ABSTRACT BOOK

BALKAN 10.ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

KIRKLARELİ
6 - 7 Ocak 2024

BALKAN
10. ULUSLARARASI UYGULAMALI BİLİMLER KONGRESİ

BALKAN 10TH INTERNATIONAL CONFERENCE ON
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JANUARY 6 - 8, 2024
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JOURNAL OF ADVANCES IN ENGINEERING, ARCHITECTURE AND MATHEMATICS
www.mmmjournal.com
ULUSLARARASI İLAHİYAT ARAŞTIRMALARI DERGİSİ

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BALKAN 10TH INTERNATIONAL CONFERENCE ON APPLIED SCIENCES
JANUARY 6 - 8, 2024
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Edited By
PROF. DR. HÜLYA ÇİÇEK

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Issued: 05.02.2024
ISBN: 978-625-6830-79-0

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In the conference 37 papers have been presented by Turkish participants and 52 papers by foreign participants.
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LANGUAGES
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Sayı : E-98102723-900-379618
Konu : Düzenleme Kurulu Üyesi

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Unvanı : Bilgisayar İşletmeni

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Salon	Moderator		Bildiri No ve Başlığı / Paper ID and Title	Authors
SALON 1	**Doç. Dr. CAN BİÇER**	1	THE ROLE OF THE LEADERS IN STRESS MANAGEMENT IN ORGANIZATIONS: A CONCEPTUAL FRAMEWORK AND SOLUTIONS	Doç. Dr. CAN BİÇER
		2	EVALUATION OF THE BRANDING PROCESSES OF HISTORICAL FOOD AND BEVERAGE BUSINESSES IN TERMS OF BRAND RULES	Doktora Öğrencisi, ŞÜKRÜ GÖKHAN ÜNAL Dr. Öğretim Üyesi, ŞEHNAZ DEMİRKOL
		3	TÜRK DEVLETLERİ TEŞKİLATI 2040 VİZYONU VE TURİZM POLİTİKASI İLE AB TURİZM POLİTİKİLARININ KARŞILAŞTIRMALI ANALİZİ	Doktora Öğrencisi, ŞÜKRÜ GÖKHAN ÜNAL Dr. Öğretim Üyesi, ŞEHNAZ DEMİRKOL
		4	A BIBLIOMETRIC ANALYSIS ON TURNOVER INTENTION IN THE TOURISM SECTOR	Doç. Dr. Sine ERDOĞAN MERCAN Hüseyin ŞAHİN
		5	KONAKLAMA İŞLETMELERİNDE ÇALIŞANLARIN İŞE TUTKUNLUK VE DUYGUSAL EMEK İLİŞKİLERİNİN İNCELENMESİ	Yüksek Lisans Öğrencisi Yasemin ÇAKIR
		6	MARKA HİKAYELERİNİN TÜKETİCİLERİN SATIN ALMA DAVRANIŞI ÜZERİNDEKİ ETKİSİ	Yüksek Lisans Öğrencisi Seda ÖZKİŞİ Doç. Dr. Gonca YILDIRIM

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SALON 2	**Doç. Dr. NALÂN DANÂBAŞ**	1	MANUSA MEKİKLİ DOKUMALARININ GÜNÜMÜZ GİYSİ TASARIMLARINDA YORUMLANMASI	Merve CİNAL Doç. Deniz ÇELİKER
		2	THE TRANSFORMATION OF ARTISTIC CERAMIC PANELS INTO PRESENT-DAY CERAMIC WALL ART	Doç. Dr. NALÂN DANÂBAŞ
		3	EKOLOJİK PERSPEKTİFTE DİSTOPİK TÜRK SİNEMASI	Doktora Öğrencisi, AYTEK UĞUR ÇAN Prof. Dr., MEHMET ÖZTÜRK
		4	YABANCI DİL OLARAK TÜRKÇE ÖĞRETİMİ DERS KİTAPLARINDA BEDEN DİLİ KULLANIMINA YÖNELİK BİR İNCELEME	Tuğçe ÇALIŞKAN Doç. Dr. Esin YAĞMUR ŞAHİN
		5	Rumeli-Balkan Topluluğunda Akraba Evliliği ve Algısı Analizleri: Rumeli-A Çalışması	Gülen Aksu Türker Prof. Dr. Necdet Tekin Prof. Dr. Ayhan Olcay Yasemin Olcay Karahan

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SALON 3	**Prof. Dr. Hanife Nâlân GENÇ**	1	PIERRE LOTI'NİN İZLANDA BALIKÇISI'NDA SINIF ÇATIŞMASI	Yüksek Lisans Öğrencisi, Remzi DEMİR Prof. Dr. Hanife Nâlân GENÇ
		2	PEER HARASSMENT IN LOUIS PERGAUD'S BUTTON WARS	Prof. Dr. Hanife Nâlân GENÇ Yüksek Lisans Öğrencisi, Remzi DEMİR
		3	THE IMAGE OF THE FATHER IN MAUPASSANT'S STORY CALLED SİMON'UN BABASI	Prof. Dr. Hanife Nâlân GENÇ Yüksek Lisans Öğrencisi, Remzi DEMİR
		4	HANÇERLİ HANIM HİKÂYE'İ GARİBESİ'NE PETER PAN SENDROMU AÇISINDAN BİR BAKIŞ	BÜŞRA DEMİRCİ
		5	BOSNALI İBRAHİM VEHBÎ'NİN RUZNAMESİ	Doktora Öğrencisi MUSTAFA YILMAZ
		6	CHRONOTOPE IN BILGE KARASU'S STORY OF MULBERRIES	Doç. Dr. SEVGÜL TÜRKMENOĞLU
		7	EAST-WEST COMPARISON IN FATIH-HARBIYE NOVEL	Doç. Dr. SEVGÜL TÜRKMENOĞLU
		8	An Evaluation on the Use of the "h" Consonant in Dobruja Turkish Dialects	Prof. Dr. Özlem Demirel Dönmez
		9	ON THE SIGN ADJECTIVE ''OL IN SEYF-İ SARAYİ'S GULISTAN TRANSLATION	Dr. Öğr. Üyesi Melek ÇUBUKCU
		10	KELİME ÇAĞRIŞIMLARININ SOSYO-EKONOMİK DÜZEY DEĞİŞKENİNE İNCELENMENSİ "ELMA" ÖRNEĞİ	Doç. Dr. Selcen ÇİFCİ

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SALON 4	**Assoc. Prof. Nazile Abdullazade**	1	OKUL ÖNCESİ ÖĞRETMENLİĞİ LİSANS ÖĞRENCİLERİNİN DEĞERLER EĞİTİMİNE İLİŞKİN TUTUMLARI	Dr. Öğr. Üyesi AHMET SAKİN MİNENUR ÇÖPOĞLU
		2	ORTAOKUL 8. SINIF ÖĞRENCİLERİNİN ‘’SORUMLULUK’’ DEĞERİNE YÖNELİK METAFORİK ALGILARI	Yüksek Lisans Öğrencisi, FATMA SARIKAN Doç. Dr., GÖKÇE KILIÇOĞLU
		3	BALKANLARDA TÜRKLER VE ETKİLERİ	Prof. Dr Nurhan AYDIN Perihan AKSU
		4	ABDÜLVEHHAB EŞ-ŞA’RÂNÎ’NİN LEVÂHÎKU’L-ENVÂRİL-KUDSİYYE Fİ TABAKÂTİ’L ULEMÂ VE’S-SUFİYYE İSİMLİ ESERİNDEKİ ZÜHD HAYATI KONUSUNDAKİ NASİHATLERİN GÜNÜMÜZ İNSANINA ÖRNEKLİĞİ	Meral Mercan Doç Dr. Sevim Arslan
		5	ƏDƏBİ ƏSƏRLƏRİN İNTERPRETASİYASINDA MƏTNİN XÜSUSİYYƏTLƏRİ	Assoc. Prof. Nazile Abdullazade Bilal Hasanli

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SALON 5	**Dr. Çiğdem KEVEN-AKLİMAN**	1	Genç Yetişkinlerin Köken Aile Fonksiyonları İle COVID 19'a Bakışları Arasındaki İlişkide İnfodeminin Aracı Rolü	Lisansüstü Öğrencisi, Sümeyra ÖZKIŞ Dr. Öğr. Üyesi, Zerrin BÖLÜKBAŞI MACİT
		2	EVLİ BİREYLERİN KÖKEN AİLE FONKSİYONLARI VE İLİŞKİ ÖZ DÜZENLEME ARASINDAKİ İLİŞKİDE EVLİLİĞE GEÇİŞ VE BENLİĞİN AYRIMLAŞMASININ ARACI ROLÜ	Lisansüstü Öğrencisi, Münevver DEMİRKAYA Dr. Öğr. Üyesi, Zerrin BÖLÜKBAŞI MACİT
		3	Systematic Review on the Use of CBT in Adults Diagnosed with Depression Systematic Review	Ceren TANER Doç .Dr. Meryem KARAAZİZ
		4	TÜRK CEZA SISTEMINDE SUÇA SÜRÜKLENEN ÇOCUKLAR VE EBEVEYNLERI: DANıŞMANLıK TEDBIRI BAĞLAMıNDA PSIKOLOJIK DANıŞMANLARıN GÖRÜŞLERI	Dr. Çiğdem KEVEN-AKLİMAN
		5	MENTAL HEALTH LITERACY, HELP-SEEKING BEHAVIORS, AND SELF- STIGMA AMONG YOUNG ADULTS	DR. ÖĞR. ÜYESİ NİHAN DURGU BAŞAK KORKMAZ

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SALON 6	**Dr. Öğretim Üyesi, HÜLYA BİNGÖL**	1	GELİŞEN TEKNOLOJİNİN FUTBOL HAKEMLERİNİN KARAR VERME BECERİLERİ ÜZERİNE ETKİSİNİN ARAŞTIRILMASI	Dr. Öğr. Üyesi Ramazan ŞEKER Doç. Dr. Meryem ALTUN EKİZ Yüksek Lisans Öğrencisi Mehmet Ali DAMLAR
		2	İNÖNÜ ÜNİVERSİTESİ BEDEN EĞİTİMİ VE SPOR YÜKSEKOKULU ÖĞRENCİLERİNİN MUTLULUK DÜZEYLERİ	Pınar BARCA Aslı GÜN Özgür EKEN
		3	SPOR SALONLARINA AKTİF DEVAM EDEN BİREYLERİN SPORDAN VE SPOR SALONLARINDAN BEKLENTİ DÜZEYLERİNİN İNCELENMESİ	ASLI GÜN PINAR BARCA DOÇ.DR.ÖZGÜR EKEN
		4	MÜZİĞİN SPOR PERFORMANSI ÜZERİNDEKİ ETKİLERİ: ÇEŞİTLİ BRANŞLARDA MÜZİK UYARANLARININ ROLÜ	ASLI GÜN DOÇ.DR.ÖZGÜR EKEN
		5	EFELER LİGİNDEKİ SPORCULARIN VOLEYBOLA YÖNELMESİNDE AİLE ve ÇEVRENİN BAKIŞ AÇISI	Uzman, İLİNSU DEMİRALP Dr. Öğretim Üyesi, HÜLYA BİNGÖL
		6	E-SPOR YOLCULUĞU VE E-SPORCU KARİYERİ	Uzman, İLİNSU DEMİRALP Dr. Öğretim Üyesi, HÜLYA BİNGÖL

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SALON 7	Doç. Dr. Müge MANGA	1	CHANGES IN BILATERAL TRADE AFTER BTAs - EVIDENCE FROM VIETNAM AND ITS THREE MAJOR PARTNERS	Hoang-Yen NGUYEN Que-Nhu DUONG
		2	Accommodation Trends: Exploring Homestay Preferences in the Johar Valley of Uttarakhand	Shubham Goswami giri Dr. Surendra Kumar
		3	FOREIGN TRADE, ECONOMIC GROWTH, TURKIYE	Musa MANGA Doç. Dr. Müge MANGA
		4	THE RELATIONSHIP BETWEEN E-COMMERCE, INDUSTRIAL PRODUCTION INDEX and INFLATION in TURKEY	Musa MANGA Doç. Dr. Müge MANGA
		5	HIGH-TECH EXPORTS OF TURKISH ECONOMY: EVIDENCE FROM CONSTANT MARKET SHARE ANALYSIS	Dr. Öğr. Üy. Alper YILMAZ
		6	ZAMAN YÖNETİMİNİN İŞ TATMİNİNE, İŞ PERFORMANSINA VE VERİMLİLİĞE ETKİSİ: TURİZM SEKTÖRÜ ÇALIŞANLARI ÜZERİNE BİR ARAŞTIRMA	Öğr. Gör. Ümit AYDIN
		7	MÜŞTERİ DENEYİMİNİN, MÜŞTERİ TATMİNİ VE SADAKATİ ÜZERİNE ETKİSİ: TURİZM SEKTÖRÜ	Öğr. Gör. Ümit AYDIN
		8	KADIN İMAJI REKLAMLARA YÖNELİK TUTUMUN DEMOGRAFİK ÖZELLİKLERE GÖRE FARKLILIĞI	Doktora Öğrencisi, Malik DÜNDAR

