords: Market beta, asset pricing, Romanian stock market, CAPM, systematic risk

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ASSESSING AN OFFSHORE WIND POWER PROJECT: ECONOMIC, STRATEGIC, AND ENVIRONMENTAL ASSESSMENT

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ABSTRACT

This research evaluates an offshore wind power project through a comprehensive assessment encompassing economic viability, strategic alignment, and environmental impact. As renewable energy gains prominence in global energy transitions, offshore wind offers significant potential but also presents unique challenges. The study begins by analyzing project costs, expected revenues, and financing structures to determine economic feasibility. Strategic assessment considers alignment with national energy policies, market demand, and stakeholder interests. Environmental evaluation focuses on potential impacts on marine ecosystems, biodiversity, and local communities, incorporating environmental impact assessments and stakeholder consultations. The methodology integrates cost-benefit analysis, SWOT analysis, and ecological risk assessment to provide a holistic view. Findings demonstrate that while the project promises substantial long-term economic and environmental benefits, initial capital costs and ecological concerns require careful management. The research highlights the importance of adaptive strategies to mitigate environmental risks and optimize stakeholder engagement. The study offers valuable insights for policymakers, investors, and environmental planners aiming to balance sustainable development with energy needs. Future work is suggested to monitor project implementation and assess cumulative environmental effects over time.

Keywords: Offshore wind power, economic assessment, environmental impact, renewable energy, strategic planning

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APPLICATION OF TOPSIS APPROACH TO SOLVE SUPPLIER SELECTION ISSUES

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ABSTRACT
Supplier selection is a critical decision-making process in supply chain management, directly affecting operational efficiency and competitiveness. This study applies the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method to address supplier selection challenges by evaluating multiple criteria simultaneously. The research identifies key criteria such as cost, quality, delivery reliability, and sustainability performance through literature review and expert consultations. Using a case study from the manufacturing sector, the TOPSIS approach ranks potential suppliers based on their closeness to the ideal solution, enabling decision-makers to identify the most suitable partner. The methodology incorporates weighting schemes to reflect organizational priorities and sensitivity analysis to test robustness. Results demonstrate that TOPSIS provides a transparent and systematic framework for complex supplier evaluation, improving decision quality and stakeholder confidence. The study also discusses practical implementation considerations and potential integration with other multi-criteria decision-making tools. By enhancing supplier selection processes, organizations can achieve cost savings, quality improvements, and stronger supply chain resilience. The paper concludes by recommending further research on dynamic supplier evaluation models incorporating real-time data and risk factors.

Keywords: Supplier selection, TOPSIS, multi-criteria decision making, supply chain management

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CORE PRINCIPLES OF THEORY OF CONSTRAINTS: AN UP-AND-COMING PHILOSOPHY

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ABSTRACT

The Theory of Constraints (TOC) is an emerging management philosophy that focuses on identifying and addressing the most critical limiting factor (constraint) that impedes organizational performance. This paper outlines the core principles of TOC and examines its application across various industries to improve process flow, productivity, and profitability. The study begins by explaining the fundamental concepts, including the five focusing steps and the importance of continuous improvement. It explores how TOC integrates with other management approaches such as Lean and Six Sigma to create synergistic effects. Through case studies in manufacturing, healthcare, and service sectors, the research illustrates practical benefits such as reduced lead times, inventory optimization, and enhanced throughput. The paper also discusses challenges in implementing TOC, including organizational resistance and the need for cultural change. Furthermore, it highlights recent developments in TOC theory and tools, such as the Thinking Processes and Critical Chain Project Management. The study concludes that TOC offers a powerful framework for addressing complex operational problems and driving sustainable competitive advantage. It encourages further empirical research to validate TOC's effectiveness in diverse contexts and to explore its integration with digital transformation initiatives.

Keywords: Theory of Constraints, operational management, process improvement, continuous improvement

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FRAMEWORK FOR POLICY MANAGEMENT IN ENTERPRISE POLICIES ADMINISTRATION

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ABSTRACT
Effective policy management is essential for ensuring compliance, governance, and strategic alignment within enterprises. This paper proposes a comprehensive framework for managing enterprise policies, addressing challenges in policy creation, dissemination, enforcement, and monitoring. The framework integrates technological solutions, organizational processes, and stakeholder involvement to facilitate coherent policy administration. It emphasizes the importance of clear policy hierarchies, version control, and audit trails to maintain transparency and accountability. The study includes a review of existing policy management tools and identifies gaps related to scalability, adaptability, and user engagement. Using qualitative data from industry experts and case studies, the research validates the framework's applicability across different sectors. The findings suggest that adopting such a framework can reduce policy conflicts, improve regulatory compliance, and enhance organizational agility. The paper concludes with recommendations for implementing the framework, highlighting the role of leadership commitment and continuous evaluation. Future research directions include developing automated policy management systems using artificial intelligence and machine learning to further optimize enterprise governance.