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SALON 8	**Dr. Öğr. Üyesi OĞUZ YOLAL**	1	DÜZENSİZ GÖÇLE MÜCADELE KAPSAMINDA TÜRKİYE-YUNANİSTAN İLİŞKİLERİ	Dr. TÜLİN YANIKDAĞ
		2	TİCARET UNVANLARI HAKKINDA TEBLİĞ'E İLİŞKİN BİR DEĞERLENDİRME	Dr. Öğr. Üyesi OĞUZ YOLAL
		3	THE REVIEW OF GRADUATE THESIS TITLED MORAL DISENGAGEMENT	Dr. Hakan GÜVENER
		4	MORAL DISENGAGEMENT IN YOUTUBE DIGİTAL MEDIA: A HASHTAG ANALYSIS	Dr. Hakan GÜVENER
		5	DİJİTAL MEDYA BAŞLIKLI LİSANSÜSTÜ TEZLERİN ANALİZİ	Dr. Hakan GÜVENER

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SALON 1	**Prof. DR. Haotian Wu**	1	DECODING THE LANGUAGE OF FAITH: SYMBOLISM IN MODERN UKRAINIAN MONUMENTAL CHURCH PAINTING	Khlystun Yuliia Igorivna
		2	UNDERSTANDING THE ROOTS OF FAITH: EXPLORING WHOOEAISM, THE INDIGENOUS RELIGION OF THE JARAWA PEOPLE IN THE ANDAMANS	Prof. DR. Haotian Wu
		3	COMBATING TWO MAJOR THREATS IN KOSOVO: DOMESTIC VIOLENCE AGAINST CHILDREN AND HUMAN TRAFFICKING	Dr. Guelfo Carbone
		4	HEIDEGGER'S EARLY HERMENEUTICAL PHENOMENOLOGY AND THE WORLD-EVENT	Areti Tziboula, Anna-Maria Rentzeperi-Tsonou
		5	THEMATIC ANALYSIS OF LIBRETTI IN ROSSINI'S OPERAS AND THEIR INFLUENCE ON THE COMPOSER'S WORK	Ashwaq Alsulami, Jianhua Shao
		6	THE LASTING IMPACT: CHINESE ADULTS REFLECT ON SIBLING LOSS AND COPING STRATEGIES IN CHILDHOOD, WITH IMPLICATIONS FOR THERAPEUTIC INTERVENTIONS.	Hanaa Bajilan
		7	BEYOND SILENCE: EXPLORING THE INNER WORLDS AND PROTEST OF INDIAN WOMEN IN THE THOUSAND FACES OF NIGHT	Rony Reátegui, Cesar Chácara,
		8	DIGITAL PRESERVATION OF CUSCO'S VIRGIN OF LORETO CHAPEL: A 3D MODELING SHOWCASE	Benjamin Castañeda, Rafael Aguilar

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SALON 2	**Dr. Yang Meng,**	1	NAVIGATING DISSOCIATION DURING MASTURBATION: MINDFULNESS STRATEGIES FOR HEALING AND RECONNECTION AFTER SEXUAL TRAUMA	Assoc. Prof. Alisha Fisher
		2	LOST IN THE SHUFFLING PLAY: ABSURDITY, IDENTITY, AND THE TRAGICOMIC LANDSCAPE OF STOPPARD'S ROSENCRANTZ AND GUILDENSTERN ARE DEAD	Dr. Azza Taha Zaki
		3	HOME AND IDENTITY: THE DWELLING AS A SHAPER OF CONTEMPORARY DONG WOMEN'S SELFHOOD	Sze Wai Veera Fung, Peter W. Ferretto
		4	UNVEILING THE SYMBOLISM: FEMALE CIRCUMCISION AND SOLOMON'S TEMPLE IN ISLAMIC HADITHS	B. O. Diyaolu
		5	EXPLORING THE NEXUS BETWEEN ONLINE SPORTS EVENTS AND BETTING BEHAVIOR AMONG NIGERIAN YOUTH	K. N. Penna, E. J. Hoffman, T. R. Carter
		6	SILENCED NARRATIVES: SECOND CLASS CITIZEN AND THE STRUGGLE FOR BLACK WOMEN'S AUTHORSHIP	Sherly Ferro Lensun Barry Ardley, Abi Hunt,
		7	SEX TRAFFICKING REPORTING IN ONTARIO VS. NOVA SCOTIA: A CANADIAN ONLINE NEWS ANALYSIS	Lecture Nick Taylor Dr. Yang Meng,
		8	EMPOWERING INDIGENOUS COMMUNITIES: CULTURALLY-DRIVEN SOLUTIONS FOR SHARED ECONOMIC PROSPERITY	James L. Patnao Essam Almuhsin, Ben Soh, Alice Li, Azmat Ullah

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SALON 3	**Dr. Sara Mohammadi Avandi,**	1	THE IMPACT OF TRANSLATION ON ARABIC AND ISLAMIC CIVILIZATION: A CATALYST FOR THE GOLDEN AGE (661-1258)	Konstantinos Sofianos, Michail Stefanidakis Ye Wei,
		2	ECHOES OF ANCESTRAL FLAME: TRACING THE INDO-EUROPEAN, OLD IRANIAN, AND LUR FIRE TRADITIONS	Smail Hadj Mahammed
		3	AUGMENTING THE PAST: AN AR-POWERED VIRTUAL HERITAGE APPLICATION DESIGN	Alex Bell Prof. Sitalakshmi Venkatraman,
		4	DECIPHERING GRANDE KABYLIA: A DESCRIPTIVE ANALYSIS OF LIBYAN STELES IN ALGERIA	Ye Wei, Fiona Wahr
		5	COLONIAL PUNJAB TRANSFORMED: A LOOK AT THE IMPACT OF TRANSPORTATION AND COMMUNICATION TECHNOLOGIES	Fahri Benli, Fiona Wahr Anita Kéri Josefina Bengoechea,
		6	CHINA'S HEALTH SILK ROAD: NAVIGATING SOUTHEAST ASIA AND EUROPE THROUGH COVID-19	Dr. Sitalakshmi Venkatraman,
		7	THE POWER OF INDIGENOUS PEOPLE IN MINING PROJECT DECISIONS: A PILBARA CASE STUDY	Behzad Moeini Sam, Dr. Sara Mohammadi Avandi,
		8	LEVERAGING TWITTER FOR SOCIAL CHANGE: FOOD BANKS IN SAUDI ARABIA COMBAT FOOD WASTE THROUGH STRATEGIC COMMUNICATION	Afroz Kianpor Stephen Barnes Samia Ait Ali Yahia
			EXAMINING FOREIGN INFLUENCES IN USUL FIQH METHODOLOGIES: A CRITICAL ANALYSIS OF ORIENTALIST SCHOLARSHIP	Assoc. Prof . Dr. Ian Mills, Dr. Frances Cleary

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

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

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

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

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SALON 1	Doç. Dr. Nazmiye Özlem ŞANLI	1	Endemik Gül (Rosa pisiformis Christ D. Sosn) bitkisinin antikanserojen bileşiklerinin belirlenmesi	MSc. UYGAR MERİÇ Prof. Dr. HATİCE DEMİRAY MSc. M. EMİR DİBEK
		2	Astragalus flavescens BOISS. endemik bitkisinin uçucu yağlarının eldesi ve antibakteriyel, antioksidant aktiviteleri	MSc. ERKAN MEMİŞ Prof. Dr. HATİCE DEMİRAY
		3	Comparative of Water-soluble vitamins in gel and green leaf parts of Aloe vera (L.)	BSc.Heleen Tahseen Yaseen Yaseen Prof.Dr.Sevda KIRBAĞ Prof.Dr.Fikret KARATAŞ
		4	MICROBIAL INTERACTIONS IN DENTAL BIOFILM DEVELOPMENT	MSc. Seda GÜLER Doç. Dr. Nazmiye Özlem ŞANLI
		5	ANTIMICROBIAL AND ANTIBIOFILM COATING FOR DENTAL MATERIALS	MSc. Seda GÜLER Doç. Dr. Nazmiye Özlem ŞANLI
		6	CHARACTERİZATİON OF LİQUİD PRODUCTS OBTAİNED FROM PYROLYSİS OF HORSE CHESTNUT (AESCULUS HİPPOCASTANUM) FRUİT İN THE PRESENCE OF METAL/METAL SUPPORT CATALYSTS	Prof.Dr. Halil DURAK Öğr.Gör.Dr. Salih GENEL

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SALON 2	HASAN KELEŞ	1	An Analog Circuit Model for Solving a Class of Nonsmooth Optimization Problems	Alireza Hosseini
		2	SOLVING FRACTIONAL DIFFERENTIAL EQUATIONS WITH LAPLACE TRANSFORMATION	Öğretmen Duygu İŞLEYEN Prof. Dr. Tanfer TANRIVERDİ
		3	ON AND EIGENVALUES-EIGENVECTORS	HASAN KELEŞ
		4	IDEALS AND REGULAR MATRICES	HASAN KELEŞ
		5	ON COMPLEMENT OF BASE IN B_3	HASAN KELEŞ

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SALON 3	**Doç. Dr. Dilek ÇAVUŞOĞLU**	1	PROTECTIVE ROLE OF A FUNGAL TOXIN FUSICOCCIN AGAINST SALT STRESS IN ALLIUM CEPA L.	Prof. Dr. Kürşat ÇAVUŞOĞLU Doç. Dr. Dilek ÇAVUŞOĞLU
		2	BIOCHEMICAL EFFECTS OF EXOGENOUS β-CAROTENE APPLICATION IN ALLIUM CEPA L. BULBS GERMINATED IN SALINE CONDITIONS	Doç. Dr. Dilek ÇAVUŞOĞLU
		3	CULTIVATION OF LABLAB BEAN (Lablab purpureus)	Dr.Öğr.Üyesi, HATİCE ÇOKKIZGIN Doç.Dr., ALİHAN ÇOKKIZGIN Doç.Dr., ÜMİT GİRGEL
		4	GENES AND TRANSGENIC PLANTS	Dr.Öğr.Üyesi, HATİCE ÇOKKIZGIN
		5	PAMUKLU KUMAŞLARA UYGULANAN DİJİTAL BASKI İŞLEMİNİN SEÇİLMİŞ PROSES PARAMETRELERİNE ETKİSİNİN İNCELENMESİ	Doç. Dr. FÜSUN DOBA KADEM Dr. ŞEHPAL ÖZDEMİR
		6	CIVA KİRLİLİĞİ ve ÇEVRE ÜZERİNE OLAN ETKİLER	Doç. Dr., Serpil SAVCI
		7	SIFIR ATIK PRENSİBİ ve FAYDALARI	Doç. Dr., Serpil SAVCI

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SALON 4	**Selim Taşkaya**	1	A GENERAL EVALUATION ON TOWN BASED DEVELOPMENT PLANS ACCORDING TO THE TOPOGRAPHICAL CONDITION, ARDANUÇ EXAMPLE	Selim Taşkaya Osman Bağlı
		2	KENT TASARIMINDA İMAR PLANLARININ GÜNCELLENMESİNE YÖNELİK BİR DEĞERLENDİRME	Öğr. Gör. Dr. SEMA KARAGÜLER
		3	YOZGAT MENEKŞE EVLERİ KENTSEL DÖNÜŞÜM DENEYİMİ	Doç. Dr. Seçil Gül MEYDAN YILDIZ Şehir ve Bölge Plancısı Bediha Eda KARACA Yüksek Şehir ve Bölge Plancısı Hüsne TEMUR
		4	KENTSEL DÖNÜŞÜMÜN KAVRAMSAL ŞEMASI	Doç. Dr. Seçil Gül MEYDAN YILDIZ Şehir ve Bölge Plancısı Bediha Eda KARACA Yüksek Şehir ve Bölge Plancısı Hüsne TEMUR
		5	Forecasting Significant Wave Height: Comparative Analysis of XGBoost and Wavelet-XGBoost Models	Anıl Çelik

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SALON 5	Dr.Öğrt. Üyesi, Seher ÇEVİK AKTURA	1	IMPACT OF DISEASES CAUSED BY MICROMYCETE FUNGI IN RESIDENTIAL BUILDINGS IN VARIOUS FORMS ON HUMAN HEALTH	Balakhanova Gumru Vasif
		2	CK YÜKSEKLİĞİ: ÜÇ OLGU SUNUMU	Uzm. Dr. Yasin Selçuk Yardibi Uzm. Dr. Döndü Ülker Üstebay
		3	Boy kısalığı ve Hashimato tiroiditi: Olgu sunumu	Uzm. Dr. Begüm Barış Çetinkaya Uzm. Dr. Yasin Selçuk Yardibi Doç.Dr.Sefer Üstebay
		4	HEMŞİRELİK VE MOBBİNG	Dr.Öğrt. Üyesi, Seher ÇEVİK AKTURA
		5	Treatment Approaches, Medications Used and Side Effects in Covid-19 Patients	Hem. Emine TAT Doç. Dr. Neslihan PINAR
		6	TAEKWONDO SPORCULARININ MÜSABAKA ESNASINDAKİ KENDİLERİYLE KONUŞMA DÜZEYLERİNİN İNCELENMESİ	AKİF DURSUN
		7	TAEKWONDO SPORCULARININ SPORCU BİLİNÇLİ FARKINDANLIK DÜZEYLERİNİN BAZI DEĞİŞKENLER AÇISINDAN İNCELENMESİ	AKİF DURSUN

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SALON 6	**Assoc. Prof. TUĞÇE KALEFETOĞLU MACAR**	1	FENITROTHION INSECTCIDE PROMOTES GENOTOXICITY IN ALLIUM CEPA L.	Assoc. Prof. OKSAL MACAR Assoc. Prof. TUĞÇE KALEFETOĞLU MACAR Assoc. Prof. ALİ ACAR
		2	MERISTEMATIC CELL DAMAGES CAUSED BY HEXACONAZOLE FUNGICIDE IN ALLIUM CEPA L.	Assoc. Prof. OKSAL MACAR Assoc. Prof. TUĞÇE KALEFETOĞLU MACAR Assoc. Prof. ALİ ACAR
		3	PROTECTIVE ROLE OF CYNARA SCOLYMUS L. (ARTICHOKE) LEAF EXTRACT AGAINST GENOTOXICITY INDUCED BY THIAMETHOXAM INSECTICIDE IN ALLIUM CEPA L. (ONION).	Assoc. Prof. TUĞÇE KALEFETOĞLU MACAR Assoc. Prof. OKSAL MACAR Assoc. Prof. ALİ ACAR
		4	AN INVESTIGATION ON THIOBENCARB-INDUCED BIOCHEMICAL TOXICITY IN ALLIUM CEPA L.	Assoc. Prof. TUĞÇE KALEFETOĞLU MACAR Assoc. Prof. OKSAL MACAR Assoc. Prof. ALİ ACAR
		5	FOOD SECURITY OF THE FUTURE: SUSTAINABLE NUTRITION	Arş. Gör. Dr. Yeşim BEDİR Prof. Dr. Mehmet Murat KARAOĞLU
		6	Pr(OTf) 3 CATALYZED SYNTHESIS OF N-SUBSTITUTED DECAHYDROACRIDINE-1,8-DIONES	B.Sc.CHRİSTİNA DEMİRCAN, Prof.Dr,ZÜHAL TURGUT

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SALON 7	Assoc. Prof. Dr. ÖMERÜLFARUK ÖZGÜVEN	1	BİR OTOMOTİV YAN SANAYİİ İŞLETMESİNDE SİSTEM ANALİZİ VE KALİTE İYİLEŞTİRME	Dr. Öğr. Üyesi, Kerem CİDDİ Öğrenci, Güllü Nur SÜZEN
		2	ERRORS MADE IN BASE STATION SOURCED ELECTROMAGNETIC POLLUTION MEASUREMENTS AND CORRECTION SUGGESTIONS	Assoc. Prof. Dr. ÖMERÜLFARUK ÖZGÜVEN Assoc. Prof. Dr. TEOMAN KARADAĞ
		3	DISPLAYING THE DATA RECEIVED FROM THE LINEAR IMAGE SENSOR ON THE COMPUTER SCREEN	Assoc. Prof. Dr. ÖMERÜLFARUK ÖZGÜVEN Instructor. AHMET SAİT ERGİN
		4	ENDÜSTRİYEL UYGULAMALARDA KULLANILMAK AMAÇLI SUSUZ BOR ÜRETİMİNDE TİNKAL KALSİNASYONU	Dr. Öğr. Üyesi M. Engin Kocadağistan Yük. Lis. Öğrencisi Emine Ataç
		5	ARTIFICIAL INTELLIGENCE AND THE ART OF DECEPTION: ACCURACY LIMITS, ETHICAL FRAMEWORK AND RISK ASSESSMENT	Doğan Can ADIGÜZEL Dr. Öğr. Üyesi Emre DELİBAŞ
		6	THE DARK SIDE OF CYBER WORLD: MODERN PROBLEMS FROM SECURITY TO BULLYING	Aysima İrem KESİCİ Sedef MERT Deniz Mertkan GEZGİN
			INVESTIGATION OF BEHAVIORAL INTENTION TOWARDS CHATBOT USE IN EDUCATION AMONG UNIVERSITY STUDENTS STUDYING COMPUTER PROGRAMMING EDUCATION REGARDING VARIOUS VARIABLES	Deniz Mertkan GEZGİN Sedef MERT Aysima İrem KESİCİ

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		2	REINVENTING TRADITION: HOW "GUOCHAO" IS SHAPING CHINESE FASHION THROUGH ANGEL CHEN'S DESIGNS	Dr. Zhe Ginnie Wang
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MSc. UYGAR MERİÇ [1], Prof. Dr. HATİCE DEMİRAY [2], MSc. M. EMİR DİBEK[3]

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ÖZET

Betulinik asit *Rosa* sp. dahil çeşitli bitkilerin farklı organlarından izole edildiği bilinen bir triterpenoiddir. Bu metabolit insan melanoma hücrelerinin büyümesi ve AIDS virüsünün replikasyonu üzerine ket vurucu etkiye sahiptir. İlaveten betulinik asit türevleri de insan melanoma hücrelerinde apoptosisi tetiklemektedir. Bu çalışmanın amacı; endemik *Rosa psiformis* subsp. *pisiformis* Christ. D. Sosn.'un (gül) kök, gövde, yaprak ve meyvelerindeki betulinik asit miktarlarını saptayarak karşılaştırmaktır. Bu amaçla doğal yayılış alanı olan Gümüşhane ilinden toplanan bitkinin kök, gövde, yaprak ve meyvelerinden hazırlanan droglardan metanol ile ekstre edildikten sonra hekzan ile partisyon yapılarak terpenler izole edilmiştir. Kök, gövde, yaprak ve meyvelerindeki betulinik asit miktarları HPLC-DAD ile tayin edilerek sitotoksik etkilerinin araştırılmıştır. Böylece özellikle meyve ve tohumlarında önemli miktarda C vitamini, antioksidanlar ve anti enflamatuvar özellikleriyle bilinen bitkinin; vitamin C den başka kanser hücrelerine karşı anti-kanser etkisi gösteren triterpen asitlerden özellikle betulinik asitin meyve ile birlikte diğer farklı organlarda da (kök, gövde, yaprak) varlığı tayin edilmiştir.

Anahtar Kelimeler: *Rosa psiformis*, betulinik asit, HPLC, sitotoksik aktivite.

ASTRAGALUS FLAVESCENS BOİSS. ENDEMİK BİTKİSİNİN UÇUCU YAĞLARININ ELDESİ VE ANTİBAKTERİYEL, ANTİOKSİDAN AKTİVİTELERİ

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ÖZET

Türkiye'de yaklaşık 380 *Astragalus* (Leguminosae) türü bulunmaktadır. *Astragalus* türleri üzerinde yapılan çalışmalarda başlıca polisakkaritler ve saponinler olmak üzere indolizidin alkaloidler, flavonoidler, organik asit türevleri ve bazı nitro bileşikleri izole edilmiştir. Literatürde Astragalus türlerinden izole edilen saponinlerin tansiyon düşürücü ve kalp güçlendirici etkilerinin yanısıra antitümör, antiviral, karaciğer koruyucu ve bağışıklık sistemini güçlendirici etkileri olduğu bildirilmiştir. Bu çalışmada İzmir Bozdağ'dan toplanan endemik Astr*agalus flavescens* bitkisinin kök, gövde ve yaprak kısımları GC-MS yöntemiyle uçucu yağı izole edip antibakteriyel ve antioksidant aktiviteleri araştırılmıştır.

Anahtar Kelimeler: *Astragalus*, saponin, GC-MS, antioksidant aktivite

COMPARATIVE OF WATER-SOLUBLE VITAMINS IN GEL AND GREEN LEAF PARTS OF *Aloe vera* (L.)

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Abstract

Aloe vera is used for cosmetic and medical purpose. This study utilised high-performance liquid chromatography to examine the levels of vitamin C and B-complex vitamins (thiamine (vitamin B1), riboflavin (vitamin B2), nicotinic acid plus nicotinamide (vitamin B3), pantothenic acid (vitamin B5), pyridoxine (vitamin B6), folic acid (vitamin B9), and cyanocobalamin (B12)) in the gel and green leaf part of the *Aloe vera*. The levels of vitamin C, vitamin B1, vitamin B2, vitamin B3, vitamin B5, vitamin B6, vitamin B9, and vitamin B12 in gel and green leaf part varied from 0.23 to 90.55 µg/g dw and from 1.16 to 22.56 µg/g dw, respectively. The findings indicate that *Aloe vera*, has sufficient amounts of B12 in the green leaf part. Additional investigation on the biochemical and phytochemical components of *Aloe vera* is required.

Key words: *Aloe vera*, Vitamin, Water Soluble Vitamin, HPLC

DENTAL MALZEMELERDE ANTİMİKROBİYAL VE ANTİBİYOFİLM KAPLAMALAR

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ÖZET

Dişlerin kendini yenileme kapasitesi sınırlıdır bu nedenle ağız sağlığını tedavi etmek ve geliştirmek için diş malzemelerine ihtiyaç duyulmaktadır. Bu diş malzemeleri arasında özellikle eksik dişlerin implantlarla değiştirilmesi, büyük başarı oranıyla en yaygın tedavi seçeneklerinden biridir. Ancak, diş malzemesi uygulamaları kemik kaybını tetikleyebilen ve peri-implantitisle sonuçlanabilen biyofilm kaynaklı peri-implant mukozit gibi enfeksiyonlar nedeniyle hala önemli oranda başarısızlığa uğramaktadırlar. Dental implantların kullanıldığı oral rehabilitasyonun başarısı çok sayıda faktöre bağlıdır. Diş implantlarında uzun süreli stabilite için biyouyumluluk ve mekaniksel özelliklerin yanı sıra, antimikrobiyal etkinlik ve hızlı osseointegrasyon temel kritik faktörlerdendir. İmplantasyon süreci, kullanılan yüzeyi ile çevredeki kemik dokusu arasında iyi etkileşimlerin (osseointegrasyon) yanı sıra, implant başarısızlığının büyük bir kısmından implantla ilişkili enfeksiyonlar sorumlu olduğundan mikrobiyal kolonizasyona karşı direnç gerektirir. Titanyum ve alaşımları düşük yoğunluk, düşük elastikiyet ve korozif ortamlara yüksek direnç göstermeleri ile dental işlemlerde diğer biyomalzemelerin önüne geçmekte; başarı oranlarının yüksek olması nedeniyle implant tedavilerinde altın standart olarak kabul edilmektedir. Ancak, titanyum ve alaşımlarının antimikrobiyal olmaması ve oral floranın mikroorganizma tür ve sayısı bakımından zengin olması nedeniyle titanyum malzemeler biyofilm gelişimi için uygun bir ortam sağlayabilir. Diş plağı olarak da adlandırılan diş biyofilmi, ağız içindeki bakterilerin diş minesi, kök yüzeyi, dental materyaller ve dental implantlar gibi katı yüzeyler üzerine yapışarak oluşur. Dental restoratif malzemelerin yüzeyinde oluşan biyofilmler, kronikleşmiş ağız enfeksiyonlarına, ikincil çürüklere, diş dokularının kaybına ve hatta diş kaybına neden olabilir. Bu sebeple diş enfeksiyonlarını ve tedavilerin erken başarısızlığını önlemek için, günümüzde araştırmalar malzeme yüzeyinde çeşitli antimikrobiyal modifikasyon çalışmalarına yönelmiştir. Titanyum alaşımlı dental materyallerin yüzey modifikasyonları için amalgam, altın/gümüş bileşikleri, florür iyonları, antimikrobiyal peptitler, antibiyotikler ve silan bileşikleri gibi antimikrobiyal bileşiklerle yüzey kaplaması denendiği bilinmekle beraber bu kaplamaların avantajlarını gölgede bırakan önemli dezavantajlara sahip olması nedeni ile alternatif bileşik araştırmaları devam etmektedir. Bu bakımdan çalışmamızın amacı implant tedavilerinin uzun süre stabilitesini sürdürebilmesi için uygulanan antimikrobiyal ve antibiyofilm özellikli uygulamaları özetlemektir.