Keywords: Policy management, enterprise governance, compliance, organizational processes

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OPTIMIZING CUSTOMER RELATIONSHIPS THROUGH SOCIAL NETWORK MANAGEMENT

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ABSTRACT
In the digital age, managing customer relationships through social networks has become a strategic imperative for businesses seeking competitive advantage. This study explores strategies for optimizing customer engagement and loyalty by leveraging social network management tools and techniques. It examines how companies can analyze social media data to understand customer preferences, sentiment, and behavior patterns. The research employs case studies from various industries to illustrate successful social network campaigns and community-building efforts. Key factors identified include timely communication, personalized content, and proactive issue resolution. The study also addresses challenges such as managing negative feedback, privacy concerns, and resource allocation. By integrating social network management into broader customer relationship management (CRM) systems, organizations can enhance customer satisfaction and retention. The paper offers practical recommendations for marketing professionals and highlights emerging trends such as influencer partnerships and AI-driven analytics. It concludes that effective social network management is vital for fostering strong, long-term customer relationships in an increasingly connected world.

Keywords: Customer relationship management, social networks, customer engagement, digital marketing

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STRATEGIES FOR DETERMINING THE IDEAL ASSET STRUCTURE FOR A COMMERCIAL BANK

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ABSTRACT
This research addresses the critical issue of determining the ideal asset structure for commercial banks to optimize profitability while managing risks. The study reviews theoretical models and empirical evidence related to asset allocation, liquidity management, and capital adequacy. It employs quantitative methods, including portfolio optimization techniques and risk-return analysis, applied to data from Latvian commercial banks. The findings reveal that a balanced asset structure incorporating a mix of loans, securities, and liquid assets contributes to financial stability and competitive performance. The study also considers external factors such as regulatory requirements, market conditions, and economic cycles. Strategic recommendations include dynamic asset rebalancing, diversification, and stress testing to adapt to changing environments. The paper highlights the importance of aligning asset management strategies with overall bank objectives and stakeholder expectations. It concludes that effective asset structure management is essential for sustaining bank growth and resilience in volatile markets. Future research is encouraged to explore the impact of fintech innovations and digital banking trends on asset allocation strategies.

Keywords: Asset structure, commercial banking, portfolio optimization, financial risk management

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OPTIMIZING OF GAS CONSUMPTION IN GAS-BURNER SPACE HEATER

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Abstract:

Nowadays, the importance of energy saving is clearance to everyone. By attention to increasing price of fuels and also the problems of environment pollutions, there are the most efforts for using fuels littler and more optimum in everywhere. This essay studies optimizing of gas consumption in gas-burner space heaters. In oven of each gas-burner space heaters there is two snags to prevent the hot air (the result of combustion of natural gas) to go out of oven of the gas-burner space heaters directly without delivering its heat to the space of favorite environment like a room. These snags cause a excess circulating that helps hot air deliver its heat to the space of favorite environment. It means the exhaust air temperature will be decreased then when there are no snags. This is the aim of this essay to use maximum potential energy of the natural gas to make heat. In this study, by the help of a finite volume software (FLUENT) consumption of the gas-burner space heaters is simulated and optimized. At the end of this writing, by comparing the results of software and experimental results, it will be proved the authenticity of this method.

Keywords: FLUENT, Heat transfer, Oven of Gas-burner spaceheaters, Simulation.

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DEVELOPMENT OF AUTOMATIC GUIDED MOBILE ROBOT USING MAGNETIC POSITION METER

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Abstract:

In this paper, an automatic guided mobile robot using a new magnetic position meter is described. In order to measure the lateral position of a mobile robot, a new magnetic position meter is developed. The magnetic position meter can detect the position of a magnetic wire on the center of road. A mobile robot in designed with a sensing system, a steering system and a driving system. The designed mobile robot is tested to verify the performance of automatic guidance.