Anahtar Kelimeler: Antimikrobiyal, Antibiyofilm, Dental Malzemeler, İmplant, Dayanak, Oral Biyofilm, Yüzey Kaplama

ABSTRACT

Teeth have limited self-renewal capacity, thus dental materials are needed to treat and improve oral health. Among these dental materials, replacing missing teeth with implants is one of the most common treatment options with a high rate of success. However, dental material applications still fail significantly due to infections such as biofilm-induced peri- implant mucositis, which can trigger bone loss and result in peri-implantitis. The success of oral rehabilitation using dental implants depends on numerous factors. In addition to biocompatibility and mechanical properties, antimicrobial effectiveness and rapid osseointegration are the main critical factors for long-term stability in dental implants. The implantation process requires good interactions (osseointegration) between the used surface and the surrounding bone tissue, as well as resistance to microbial colonization, as implant-associated infections are responsible for the majority of implant failure. Titanium and its alloys surpass other biomaterials in dental procedures with their low density, low elasticity, and high resistance to corrosive environments; It is considered the gold standard in implant treatments due to its high success rates. However, since titanium and its alloys are not antimicrobial and the oral flora is rich in types and numbers of microorganisms, titanium materials can provide a suitable environment for biofilm development. Dental biofilm, also called dental plaque, is formed by bacteria in the mouth adhering to solid surfaces such as tooth enamel, root surface, dental materials and dental implants. Biofilms formed on the surface of dental restorative materials can cause chronic oral infections, secondary caries, loss of dental tissues and even tooth loss. For this reason, today's research has turned to various antimicrobial modification studies on the material surface to prevent dental infections and early failure of treatments. Although it is known that surface coating with antimicrobial compounds such as amalgam, gold/silver compounds, fluoride ions, antimicrobial peptides, antibiotics and silane compounds has been tried for surface modifications of titanium alloy dental materials, alternative compound research continues because these coatings have significant disadvantages that overshadow their advantages. In this regard, the aim of our study is to summarize the antimicrobial and antibiofilm-enabled applications applied to ensure long-term stability of implant treatments.

Key words: Antimicrobial, Antibiofilm, Dental Materials, Implant, Abutment, Oral Biofilm, Surface Coating

DENTAL BİYOFİLM GELİŞİMİNDE MİKROBİYAL ETKİLEŞİMLER

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ÖZET

İnsan vücudunun dış ortamla temas halinde olan yüzeyleri mikrobiyom olarak adlandırılan yüksek tür çeşitliliği ve hücre sayısıyla karakterize edilen mikroorganizma tabakası ile kaplıdır. Ağız boşluğu, bağırsaktan sonra ikinci en büyük ve çeşitli mikrobiyotaya sahiptir. Bakteriler, virüsler, mantarlar ve protozoonlar da dahil çok sayıda ve çeşitte mikroorganizmayı barındıran ağız boşluğu mikrobiyomu, dil yüzeyi, yanak, dişler, damak, diş etleri, diş eti cebi gibi anatomik olarak farklı ekolojik nişleri temsil eden, farklı mikrobiyotadan oluşur. Anatomik yapı dışında, ağız boşluğunun mikrobiyotasının değişken kompozisyonunu doğal bir koruyucu bariyer olan tükürüğün değişken kalitesi, beslenme alışkanlıkları ve hijyen gibi faktörler belirler. Tükürükteki değişiklikler, kötü ağız hijyeni, antibiyotik tedavisi ve diyet, sigara içme gibi yaşam tarzı seçimleri nedeniyle mikrobiyom içindeki denge bozulduğunda disbiyoz ortaya çıkar. Tükürüğün diş yüzeylerine doğru akması yoluyla pasif olarak taşınan mikroorganizmalar biyofilm-mikrobiyata etkileşimini tetikler. Diş plağı olarak da adlandırılan diş biyofilmi i) bakterilerin katı yüzeylere geri dönüşümlü bağlanması, ii) ekzopolisakkarit matrisinin üretimi, iii) yüzeye geri dönüşümsüz tutunma, iv) biyofilm yapısının olgunlaşması, v) olgun biyofilmin dağılması ve vi) yeni habitatların oluşması aşamalarından geçer. Her mikrobiyal koloni, matriste yapışma ve hayatta kalma için tür-tür etkileşimlerinin farklı kombinasyonlarını içeren bağımsız bir topluluktur. *Streptococcus* spp., *Fusobacterium nucleatum, Porphyromonas gingivalis, Aggregatibacter actinomycetemcomitans, Prevotella intermedia, Tannerella forsythia, Peptostreptococcus micros* ve *Campylobacter rectus* gibi anahtar patojenler, çeşitli organik/inorganik bileşenlerle birlikte biyofilmin gelişimini ve korunmasını destekler. Erken kolonize olan türler yer işgal ederek daha sonra kolonize olabilecek diğer organizmalarla rekabette avantaj kazanır. İkincil kolonizasyonda yer alan organizmalar ise mikroorganizmalar arasında koordinasyon sağlama özelliği nedeniyle diş biyofilmlerinde önemli bir rol oynarlar. Mikrobiyotanın doğal dengesindeki zararlı değişiklik sonucu oluşan biyofilmler, çürük, peri-implantitis, periodontitis, kök kanalı enfeksiyonları, pulpitis, kandidiyazis, protez stomatiti ve yumuşak doku enfeksiyonları gibi ağız hastalıklarına yol açabilir. Ağız ekosistemindeki mikroorganizma etkileşimlerinin aydınlatılması ile bu hastalıkları kontrol etmek ve önlemek için bakteriler arası antagonizmadan yararlanılabilir. Çalışmamızda biyofilm etkileşim mekanizmalarının özetlenmesi hedeflenmiştir.

Anahtar Kelimeler: Oral Biyofilm, Dental Plak, Mikrobiyal Komünite, Antagonizma

MICROBIAL INTERACTIONS IN DENTAL BIOFILM DEVELOPMENT

ABSTRACT

The surfaces of the human body in contact with the external environment are covered with a layer of microorganisms called microbiome, characterized by high microbial species diversity and cell number. The oral cavity has the second largest and most diverse microbiota after the gut. The oral cavity microbiome, which hosts a large number and variety of microorganisms, including bacteria, viruses, fungi, and protozoa, consists of different microbiota representing anatomically different ecological niches such as the tongue surface, cheek, teeth, palate, gums, and gingival pocket. Apart from the anatomical structure, the variable composition of the microbiota of the oral cavity is determined by factors such as the variable quality of saliva, which is a natural protective barrier, nutritional habits and hygiene. Dysbiosis occurs when the balance within the microbiome is disrupted due to changes in saliva, poor oral hygiene, antibiotic treatment, and lifestyle choices such as diet and smoking. Microorganisms passively transported through the flow of saliva toward tooth surfaces trigger the biofilm-microbiota interaction. Dental biofilm, also called dental plaque, goes through the stages of i) reversible attachment of bacteria to solid surfaces, ii) production of exopolysaccharide matrix, iii) irreversible adhesion to the surface, iv) maturation of the biofilm structure, v) disintegration of the mature biofilm, and vi) formation of new habitats. Each microbial colony is an independent community with different combinations of species-species interactions for matrix adhesion and survival. Key pathogens such as *Streptococcus* spp., *Fusobacterium nucleatum*, *Porphyromonas gingivalis*, *Aggregatibacter actinomycetemcomitans*, *Prevotella intermedia*, *Tannerella forsythia*, *Peptostreptococcus micros* and *Campylobacter rectus*, together with various organic/inorganic components, promote the development and maintenance of biofilm. Pioneer species that colonize early gain an advantage in competing with other organisms that may colonize later by occupying space. Organisms involved in secondary colonization play an important role in dental biofilms due to their ability to provide coordination between microorganisms. Biofilms formed as a result of harmful changes in the natural balance of the microbiota can lead to oral diseases such as caries, peri-implantitis, periodontitis, root canal infections, pulpitis, candidiasis, denture stomatitis and soft tissue infections. By elucidating microorganism interactions in the oral ecosystem, antagonism between bacteria can be used to control and prevent these diseases. In our study, it was aimed to summarize the mechanisms of biofilm interaction.

Key words: Oral Biofilm, Dental Plaque, Microbial Community, Antagonism

CHARACTERİZATİON OF LİQUİD PRODUCTS OBTAİNED FROM PYROLYSİS OF HORSE CHESTNUT (AESCULUS HİPPOCASTANUM) FRUİT İN THE PRESENCE OF METAL/METAL SUPPORT CATALYSTS[1]

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ÖZET

Biomass is a potential energy source consisting of wastes of living organisms and biological materials. This study investigates the use of biomass resource as energy raw material. For this purpose, the use of Aesculus plant (Horse Chestnut) fruit as a biomass source was examined by using pyrolysis. In this study, pyrolysis experiments were carried out for the inner fruit of Horse Chestnut (Aesculus) fruit. In all experiments, 300°C, 400°C and 500°C were used as constant pyrolysis temperatures. The experiments were carried out without catalyst and under the influence of different catalysts (Fe, Al, MCM-41/Al, MCM-41/Fe). As a result of these experiments, conversion rates were obtained by calculating liquid, solid and gas products. According to the data obtained, although the values are close to each other, it has been observed that the MCM-41 group catalysts are more effective on the conversion rates. Additionally, according to Gas Chromatography-Mass Spectrometry (GC-MS) results, it was observed that a wide variety of compounds were detected in the liquid product. The results obtained show the effect of the catalysts used in the pyrolysis process and different pyrolysis temperatures on the product distribution. MCM-41 group catalysts have been found to be more effective than others. These results indicate that MCM-41 catalysts play an important role during biomass pyrolysis. It is likely that the high surface area, pore structure and catalytic activity of MCM-41 are behind this effect. It has also been observed that different pyrolysis temperatures affect the product distribution, and the liquid product ratio decreases at higher temperatures. According to GC-MS results, a high percentage of monoaromatic, oxygenated and aliphatic compounds were detected in the liquid products obtained. A high amount of aliphatic compounds have been detected in the inner fruit of horse chestnut.

Anahtar Kelimeler : Bio-oil, biomass, Horse Chestnut, Pyrolysis

[1] Bu çalışma Yüzüncü Yıl Üniversitesi Bilimsel Araştırma Projeleri Koordinatörlüğü tarafından FHD-2021-9710 nolu proje olarak desteklenmiştir.

AN ANALOG CIRCUIT MODEL FOR SOLVING A CLASS OF NONSMOOTH OPTIMIZATION PROBLEMS

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This paper is a novel approach to addressing nonsmooth optimization problems featuring both nonlinear inequality and linear equality constraints. Our proposed model, a singular layer recurrent neural network, derives its foundation from a differential inclusion framework. This model seamlessly integrates steepest descent and gradient projection methods, demonstrating a unique synthesis of optimization techniques. The introduced differential inclusion guarantees that any solution trajectory converges globally to the optimal solution set for the corresponding optimization problem. In contrast to existing models tackling nonsmooth optimization, our newly devised model distinguishes itself by lacking a penalty parameter in its structure and boasting a straightforward architecture. Furthermore, the euilibrium point of the proposed neural network aligns with the optimal solution of the original optimization problem.

Keywords: neural network, nonsmooth optimization, differential inclusion, stability.

SOLVING FRACTIONAL DIFFERENTIAL EQUATIONS WITH LAPLACE TRANSFORMATION

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ABSTRACT

There are a variety of differential equations in science modeling specific phenomena and have applications in applied mathematics. It is useful to examine the fractional versions of these differential equations widely studied recently. Even though the exact solution of differential equations is known, sometimes it is very important to know the expression of these known solutions in terms of special functions. Here, the approximate solutions or solutions of a few first and second order differential equations known in the literature will be written in terms of Mittag-Leffler functions using Laplace transformation by Caputo fractional derivative.