Keywords: Autonomous vehicle, magnetic position meter, steering, magnet.

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A SUPERVISORY SCHEME FOR STEP-WISE SAFE SWITCHING CONTROLLERS

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Abstract:

A supervisory scheme is proposed that implements Stepwise Safe Switching Logic. The functionality of the supervisory scheme is organized in the following eight functional units: Step- Wise Safe Switching unit, Common controllers design unit, Experimentation unit, Simulation unit, Identification unit, Trajectory cruise unit, Operating points unit and Expert system unit. The supervisory scheme orchestrates both the off-line preparative actions, as well as the on-line actions that implement the Stepwise Safe Switching Logic. The proposed scheme is a generic tool, that may be easily applied for a variety of industrial control processes and may be implemented as an automation software system, with the use of a high level programming environment, like Matlab.

Keywords: Supervisory systems, safe switching, nonlinear systems.

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GEOMETRY DESIGN SUPPORTED BY MINIMIZING AND VISUALIZING COLLISION IN DYNAMIC PACKING

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Abstract:

This paper presents a method to support dynamic packing in cases when no collision-free path can be found. The method, which is primarily based on path planning and shrinking of geometries, suggests a minimal geometry design change that results in a collision-free assembly path. A supplementing approach to optimize geometry design change with respect to redesign cost is described. Supporting this dynamic packing method, a new method to shrink geometry based on vertex translation, interweaved with retriangulation, is suggested. The shrinking method requires neither tetrahedralization nor calculation of medial axis and it preserves the topology of the geometry, i.e. holes are neither lost nor introduced. The proposed methods are successfully applied on industrial geometries.

Keywords: Dynamic packing, path planning, shrinking.

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FLEXIBLE HEURISTICS FOR PROJECT SCHEDULING WITH LIMITED RESOURCES

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Abstract:

Resource-constrained project scheduling is an NPhard optimisation problem. There are many different heuristic strategies how to shift activities in time when resource requirements exceed their available amounts. These strategies are frequently based on priorities of activities. In this paper, we assume that a suitable heuristic has been chosen to decide which activities should be performed immediately and which should be postponed and investigate the resource-constrained project scheduling problem (RCPSP) from the implementation point of view. We propose an efficient routine that, instead of shifting the activities, extends their duration. It makes it possible to break down their duration into active and sleeping subintervals. Then we can apply the classical Critical Path Method that needs only polynomial running time. This algorithm can simply be adapted for multiproject scheduling with limited resources.

Keywords: Project management, resource-constrained scheduling, NP-hard problem, CPM, heuristic method.

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INTELLIGENT ABS FUZZY CONTROLLER FOR DIVERSE ROADSURFACES

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Abstract:

Fuzzy controllers are potential candidates for the control of nonlinear, time variant and also complicated systems. Anti lock brake system (ABS) which is a nonlinear system, may not be easily controlled by classical control methods. An intelligent Fuzzy control method is very useful for this kind of nonlinear system. A typical antilock brake system (ABS) by sensing the wheel lockup, releases the brakes for a short period of time, and then reapplies again the brakes when the wheel spins up. In this paper, an intelligent fuzzy ABS controller is designed to adjust slipping performance for variety of roads. There are tow major sections in the proposing control system. First section consists of tow Fuzzy-Logic Controllers (FLC) providing optimal brake torque for both front and rear wheels. Second section which is also a FLC provides required amount of slip and torque references properties for different kind of roads. Simulation results of our proposed intelligent ABS for three different kinds of road show more reliable and better performance in compare with two other break systems.

Keywords: Fuzzy Logic Control, ABS, Anti lock BrakingSystem.

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WHEN ELUCIDATIONS "INDUCE" MISTAKES: AN EXAMINATION OF DEPICTIONS AND COMPRESSIONS

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ABSTRACT

This paper investigates the cognitive and communicative phenomena whereby attempts to clarify or explain complex information—referred to as "elucidations"—may paradoxically lead to misunderstandings or errors. The study focuses on the roles of depictions (visual or verbal representations) and compressions (simplifications or abstractions) in knowledge transmission. Through a mixed-methods approach combining theoretical analysis and empirical case studies, the research highlights how certain modes of explanation can unintentionally distort meaning or omit critical nuances, thereby inducing mistakes in interpretation or application. The paper explores the balance between clarity and oversimplification, emphasizing that while simplification aids comprehension, excessive compression risks losing essential details. It also examines the impact of different media and cultural contexts on the effectiveness of elucidations. Findings suggest that educators, communicators, and knowledge managers must carefully design explanations to minimize induced errors, employing iterative feedback and multimodal representations. The study contributes to understanding how knowledge is constructed and shared, with implications for education, organizational communication, and information design. Future research directions include developing frameworks to optimize elucidation strategies and reduce cognitive biases in interpretation.