Keywords : Differential equations, Caputo derivative, Laplace transformation, Mittag-Leffler function

ON COMPLEMENT OF BASE IN B_3

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ABSTRACT

This article is about the base complement in B_3. The complement method consists of the course of operations around the centroid. The centroid is played an important role in the encoding of numbers. Some of the numbers are smaller than the centroid and some are larger than the centroid. Thus subtraction of any number is implemented by adding its complement. The concept of caryy comes into play when numbers smaller than the centroid are subtracted from numbers larger than the centroid. The pairs of mutually additive inverse numbers are called complements. Changing the sign of any number is encoded by generating its complement, which can be with a very simple and useful known algorithm. This method is widely used in digital computing.

The base complement of an $n-digit$ number y in base r is defined as $r^n - y$. In practice, the base complement is $(r^n - 1) - y$.

All these calculations were made in $\boldsymbol{B_2}$. The study is about the role of the centroid concept in $\boldsymbol{B_3}$. The digit value of a number in the ternary system is redefined. The new definition radix and diminished radix complement is also updated for this definition. This situation enriched the coding. Any number is written $\mathbf{0}$ and $\mathbf{1}$ in $\boldsymbol{B_2}$. This number is expressed $\mathbf{-1}$, $\mathbf{0}$ and $\mathbf{1}$ in $\boldsymbol{B_3}$. The expression of a number as $\mathbf{-1}$, $\mathbf{0}$ and $\mathbf{1}$ offers new gains in the coding and processing of data. The preliminary approaches in the study are presented noteworthy cases in the evaluation of approaches in numeric and alphanumeric expressions. Initial statements are given on innovations in coding and operations.

Keywords : base, complement, radix, , diminished, coding.

IDEALS AND REGULAR MATRICES

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ABSTRACT

In this study, ideal and regular matrices are discussed. Ideal theory is very important in commutative rings. The new definition of poloid and the concept of ideal on these sets are brought together in this paper. Studies are shown that the concept of poloid is introduced with the addition of the property P4 (A = BP = PC) on the monoid. This concept created new requirements for existing operations on matrices and division ($\frac{A}{B}$). The current studies have shown that the definition of poloid is necessary. Matrices and multiplication of matrices are the best examples of the concept of poloid. In matrices, every element is not invertible. Therefore, every element is not commutative. The property P4 exhibits the new situation in this respect. The study is about this exact subject. We are combined sets, arithmetic operations and poloid property in this study. The concepts, theorems and properties defined on commutative rings are discussed. The new concepts, theorems, lemmas and properties are given. The case of the property P4, which is similar to the commutative property (BP = PB), on ideals is analyzed, In this study, the new approaches to the concepts of regular matrices and ideals are presented. Ideals are related to algebraic structures. In this respect, ideals are similar to poloids. Thus, this situation helps to compare the structures. The presence or absence of common properties of these two algebraic structures are constituted other aspects of the study. The study is enriched with examples. Some connections of the two ideas are emphasized.

Keywords : ideal, matrices, poloids, ring.

ON FRACTION MATRICES $\left(\frac{A}{B}\right)$ AND EIGENVALUES-EIGENVECTORS

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ABSTRACT

This study is about division in matrices and eigenvalues-eigenvectors. The concept of eigenvalues-eigenvectors in the literature is discussed. The status of division operation on these concepts is analyzed. The eigenvalues and eigenvectors of the elements forming the division are compared with the result. The matrix resulting and the resulting difference are investigated. The eigenvalues-eigenvectors of the constituent matrices the division and the eigenvalues-eigenvectors obtained from the result matrix are examined. The brief literature review of the study is written and the summary history of this study is added in the first section. The theorems related to the subject are listed. Some applications related to this topic are given. The preliminary information that will form the second part is given. The new developments and findings are investigated in the next section. The changes of known definitions, theorems and lemmas are observed. If there are unprotected cases, examples are given for these situations. The new contributions on the parallel cases of matrix product and scalar product in the eigenvalue definition are investigated. The important hints that will contribute to transformations are obtained. The concept of rotation in the planes in the studies is concluded carried to higher dimensions with this contribution. The rotation in the plane is realized only in two directions. There is no direction limit in dimension 3. This situation covers matrices larger than order 3rd. The computation of parallel states corresponding to the same eigenvalue is expected to be of new interest. In short, the study marks the beginning of innovations between multiplication-division and eigenvalue-eigenvector.

Keywords : division, eigenvalues, eigenvectors, multiplication.

AN INVESTIGATION ON THIOBENCARB-INDUCED BIOCHEMICAL TOXICITY IN *ALLIUM CEPA* L.

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ABSTRACT

Worldwide usage of the herbicide thiobencarb in the agriculture sector causes serious degradation of the environment. It has negative effects on non-target biota in addition to posing an ecological danger. The goal of the study was to investigate the thiobencarb-related biochemical toxicity in *Allium cepa*, a well-known model organism. Three experimental groups were formed from *Allium cepa* bulbs treated with 1.5 mg/L thiobencarb, 3.00 mg/L thiobencarb and 6.0 mg/L thiobencarb in addition to the control group received tap water throughout the 3-day experimental period. The activities of antioxidant enzymes [superoxide dismutase (SOD) and catalase (CAT)] and malondialdehyde (MDA) content were analyzed using the adventitious roots emerged from disk stems. In addition, fresh leaves were utilized to detect chlorophyll a (chl a) and chlorophyll b (chl b) levels. Photosynthetic pigment amounts reduced with increasing doses of the herbicide. On the other hand, thiobencarb induced significant increases in antioxidant enzyme activities as well as MDA level dose-dependently. Our study reveals that thiobencarb provokes oxidative stress and loss of photosynthetic pigment, perhaps providing a strategy to elucidate the recovery pathway in future studies.

Keywords: *Allium cepa*, antioxidant enzymes, chlorophyll, oxidative stress, thiobencarb.

PROTECTIVE ROLE OF *CYNARA SCOLYMUS* (ARTICHOKE) LEAF EXTRACT AGAINST GENOTOXICITY INDUCED BY THIAMETHOXAM INSECTICIDE IN *ALLIUM CEPA* L. (ONION).

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ABSTRACT

The neurotoxic pesticide Thiamethoxam, which belongs to the neonicotinoid family, has gained popularity during the past ten years. Although thought to have a minor neurotoxic effect on mammals, adverse effects on non-target organisms are still of concern. Owing to their culinary value and health advantages, artichoke (*Cynara scolymus* L.), an annual vegetable of the *Asteraceae* family, are cultivated all over the world. This study aimed to investigate the protective role of artichoke leaf extract in reducing the genotoxicity induced by Thiamethoxam in *Allium cepa* L. root cells. The micronucleus, chromosomal aberration rates, and mitotic index did not differ between the groups that received artichoke leaf extract (190 and 380 mg/L) and the control group. A drop in mitotic index, a decrease in micronucleus production and an increase in the frequency of chromosomal abnormalities were observed in the group receiving 500 mg/L Thiamethoxam. Groups that received 190 and 380 mg/L of artichoke leaf extract thiamethoxam in addition to showed alleviation in genotoxicity markers. Furthermore, the toxicity was shown to diminish more noticeably at an artichoke leaf extract concentration of 380 mg/L along with Thiamethoxam. In conclusion, artichoke leaf extract may lessen the toxicity brought on by Thiamethoxam as a preventative nutritional supplement,

Keywords: *Allium cepa* L., Chromosomal aberrations, *Cynara scolymus* L., Genotoxicity, Micronucleus, Mitotic index, Thiamethoxam.

PROTECTIVE ROLE OF A FUNGAL TOXIN FUSICOCCIN AGAINST SALT STRESS IN *ALLIUM CEPA* L.

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ABSTRACT

Fusicoccin is a diterpene glycoside that plays an important role in the regulation of plant growth and development. Fusicoccin produced by *Fusicoccum amydali* fungus is known to affect plant growth positively with external applications due to its potential to stimulate the tolerance system of plants under stress conditions. In this study, it was aimed to reduce the negative effects of salt (0.15 M NaCl) stress on the germination and growth of onion (*Allium cepa* L.) bulbs by external fusicoccin (3 µM) application. For this purpose, the germination percentage, root length, root number, fresh weight, mitotic activity, micronucleus frequency, chromosomal abnormality, antioxidant enzyme activity, osmolyte accumulation, cell membrane damage and root anatomical structure were investigated in the current study. Salt stress caused a statistically significant difference ($p<0.05$) in all examined parameters. External application of fusicoccin to onion bulbs germinated under salt stress conditions was found to be promising as a plant growth promoter and mitosis stimulator. In addition, fusicoccin application alleviated the harmful effects of salt stress on the chromosome structure and root anatomical structure and protected the cells from the cytotoxic and genotoxic effects of salt. Moreover, this application contributed to the fight against reactive oxygen species of onion plant and increased salt tolerance by regulating the accumulation of osmolyte substances such as proline and antioxidant enzymes such as superoxide dismutase and catalase, and by minimizing cell membrane damage in root cells. In conclusion, this study showed that exogenous application of 3 µM fusicoccin reduced the damage caused by oxidative stress in onion bulbs and served for healthy germination and growth.

Keywords : antioxidant enzymes, fusicoccin, growth, mitosis, proline, root anatomy, salinity.

TUZLU KOŞULLARDA ÇİMLENDİRİLEN *ALLİUM CEPA* L. BULBLARINDA EKSOJEN β-KAROTEN UYGULAMASININ BİYOKİMYASAL ETKİLERİ

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ÖZET

Tuzluluk, bitki büyüme ve gelişimini olumsuz yönde etkileyen en önemli abiyotik stres faktörlerinden biridir. β-karoten ise karotenoidler adı verilen renkli pigmentler ailesine ait olan ve sebze ve meyvelere canlı renklerini veren önemli bir bitki pigmenttir. Bu çalışmada, soğan (*Allium cepa* L.) bitkisinde tuz (0.175 M NaCl) stresinin neden olduğu zarara karşı dışarıdan uygulanan β-karotenin (300 mg L^{-1}) koruyucu etkisinin araştırılması amaçlanmıştır. Bu amaçla, deneysel olarak analiz edilecek biyokimyasal parametreler katalaz (CAT) ve süperoksit dismutaz (SOD) aktiviteleri, malondialdehit (MDA) düzeyi ve serbest prolin (PR) içeriği olarak belirlenmiştir. Soğan bulbları bir kontrol ve üç uygulama olmak üzere dört gruba ayrılmıştır. Kontrol grubundaki soğanlar 7 gün boyunca çeşme suyu ortamında çimlendirilmiş, uygulama grubundaki soğanlar ise 7 gün boyunca tek başına NaCl, tek başına β-karoten ve NaCl ile β-karotenin birlikte uygulandığı üç farklı ortamda çimlendirilmiştir. Tuz stresi, soğan bitkisinin kök hücrelerinde CAT, SOD, MDA ve serbest PR içeriklerinde artışa neden olmuştur ($p<0.05$). 300 mg L^{-1} β-karoten uygulaması ise incelenen biyokimyasal parametrelerin kök hücrelerindeki miktarını iyileştirici yönde düzenleyerek antioksidan savunma sistemini güçlendirmiş, hücre zarı hasarını azaltmış ve böylece soğan bitkisinin tuz stresine direncini artırmıştır.

Anahtar kelimeler: Antioksidan, karoten, malondialdehit, prolin, soğan, tuz stresi.

BIOCHEMICAL EFFECTS OF EXOGENOUS β-CAROTENE APPLICATION IN *ALLIUM CEPA* L. BULBS GERMINATED IN SALINE CONDITIONS

ABSTRACT

Salinity is one of the most important abiotic stress factors that negatively affect plant growth and development. β-carotene is an important plant pigment that belongs to the family of colored pigments called carotenoids and gives fruits and vegetables their vibrant colors. In this study, it was aimed to investigate the protective effect of externally applied β-carotene (300 mg L^{-1}) against the damage caused by salt (0.175 M NaCl) stress in onion (*Allium cepa* L.). For this purpose, the biochemical parameters to be analyzed experimentally were determined as the catalase (CAT) and superoxide dismutase (SOD) activities, malondialdehyde (MDA) level and free proline (PR) content. Onion bulbs were divided into four groups as one control and three treatments. The bulbs in the control group were germinated in tap water for 7 days, while the bulbs in the treatment group were germinated in three different medium in which NaCl alone, β-carotene alone, and NaCl and β-carotene were applied together for 7 days. Salt stress caused an increase in the contents of CAT, SOD, MDA and free PR in the root cells of the onion plant ($p<0.05$). The application of 300 mg L^{-1} β-carotene improved the antioxidant defense system and reduced cell membrane damage by regulating in a healing way the amount of the investigated biochemical parameters in the root cells, and thus it increased the onion plant's resistance to the salt stress.

Key words: Antioxidant, carotene, malondialdehyde, proline, onion, salt stress.

LABLAB FASULYESİ (*Lablab purpureus*) YETİŞTİRİCİLİĞİ

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ÖZET

Lablab fasulyesi (*Lablab purpureus*), baklagiller familyasından çok yıllık bir bitkidir. Tropikal ve subtropikal bölgelerde yaygın olarak yetiştirilir. Yaprakları, çiçekleri, baklaları ve tohumları insan ve hayvan beslenmesinde kullanılır. Ayrıca, bitki toprak verimliliğini artırmak için yeşil gübre veya örtü bitkisi olarak da kullanılabilir.

Bu çalışma, *Lablab purpureus* (Lablab fasulyesi) bitkisinin optimal yetiştirme koşullarını ve kültürel uygulamaların bitkinin verim ve kalitesine olan etkilerini araştırmayı amaçlamaktadır. *Lablab purpureus*, genellikle yüksek protein içeriği nedeniyle yem bitkisi olarak önem taşımakla birlikte, özellikle insan gıdası olarak kullanılabilen çok yönlü bir bitkidir.

Çalışma kapsamında, sulama stratejileri, gübreleme yöntemleri gibi tarımsal pratikler gibi çeşitli kültürel uygulamaların *Lablab purpureus*'un büyüme, gelişme ve ürün kalitesi üzerindeki etkileri değerlendirilmektedir.

Sonuç olarak, bu araştırma, *Lablab purpureus*'un etkili bir şekilde yetiştirilebilmesi için tarım uygulamalarının geliştirilmesine katkıda bulunmayı amaçlamaktadır. Çalışma, *Lablab purpureus* yetiştiriciliği için bilimsel temellere dayalı yönergelerin oluşturulmasına ve çiftçilere daha sürdürülebilir ve verimli üretim yöntemleri sağlanmasına yönelik stratejilerin belirlenmesine yönelik önemli bir adım olacaktır. Ayrıca, gelecekteki araştırmalar için temel oluşturacak yeni yönelimler ortaya koymaya çalışmaktadır.

Anahtar Kelimeler: *Lablab purpureus,* Lablab fasulyesi, Yetiştirme Teknikleri

CULTIVATION OF LABLAB BEAN (*Lablab purpureus*)

ABSTRACT

Lablab bean (*Lablab purpureus*) is a perennial plant from the legume family. It is commonly grown in tropical and subtropical regions. Its leaves, flowers, pods, and seeds are utilized for human and animal nutrition. Additionally, the plant can be used as a green manure or cover crop to enhance soil fertility.

This study aims to investigate the optimal growing conditions for *Lablab purpureus* (Lablab bean) and the effects of cultural practices on the plant's yield and quality. While *Lablab purpureus* is important as a forage crop due to its high protein content, it is also a versatile plant suitable for human consumption.

Within the scope of this research, various cultural practices such as irrigation strategies, fertilization methods, and other agricultural techniques are being assessed for their impact on the growth, development, and product quality of *Lablab purpureus*.

Ultimately, this research aims to contribute to the development of agricultural practices for effective cultivation of *Lablab purpureus*. It will be a significant step towards establishing science-based guidelines for *Lablab purpureus* cultivation and identifying strategies to provide farmers with more sustainable and efficient production methods. Furthermore, it endeavors to lay the groundwork for future research directions.

Keywords: *Lablab purpureus*, Lablab Bean, Cultivation Techniques

GENLER VE TRANSGENİK BİTKİLER

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ÖZET

Organizmaların en küçük canlı yapı taşlarına hücre adı verilmektedir. Hücre içerisinde bulunan genler, DNA moleküllerinin belirli bölgelerinde bulunmaktadır ve kalıtımsal bilgi taşıyan yapılardır. Bir organizmanın DNA'sındaki belirli genleri başka bir organizmaya taşımak veya aktarmak gen aktarımı olarak adlandırılmaktadır. Gen aktarma teknolojisi, tarımda verimliliği artırma, hastalıklara karşı dirençli bitkiler oluşturma ve çevresel faktörlere adapte olan bitkiler geliştirme gibi birçok amaca hizmet edebilmektedir. Transgenik bitkiler, genetik yöntemlerle belirli özellikler kazandırılmış bitkilerdir. Bu çalışmada, genler ve transgenik bitkiler üzerine bir araştırma yapılmıştır.

Anahtar Kelimeler: DNA, Genler, Gen Aktarımı, Transgenik Bitki

GENES AND TRANSGENIC PLANTS

ABSTRACT

Cells are the smallest living units of organisms. The genes located within the cell are found in specific regions of DNA molecules and are structures carrying hereditary information. The transfer of specific genes from one organism's DNA to another is referred to as gene transfer. Gene transfer technology serves various purposes in agriculture such as enhancing productivity, creating plants resistant to diseases, and developing plants adaptable to environmental factors. Transgenic plants are plants that have acquired specific characteristics through genetic methods. In this study, research has been conducted on genes and transgenic plants.

Key Words: DNA, Genes, Gene Transfer, Transgenic Plant

PAMUKLU KUMAŞLARA UYGULANAN DİJİTAL BASKI İŞLEMİNİN SEÇİLMİŞ PROSES PARAMETRELERİNE ETKİSİNİN İNCELENMESİ

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ÖZET

Tekstil dijital baskısı gün geçtikçe sürdürülebilirlik yönünü ortaya koyan gelişimler sergilemektedir. Gerek hızlı moda gereksinimleri, gerekse de üretim maliyetlerindeki artış nedeniyle dijital tekstil baskıcılığı pazarda gitgide artan bir öneme sahip olacaktır. Çalışmada Ne 30/1 %100 pamuk ve Ne 12/1 %100 pamuk süprem örme kumaşlar üretilmiştir. Bu kumaşlara ön işlem patında 100 ve 200 g kıvamlaştırıcı içeren pat uygulanmıştır. Seçilen desende dijital baskı işlemi yapıldıktan sonra 10 dakikada fikse işlemi ve ardından yıkama-kurutma uygulanarak kumaş üretimleri tamamlanmıştır. Ham numunelere, ön terbiye sonrası kıvamlaştırıcı patı aktarılmadan önceki numunelere ve baskılı kumaşlara sıklık, gramaj, kalınlık, ilmek iplik uzunluğu, yumuşaklık (Stiffness), patlama mukavemeti, hava geçirgenliği gibi seçilmiş bazı fiziksel ve performans testleri uygulanmıştır. Ayrıca numuneler SEM(taramalı elektron mikroskobu) ile görsel olarak analiz edilmiştir. Standartlara uygun olarak yapılan testler sonucu elde edilen veriler, SPSS 22 paket programı kullanılarak 0.05 anlamlılık seviyesinde (%95 güven aralığında) istatistiki olarak değerlendirilmiştir.

Anahtar Kelimeler: Dijital Baskı, Pamuk, Süprem, Stiffness, Kıvamlaştırıcı.

CIVA KİRLİLİĞİ ve ÇEVRE ÜZERİNE OLAN ETKİLER

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ÖZET

Cıva zararsız maddelere bölünemeyen ve yok edilemeyen, oda sıcaklığında sıvı halde bulunan, rengi gümüş beyazı olan bir elementtir. Çevreye salındığında hava, su ve toprak arasında devir yaparak biçim değiştirmektedir. Cıva kirliliğinin insan sağlığına ve çevreye verdiği zararlar uzun zamandır bilinmektedir. Son yıllarda endüstriyel faaliyetler ve uzun vadeli atmosferik taşınımın birleşimi, topraktaki cıva konsantrasyonlarında sürekli bir artışa neden olmuştur. Cıva ile ilgili sorunlar insan faaliyetlerine bağlı olarak ortaya çıkmaktadır. İnsan faaliyetleri sonucunda ortaya çıkan cıva, çevreye salınmakta ve serbestçe dolaşmaya devam etmektedir. Dünya çapında ilgi çeken bir elementtir. Dünya Sağlık Örgütü (WHO) halk sağlığı açısından kaygı verici maddeleri tanımlamıştır. Bunlardan dört tanesi ağır metaldir. Cıva da bunlar arasında yer almaktadır. Sanayi sonrası insan faaliyetleri genellikle toprak ve tortudaki cıva içeriğini 3 ila 10 kat artırmıştır. Genellikle madencilik faaliyetleri ve endüstriyel üretim topraktaki cıva kirliliğinin ana nedenleridir. Doğal süreçler jeojenik ve biyojeojenik emisyonlardan oluşurken, antropojenik kaynaklar geçmişte madencilik ve metalurjinin baskın olmasından, esas olarak kömür yakılması ve altın madenciliğinden kaynaklanan mevcut emisyonlara doğru değişmiştir. Topraktaki aşırı cıva, tohum çimlenmesini, bitki hastalıklarını ve mikrobiyal aktiviteyi etkilemektedir. Toprakta bulunan cıva, bitki ve mikroorganizmaların yanı sıra besin zinciri, cilt teması, solunum yolu ve diğer maruz kalma kanalları yoluyla insan vücuduna girmekte ve insan sağlığını tehlikeye atmaktadır. İnsan ve çevresel maruziyet çoğunlukla düşük dozda ve kroniktir. Ancak çalışmaların büyük çoğunluğu akut ve yüksek düzeyde kronik etkiler üzerine yapılmıştır. Yüksek düzeyde maruz kalmanın sağlık üzerindeki tehlikeli etkileri yüzyıllardır bilinmektedir. Bu çalışmada cıvanın çevre ve insan sağlığı üzerine olan etkileri, cıva emisyonlarının ana kaynakları ve maruziyet yolları üzerinde tartışılmıştır.

Anahtar Kelimeler : Cıva, çevre, halk sağlığı

SIFIR ATIK PRENSİBİ ve FAYDALARI

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ÖZET

Gelişmekte olan ülkelerde hızlı kentleşme ve artan kaynak kullanımı nedeniyle çevre sorunları daha da artmaktadır. Atık kelimesi normalde çevremizde yeniden dönüştürülmesi, yeniden kullanılması, azaltılması ve hatta mümkünse ortadan kaldırılması gereken istenmeyen maddeleri vurgulamaktadır. Hızlı nüfus artışı, endüstrileşme ve kentleşme ile birlikte atık sorunları ortaya çıkmış giderek de artmaktadır. Ekonomik büyümenin sürdürülebilmesi için üretim şarttır. Elektronik eşyalar, imalat hurdaları, atılmış inşaat malzemeleri, günlük kullanımlar sonucu ortaya çıkan maddeler vb. gibi büyük miktarda atık her geçen gün üretilmekte ve bunların arıtılması gerekmektedir. Atık üretim oranı çok hızlıdır ve çok geçmeden uygun atık depolama sahalarının bulunmasının yönetilmesi zor hale gelecektir. Atıkların önemli ölçüde artabileceği açıkça anlaşılabilmektedir. Bu nedenle yeniden kullanım veya geri dönüşüm yoluyla atıklar kontrol edilir veya işlenebilir. Sıfır atık, atık üretiminin önüne geçmeyi amaçlayan, geri dönüştürülebilen atıkları geri dönüşüm sürecine dâhil eden, böylece enerji tasarrufu ve kaynakların korunumunu sağlayan sürdürülebilir bir çevre politikasıdır. Sıfır atık terimi, hem üreticileri hem de tüketicileri, harcamalarını azaltmanın yanı sıra daha iyi bir dünya yaratmaya yardımcı olmak amacıyla sürdürülebilir yaklaşımlar benimsemeye sürekli olarak teşvik etmektedir. 1970'lerden bu yana, dünya çapında birçok ülke, bölge ve şehir, vatandaşlar ve endüstriler arasında çöp depolama alanlarından ve yakma işlemlerinden uzaklaşmayı, atıkların en aza indirilmesini, kompostlaştırmayı, yeniden kullanımı ve geri dönüşümü teşvik etmek ve döngüsel ekonomiyi ilerletmek için bir sıfır atık stratejisi benimsemiştir. Sıfır atık prensibinin faydaları, atık depolama alanlarından tasarruf sağlamakla birlikte, hava kirliliği sorununun önüne geçebilmekte, israfı engelleyerek maliyetleri düşürmekte, ekonomik kazanç sağlamakta, çevre koruma bilinci ve duyarlı tüketici duygusu aşılamaktadır. Bu çalışmada sıfır atık prensibi ve sağladığı faydalar anlatılmıştır.