Keywords: knowledge communication, elucidation, cognitive errors, depictions, information compression

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IMPLEMENTATION OF MICROSOFT TECHNOLOGIES IN COURSEWORK – AN INSTANCE STUDY

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ABSTRACT

This study examines the practical integration of Microsoft technologies within higher education coursework, focusing on a case study at the University of Jordan. The research assesses how tools such as Microsoft Teams, OneNote, and Power BI are employed to enhance teaching and learning experiences. Data were collected through surveys, interviews, and classroom observations involving faculty and students across multiple departments. The findings reveal that Microsoft technologies facilitate collaboration, improve content delivery, and support data-driven decision-making in academic settings. However, challenges such as limited digital literacy, infrastructure constraints, and resistance to change were also identified. The study highlights best practices for successful implementation, including comprehensive training, technical support, and alignment with pedagogical goals. It further discusses the role of these technologies in fostering interactive and flexible learning environments, especially under circumstances requiring remote or hybrid education. The paper concludes by recommending institutional policies to promote sustainable technology adoption and continuous evaluation to maximize educational benefits. This research contributes to understanding the impact of digital tools on curriculum modernization and offers practical insights for educators and administrators.

Keywords: Microsoft technologies, educational technology, digital learning, higher education, technology adoption

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CYBERSPACE: A NOVEL MEDIUM TO ADVANCE TRADITIONAL DANCES IN INDONESIA PERSIAN BAZAARS: THE DEMONSTRATION OF STABLE IDEAS

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Fandy Tjiptono
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ABSTRACT
This interdisciplinary study explores how cyberspace serves as an innovative platform for preserving and promoting traditional Indonesian dances within the context of Persian bazaars, symbolizing a cultural exchange and the demonstration of enduring ideas. The research investigates digital media's role in transcending geographical boundaries to sustain intangible cultural heritage. Through ethnographic fieldwork, digital content analysis, and interviews with dancers, cultural practitioners, and audiences, the study reveals how online spaces facilitate the transmission, adaptation, and reinterpretation of traditional dance forms. It highlights the challenges of maintaining authenticity while embracing digital transformation, as well as the opportunities for creative collaboration and audience engagement. The paper discusses how cyberspace enables marginalized cultural expressions to reach global audiences, fostering intercultural dialogue and identity affirmation. Moreover, it examines the symbolic significance of Persian bazaars as a metaphor for cultural stability and exchange. The findings underscore the importance of integrating digital strategies into cultural preservation efforts and suggest policy implications for supporting sustainable cultural practices in the digital age. This research contributes to the broader discourse on technology, culture, and globalization.

Keywords: cyberspace, traditional dance, cultural preservation, digital media, intercultural exchange

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ELEMENTS INFLUENCING ECOLOGICAL MANAGEMENT PRACTICES AMONG HOTELS IN MALAYSIA

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ABSTRACT

This research investigates the factors influencing ecological management practices among hotels in Malaysia, a country experiencing rapid tourism growth and increasing environmental concerns. Using a mixed-methods approach that combines surveys of hotel managers and in-depth interviews, the study identifies key drivers and barriers to adopting sustainable practices. Elements such as organizational commitment, regulatory compliance, customer demand, financial incentives, and staff training emerged as significant influences. The research also explores how cultural values and environmental awareness shape managerial decisions. Findings indicate that while many hotels recognize the importance of ecological management, implementation varies widely due to resource limitations and competing priorities. The study highlights best practices including energy efficiency, waste reduction, water conservation, and green certification programs. It emphasizes the role of government policies and industry associations in promoting sustainability standards. The paper concludes with recommendations for enhancing ecological management through education, incentives, and stakeholder collaboration to ensure the tourism sector's long-term environmental and economic viability. This study contributes to understanding sustainable tourism development in emerging markets.