Anahtar Kelimeler: Sıfır atık, çevre, sürdürülebilirlik

A GENERAL EVALUATION ON TOWN BASED DEVELOPMENT PLANS ACCORDING TO THE TOPOGRAPHICAL CONDITION, ARDANUÇ EXAMPLE

TOPOĞRAFYA DURUMUNA GÖRE KASABA BAZLI İMAR PLANLARI ÜZERİNE GENEL BİR DEĞERLENDİRME, ARDANUÇ ÖRNEĞİ

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Abstract

Zoning plans mean the most efficient and orderly use of land. The rate of human population living on the planning land is directly related to the topographic condition of the land. Some cities, towns or towns are built on areas such as plains, plateaus or valleys. While the topographical condition of this land is a flat area, the route to be passed is the route to be passed, while in settlements between mountains such as valleys, planning is carried out along the stream route such as a stream, stream or river. Ardanuç Town of Artvin City is a town with a population of around 10-15 thousand, formed from a deep valley along a river. The development plans of this town that will meet the needs of this population were generally evaluated from a technical perspective, and especially in terms of topography, all development plan legends and features along the northwest and southeast of the river route were tried to be examined with general plan examples.

Keywords: Town development plan, topography, Ardanuç

Özet

İmar planları arazinin en verimli ve düzenli şekilde kullanılması anlamına gelir. Planlama kara parçası üzerinde yaşayan insan nüfus oranı ile arazinin topoğrafik durumu doğrudan ilintilidir. Kimi şehir ve kasabalar ya da beldeler ova, plato ya da vadi gibi alanlar üzerine kurulur. Bu arazinin topoğrafik durumu, düzlük alan ise geçirilecek yol güzergahı olurken, vadi gibi dağlar arasında yerleşim yerlerinde ise dere, çay ya da nehir gibi akarsu rotası boyunca planlama işlemi yapılmaktadır. Artvin Şehrinin Ardanuç Kasabası da bir nehir boyunca derin bir vadiden takiben oluşmuş nüfusu 10-15 bin civarında seyreden bir kasabadır. Bu kasabanın bu nüfusun ihtiyacını karşılayacak imar planları genel olarak teknik bir bakışla değerlendirilmiş ve özellikle topoğrafya olarak akarsu rotasının kuzeybatı ve güneydoğu boyunca tüm imar plan lejant ve özellikleri genel plan örnekleriyle irdelenmeye çalışılmıştır.

Anahtar Kelimeler: Kasaba imar planı, topoğrafya, Ardanuç

KENT TASARIMINDA İMAR PLANLARININ GÜNCELLENMESİNE YÖNELİK BİR DEĞERLENDİRME

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ÖZET

Gezegenimizin korunması amaçlı ekolojik yaşam, sürdürülebilirlik, iklim değişikliğinin getirdiği doğal afetlere ve salgınlara karşı korunaklı yerleşim tasarımları ve tüm bu konulardan etkilenerek gelişen yeni kent modelleri gibi önemli akımlar, kentsel sorunların çözümünde de etkin olmaktadır. Açıktır ki, kentlerin geleceğini belirleyen kent tasarımının önemi, imar planlaması anlayışının da güncellenmesi gereğini işaret etmektedir. Dolayısıyla, kalkınma planlarından başlayarak, birbirlerine bir üst plan olarak bağımlı olan bölge planları, metropoliten alan nazım planları, çevre düzeni planları ve imar planları kararlarının, günümüz gelişmeleri göz önüne alındığında, hangi öncelikleri taşıyacağının önemi giderek artmaktadır. Kent tasarımının, mevzuattaki yaptırımı olabilen her ölçekteki planlar içinde, özellikle uygulama veren imar planlarının, kentlerin yaşamını şekillendirdiği açıktır. Bu nedenle, imar planlarının güncel gelişmeleri yansıtabilmesi, yapım aşamalarının da güncellenmesini gerektirir.

Bu çalışmada onanlı imar planları örneklerinin incelenmesi sonucunda, günümüz yaklaşımları ve gelişmeleri göz önüne alınarak plan yapım aşamalarındaki adımların değerlendirilmesine dayalı bir takım güncel gereksinimler ortaya konmaktadır. Sonuç olarak da vurgulanması gereken ve eksikliği belirlenen yeni plan yapım aşamalarına ait genel yorum ve önerilere yer verilmektedir.

Anahtar Kelimeler: İmar Planı Yapımları, Plan Yapım Aşamaları, Sürdürülebilir Planlama Yaklaşımları, Planların güncellenmesi.

AN EVALUATION ON UPDATE OF ZONING PLANS IN URBAN DESIGN

ABSTRACT

Important trends such as ecological living, sustainability for the protection of our planet, sheltered settlement designs against natural disasters and epidemics brought about by climate change and new city models that are influenced by all these issues are also effective in solving urban problems. Clearly, the importance of urban design, which determines the future of cities, indicates the need to update the understanding of development planning. Therefore, starting

from development plans, the importance of which priorities will be given to regional plans, metropolitan area master plans, environmental plans and zoning plans, which are dependent on each other as a higher plan, is increasingly important, considering today's developments. Consequently, in order for zoning plans to reflect current developments, the stages of the plan making process also need to be updated.

In this study, as a result of examining the samples of approved development plans, a number of current requirements are put forward, based on the evaluation of the steps in the plan making stages, taking into account today's approaches and developments. As a result, general comments and suggestions regarding the new plan making stages that need to be emphasized and whose deficiencies have been identified are included.

Key Words: Development Plan Preparations, Plan Making Stages, Sustainable Planning Approaches, Updating of Plans.

YOZGAT MENEKŞE EVLERİ KENTSEL DÖNÜŞÜM DENEYİMİ

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ÖZET

Kentsel dönüşüm kavramı 1950'li yıllarda sanayileşme ve kentleşmenin hız kazanmasıyla birlikte oluşan kentlerin düzensiz ve sağlıksız yer seçimlerinden meydana gelen ve risk oluşturup yaşam kalitesini düşüren konut alanlarının yeniden dönüştürülerek sağlıklaştırılması amacıyla ortaya çıkmış bir kavramdır. Günümüzde hala uygulanan dönüşüm projeleri köhneleşmiş yıpranmış yapıların oluşturacağı riskleri en aza indirmek ve afet riski taşıyan alanlardaki konut yerleşimlerinde ki riskleri ortadan kaldırmaya yönelik çalışmalar yapmayı hedeflemektedir. Dönüşüm projeleri kentin sosyo-kültürel, ekolojik ve ekonomik boyutlarıyla birlikte ele alınmalıdır. Gerekli koruma kanunları ile birlikte yürütülmeli, kent kimliğini kaybetmiş alanlara kent kimliği yeniden kazandırmalı ve yerel halkın refahını sağlamalıdır. Ülkemiz de son zamanlarda önem kazanmaya başlamış dönüşüm projelerinin asıl dayanağı 6306 sayılı "Afet Riski Altındaki Alanların Dönüştürülmesi" hakkındaki kanun olarak gösterilmektedir. Dönüşüm projeleri bu kanun nezdinde yapısal veya alansal olarak yapılabilmektedir. Kanunun Uygulama Yönetmeliğinde idari yapılanmada rol alabilecek yönetim yapısı, belediye ve mücavir alan sınırları içinde belediyeler, bu sınırlar dışında il özel idarelerini, büyükşehirlerde büyükşehir belediyeleri, Bakanlık tarafından yetkilendirilmesi hâlinde büyükşehir belediyesi sınırları içindeki ilçe belediyeleri olarak sınırlandırılmıştır. Uygulama alanında dönüşüm projesi gerçekleştiren kurumlar; Bakanlık, idare ve Toplu Konut İdaresi Başkanlığı'dır.

Yozgat Menekşe Evler, 1966 yılında temeli atılan ve 1972 yılında açılışı yapılan Yozgat Tekel Bira Fabrikası'nın çalışanları tarafından konut ihtiyacına yönelik yapılmış ve günümüze kadar varlığını sürdürmüş kooperatif yapılardır. Yaklaşık 40 yıllık olan bu yapılar zaman içerisinde işlevselliğini yitirmiş, yıpranmış ve çöküntü bir alan haline gelmiştir. Bu çalışmada, 6306 sayılı Afet Riski Altındaki Alanların Dönüştürülmesi Hakkındaki Kanun kapsamında 07.04.2020 tarih 2379 sayılı Cumhurbaşkanı Kararı ile "Riskli Alan" olarak ilan edilen Menekşe Evler Kentsel Dönüşüm alanının proje süreci irdelenecektik. Kentin merkezi noktalarından birinde yer seçen bu yerleşimin kentsel dönüşüm sonucunda kentte kattığı artı ve eksi yönlerinin saptanması, sosyo-kültürel, ekolojik ve ekonomik boyutlarının irdelenmesi amaçlanmaktadır.

Anahtar Kelimeler: Kentsel dönüşüm, Yozgat Menekşe Evleri, Kentsel Dönüşüm Boyutları

KENTSEL DÖNÜŞÜMÜN KAVRAMSAL ŞEMASI

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ÖZET

Sanayileşmenin kentlerde oluşturduğu istihdam olanakları ve tarıma dayalı üretime kıyasla daha az insan gücüne dayalı iş türleri, kırdan kente büyük göçlere sebebiyet vermiştir. Kentlerde, nüfusun hızlı ve yoğun bir şekilde artması beraberinde birçok soruna yol açmıştır. Bunlardan en önemlisi barınma ihtiyacına yönelik konut yetersizliğidir. Bu soruna çözüm olarak sağlıksız, rastgele yer seçmiş, hiçbir tasarım kriterine yer verilmeden ve düşünülmeden yapılmış konut alanları; altyapı çalışmaları veya yerleşilebilirlik kriterleri hesaba katılmaksızın yerleştirilmiştir. Zamanla nüfusun daha fazla artması kentsel saçaklanmaların ve yasadışı gelişen konut alanlarının meydana gelmesine ve büyümesine sebep olmuştur. Günümüzde hala bu dönemin izlerini taşıyan yapılaşmalar var olmakla beraber zamanla eskimiş, köhneleşmiş ve işlevlerini kaybetmiş konut alanlarının kent dokusuna verdiği zarar ve yaşam kalitesine olumsuz etkileri gözle görülür ölçüdedir.

Kentsel dönüşüm olgusu, bu sorunların tamamına çözüm bulabilmek amacıyla politikalar üretmek ve kentin bu köhneleşmiş çöküntüye uğramış, bozulmuş ya da bu duruma yüz tutmuş bölgeleri yenilemek ve kente kazandırmak amacıyla ortaya çıkmıştır. Kentsel dönüşüm sürecinde, proje alanının doluluk-boşluk oranlarının değerlendirilerek yenilenmesi, afet riski taşıyan alanların belirlenmesi, mevcut ve yeni yapılacak yapılara ilişkin kararların alınması, korunacak yapılara ilişkin koruma kriterlerinin saptanması, ulaşım ağının düzenlenmesi, sosyal profile ilişkin politikaların belirlenmesi ve işlevselliğinin yeniden canlandırılması kentsel refah için dikkat edilmesi gereken en önemli unsurlardır. Kentsel Dönüşüm uygulamaları kentin sosyo-kültürel, ekonomik, yasal/yönetsel ve ekolojik yapısıyla birlikte ele alınarak uyumlu ve birbirleriyle dengeli gelişmelidir. Bu çalışmada kentsel dönüşüm kavramı, kentsel dönüşümün ortaya çıkışı, gelişimi ve kentsel dönüşüm ilkeleri doğrultusunda uygulama türleri irdelenecektir.

Anahtar Kelimeler: Kentsel Dönüşüm, Kentsel Dönüşüm Modelleri, Kentsel Dönüşümün Temel İlkeleri

FORECASTING SIGNIFICANT WAVE HEIGHT: COMPARATIVE ANALYSIS OF XGBoost AND WAVELET-XGBoost MODELS

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ABSTRACT

This research presents an investigation into the predictive efficacy of stand-alone XGBoost and wavelet-enhanced XGBoost (W-XGBoost) models for significant wave height (SWH) data acquired from two Pacific Ocean monitoring stations, 46059 and 46026, exhibiting varying depths of 4640 meters and 55 meters, respectively. These models are assessed for their forecasting capabilities across multiple time intervals ranging from 1 to 12 hours into the future. Leveraging wavelet decomposition, this study discerns deterministic and stochastic SWH patterns, with deterministic patterns capturing low-frequency components and stochastic patterns representing high-frequency content within the SWH data. Performance evaluation metrics, mean-squared error (MSE), Coefficient of Efficiency (CE) and mean absolute error demonstrate the superiority of W-XGBoost over XGBoost algorithm. Visual assessments using scatter plots show that W-XGBoost aligns more closely with observed data compared to XGBoost, indicating its superior predictive precision. Forecasting SWH remains challenging due to the complexities of wave generation. However, the study highlights the effectiveness of W-XGBoost in enhancing predictive accuracy, particularly in moderate time frames and diverse oceanic conditions, suggesting its potential in advancing predictive modeling in oceanography.