Keywords: ecological management, sustainable tourism, hotels, Malaysia, environmental practices

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RESILIENT HUMAN RIGHTS GOVERNANCE: FORMULATING INTERNATIONAL STANDARDS

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ABSTRACT
This paper addresses the urgent need for resilient human rights governance by proposing the formulation of robust international standards that can withstand political, social, and economic challenges. The study reviews existing human rights frameworks and critiques their limitations in adapting to contemporary crises such as armed conflicts, authoritarianism, and global pandemics. It advocates for a dynamic governance model that integrates flexibility, accountability, and inclusivity to protect vulnerable populations effectively. Through comparative legal analysis and stakeholder consultations, the research identifies core principles for resilient governance, including enforceability, participatory mechanisms, and cross-sector collaboration. The paper also examines the role of international organizations, states, and civil society in advancing these standards. Emphasis is placed on the balance between universal norms and local contexts to ensure legitimacy and effectiveness. The findings suggest that strengthening human rights governance requires innovative legal instruments, enhanced monitoring, and capacity-building initiatives. The study contributes to the discourse on global justice and offers policy recommendations for international bodies aiming to reinforce human rights protections in an increasingly complex world.

Keywords: human rights governance, international standards, resilience, global justice

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DETERMINANTS FOR TRIUMPH IN EXPATRIATION OF MALAYSIAN INTERNATIONAL CORPORATIONS

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ABSTRACT
This study explores the critical determinants that influence the success of expatriation assignments within Malaysian international corporations. Drawing on qualitative interviews with expatriates, human resource managers, and organizational leaders, the research identifies personal, organizational, and cultural factors that contribute to expatriate effectiveness and adjustment. Key determinants include cross-cultural competence, organizational support systems, clear communication channels, and family integration strategies. The study also highlights challenges such as cultural shock, role ambiguity, and repatriation difficulties. Findings suggest that corporations that invest in comprehensive pre-departure training, ongoing support, and career development opportunities experience higher expatriate success rates. The paper emphasizes the strategic importance of expatriation in global business expansion and knowledge transfer. It concludes with practical recommendations for multinational corporations to enhance expatriate management policies and foster sustainable international operations. This research adds to the understanding of global human resource management and expatriate dynamics in emerging economies.

Keywords: expatriation, international corporations, cross-cultural management, Malaysia, human resource management

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SUSTAINABLE TOURISM, EXPANSION, ALONG WITH PREDOMINANT FUNCTION OF KHARK (KHARG) AND KHARKO ISLANDS

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ABSTRACT
This paper examines the development of sustainable tourism on Khark and Kharko Islands, focusing on balancing economic expansion with environmental preservation and cultural integrity. The study employs a mixed-methods approach, including field surveys, stakeholder interviews, and environmental impact assessments. It identifies the islands' unique ecological and cultural assets that attract tourists and the pressures posed by increasing visitor numbers. The research evaluates current tourism policies, infrastructure, and community involvement in managing growth sustainably. Findings reveal that while tourism contributes significantly to local economies, inadequate planning and environmental degradation threaten long-term viability. The paper advocates for integrated management strategies that prioritize conservation, community empowerment, and responsible tourism practices. It also highlights the role of government agencies and private sector partnerships in implementing sustainable initiatives. The study contributes to the discourse on island tourism development and offers policy recommendations to ensure that Khark and Kharko Islands remain vibrant destinations without compromising their natural and cultural heritage.

Keywords: sustainable tourism, island development, Khark Island, environmental management, cultural preservation

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AESTHETICS OF MOBILE INTERFACE DESIGN

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ABSTRACT
This research explores the aesthetics of mobile interface design, emphasizing how visual elements influence user experience and engagement. The study analyzes design principles such as color theory, typography, layout, and iconography within mobile applications. Using a combination of user surveys, expert evaluations, and case studies, it investigates the relationship between aesthetic appeal and usability. Results indicate that well-designed interfaces enhance user satisfaction, reduce cognitive load, and improve task efficiency. The paper also discusses cultural and contextual factors affecting aesthetic preferences and accessibility considerations for diverse user groups. Additionally, it examines emerging trends such as minimalism, dark mode, and animation in mobile UI design. The research offers practical guidelines for designers aiming to create visually compelling and functional mobile interfaces. It contributes to the broader understanding of human-computer interaction and digital product design, highlighting the importance of aesthetics in technology adoption and user retention.

Keywords: mobile interface, UI design, aesthetics, user experience, human-computer interaction