Keywords : Significant wave height, Wavelet transform, XGBoost

KONUT BİNALARINDA ÇEŞİTLİ FORMLARDA MİKROMİSİT MANTARLARININ NEDEN OLDUĞU HASTALIKLARIN İNSAN SAĞLIĞINA ETKİSİ

IMPACT OF DISEASES CAUSED BY MICROMYCETE FUNGI IN RESIDENTIAL BUILDINGS IN VARIOUS FORMS ON HUMAN HEALTH

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Özet

Bilimsel makalede araştırma konusu olarak farklı yerleşim alanlarında inşa edilen konut komplekslerinde, tarım ürünlerinin üretildiği farklı alanlarda ve aynı zamanda biyoteknolojik işletmelerde çalışan kişiler arasında ele alınmıştır. Yapılan mikolojik analizler, konut binalarının farklı odalarından hava, toz ve diğer nesnelerden alınan numuneler esas alınarak gerçekleştirildi. Araştırma sırasında patojenik mantarların neden olduğu hastalıkların aslında vücutta meydana gelen patolojik süreçler olduğu gösterildi. Patojenik mikromisetlerin vücuda girme yollarından birinin deri olduğu anlaşıldı. Ancak patojenik mikromisetler her insanın cildine yerleşemez. Böylece patojen mantarlar o kişinin cildine yerleşir ve vücutta hem anatomik hem de fonksiyonel yani bağışıklık ve endokrin bozukluklar meydana gelir. Yani bu tür kişilere mikoz kolaylıkla bulaşır. Bu hastalığa esas olarak Aspergillus, Mucor ve Candida cinslerinin daha aktif ve daha yeterli temsilcileri neden olur. Fırsatçı patojenik mantarlar olarak adlandırılan bu mikromisetlerin virülansı da zayıftır.

Çok sayıda çalışmanın sonuçlarının analizi sonucunda mantarların sadece bitki ve hayvanlarda çeşitli hastalıklara neden olmadığı, aynı zamanda insanların bağışıklık sistemini zayıflatabilecek çeşitli hastalıkların da "nedeni" olduğu ortaya çıktı. Faaliyetlerinin önlenmesi için mikromisetlerin öncelikle yaşadıkları, çalıştıkları, dinlendikleri ve çeşitli nedenlerle belirli bir süre kaldıkları yerler başta olmak üzere bulundukları her yerde kapsamlı bir şekilde incelenmesi önemlidir. .

İnsan vücudunda çeşitli kökenlerden hastalıklara neden olan patojenik mikromisetlerin potansiyel evrensel yeteneklerinin genetik uzmanlıklarıyla ne ölçüde ilişkili olduğunun moleküler düzeyde yapılan araştırmalarla netleştirilmesi gerekmektedir. Bu, gelecekteki araştırmalarımızın ana hedeflerinden biri olacaktır. Sorunun karmaşıklığı dikkate alınsa bile sorunun çözümüne farklı bilimsel yönlerden yaklaşmak daha doğru olacaktır.

Anahtar kelimeler: hastalıklar, mikromiset mantarları, konutlar, patojen, mikozlar

Abstract

In the scientific article, as an object of research, it was taken among people working in residential complexes built in different residential areas, in different fields where agricultural products are produced, and at the same time in biotechnological enterprises. The conducted mycological analyzes were carried out on the basis of samples taken from air, dust and other objects from different rooms of residential buildings. In the course of research, it was shown that diseases caused by pathogenic fungi are actually pathological processes occurring in the body. It became known that one of the ways of pathogenic micromycetes entering the body is the skin. But pathogenic micromycetes cannot settle on the skin of every person. Thus, pathogenic fungi settle on the skin of that person, so that both anatomical and functional - i.e. immune and endocrine disorders occur in the body. Namely, such people are easily infected with mycosis. This disease is mainly caused by more active and more adequate representatives of Aspergillus, Mucor and Candida genera. These micromycetes, called opportunistic pathogenic fungi, also have poor virulence.

As a result of the analysis of the results of numerous studies, it became clear that fungi not only cause various diseases in plants and animals, but they are also the "cause" of various diseases that can weaken the immune system of humans. In order to prevent their activity, it is important to comprehensively study micromycetes in every place where people are, first of all, where they live, work, rest, as well as the places where they stay for a certain period of time for various reasons.

To what extent the potential universal capabilities of pathogenic micromycetes, which cause diseases of various origins in the human body, are related to their genetic specializations, it is necessary to clarify with research conducted at the molecular level. This will be one of the main goals of our future research. Even if the complexity of the problem is taken into account, it would be more correct to approach the solution of the problem from different scientific directions.

Key words: diseases, micromycete fungi, residences, pathogen, mycoses

CK YÜKSEKLİĞİ:ÜÇ OLGU SUNUMU

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ÖZET

Kas ağrısı, güçsüzlüğü veya miyopati düşünülen hastalarda laboratuvar tetkiki değerlendirilmesinde kreatin kinaz (CK) seviyesi oranları önemli yer tutmaktadır. CK yüksekliği saptanan hastaların şikâyeti, öyküsü ve fizik muayene bulguları bütüncül olarak değerlendirilmelidir. Hastada spesifik bir hastalık bulgusu olmaması veya günlük yaşamı etkilemeyen nonspesifik şikayetleri olması halinde hastanın öyküsünde egzersiz-fiziksel aktivite, geçirilmiş enfeksiyon mutlaka sorgulanmalıdır. İleri inceleme Nöromüsküler olmayan hastalıklar-bozukluklar (Cerrahi, endokrinolojik, nefrolojik, metabolik, kardiovasküler ve viral hastalıklar, makro CK, kas hasarı, maligniteler, bazı ilaçlar, metabolik bozukluklar) ve nöromüsküler hastalıklar (Musküler distrofiler, metabolik ve mitokondriyal kas hastalıkları, inflamatuar miyopatiler ve konjenital
hastalıklar) olarak iki temel başlıkta sınıflandırılabilir. Üst solunum yolu enfeksiyonları (ÜSYE) etiyolojisinde birçok viral ajan olmakla birlikte influenza ve respiratuar sinsityal virüs yaygın viral etkenlerden iki tanesidir. ÜSYE'ye bağlı çocukluk çağı selim myozitinde kas ağrıları ile klinik prezente olan yüksek CK seviyeleri görülebilmektedir. Bacak ağrısı, yürüyememe şikayetleri tarafımıza başvuran influenza ve respiratuar sinsityal virüs enfeksiyonu sonrası enfeksiyon ile ilişkili myozit tanısı alan 2 olgumuz ve ağır fiziksel aktivite sonrası egzersiz ile ilişkili myozit tanısı alan 1 olgumuzun sunulması amaçlanmıştır. Yüksek CK düzeylerine rağmen, uygun hidrasyon ve yakın klinik takip ile böbrek yetmezliği gelişmemiş ve takiplerinde normal CK düzeyleri görülmüştür.

Anahtar Kelimeler: Kreatin Kinaz, Egzersiz, ÜSYE, Myozit

BOY KISALIĞI VE HASHİMATO TİROİDİTİ: OLGU SUNUMU

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ÖZET

Tiroid bezinin otoinflamasyonu neticesinde ortaya çıkan hashimato tiroiditi; edinsel hipotiroidinin genç bireylerde en sık nedeni olarak kabul görmektedir. Tiroid bezinin otoimmün lenfosittik harabiyetine bağlı olarak hastalar hipertiroidk, ötiroidik veya hipotiroidik olabilirler. Hashimato tiroidinde nihai son hipotiroididir. Çocuklarda ölçülen boy uzunluğu cinsiyet ve yaşa göre 3 persentil ve -2SDS altında ise boy kısalığı tanısı almaktadır. Çocukluk çağında boy kısalığı vakalarının çoğunluğu yapısal veya ailesel boy kısalığı olup normalin varyantlarıdır.

Herhangi bir kronik hastalık öyküsü olmayan ve boy kısalığı şikâyeti ile tarafımıza başvuran ve takvim yaşı 11 yıl olan hastada boy kısalığı ve trunkal obesitesi olduğu saptandı. Yapılan fizik muayenesinde vital bulguları stabil saptandı, donuk bakışa sahipti, el sırtı ve pretibial bölgede +1 gode bırakan ödemi mevcuttu. Bakılan Tanner pubertal evrelemesine göre evre1 olduğu saptandı. Diğer sistem muayenelerinde özellik saptanmadı. Bakılan laboratuvar tetkiklerinde; TSH:>100 uIU/mL (N:0.6-4.1), ft4:<0.40 (N:0.7-1.4) Tiroid Peroksidaz:727 IU/mL (N:0-5.6), AST:77 (N:0-41), ALT:91 (N:0-40), Total kollesterol: 235 (N:<200), LDH:495 (N:120-300). Bakılan diğer tetkiklerde özellik saptanmadı.

Radyolojik incelemede kemik yaşı 7 yaş olarak saptandı. Ultrasonografik incelemelerinde; tiroid normal lokazisyonunda, parankim ekojenitesi azalmış, diffüz heterojen olduğu raporlandı. Hepatobilier değerlendirmede özellik saptanmadı, perikardial efüzyon saptanmadı. Hastamız hashimato tiroididi-boy kısalığı tanısı kondu ve kademeli arttırılması planlanarak 25 mcg/g Levatiroksin tedavisi başlandı. 2-3 haftalık takiplerinde TSH, Ft4 düzeylerine göre ilaç

dozu ayarlandı. Takiplerinde ödem bulgusunun kalmadığı, daha aktif olduğu, kilo kaybının olduğu görüldü. Hastanın takip ve tedavisine devam planı yapıldı.

Öyküsünde farklı sebeplerden dolayı birçok sağlık kuruluşuna başvuran hastamızın mevcut hastalığının gözden kaçması açısından sunulması ve boy kısalıklarının dikkatlice ele alınması gerekliliğine vurgu yapılmak istenmiştir.

Anahtar Kelimeler: Boy kısalığı, Hipotiroidi, Hashimato

HEMŞİRELİK VE MOBBİNG

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ÖZET

Mobbing, tüm mesleki sektörlerde meydana gelen olumsuz bir olgudur. Çoğunlukla, bir kişinin altı ay boyunca haftada en az bir kez bir veya daha fazla kişinin olumsuz davranışına maruz kaldığı bir durum olarak tanımlanır. Sağlık alanında, hemşireler mobbing tarafından tehlikeye atılan en yüksek risk grubudur. Hemşirelerin mobbinge uğrama olasılığı diğer sağlık çalışanlarına göre 7 kata kadar daha yüksektir. Mezunlar ve iş deneyimi beş yıldan az olan hemşireler daha fazla mobbing riski altındadır. Aynı durum, iş deneyimi olan ancak işyeri değiştiren hemşireler için de geçerlidir. Mobbingin en yaygın nedenleri, işyerinde yetersiz iletişim, çalışma ekibindeki sorunlar ve yüksek iş yükü olarak kabul edilmektedir. Mobbingin psikolojik biçimi sağlık çalışanları arasında yaygındır. Mağdurlar karalama, aşağılama, haksız ve uzun süreli eleştiri, yeterlilik düzeylerinin altında yetkinlikler atama, ekipten dışlama ve görmezden gelmeye maruz kalmaktadır. Mobbinge maruz kalan çalışanlar daha yüksek düzeyde iş stresi yaşamakta, tükenmişlik sendromuna daha sık yakalanmakta ve daha fazla sağlık komplikasyonları göstermektedirler. En yaygın sağlık sorunları stres, baş ağrısı, çarpıntı, sırt ağrısı, eklem ağrıları, gastrointestinal sorunlar ve diğer psikosomatik rahatsızlıklardır. Artan yorgunluk, uykusuzluk, anksiyete ve depresyon da bildirilmiştir. Travma sonrası stres bozukluğu ile işyerinde mobbing oluşumu arasındaki bağlantı gösterilmiştir. Bir işyerinde mobbingin varlığı, yalnızca olumsuz davranışın hedef aldığı kişileri değil, orada bulunan herkesi olumsuz etkiler. Mobbinge tanık olanlar, mağdurlarla aynı sağlık sorunlarından muzdarip olabilirler. Bir işyerinde mobbingin varlığı ve sağlık üzerindeki etkileri, sağlanan bakımın kalitesi üzerinde daha fazla olumsuz etkiye sahip olabilir, sağlık çalışanlarının devamsızlığını ve iş değiştirmesini artırır. Öte yandan, iş memnuniyetini ve motivasyonu azaltmaktadır.

Anahtar Kelimeler: Hemşirelik, Mobbing, Zorbalık

COVİD-19 HASTALARINDA TEDAVİ YAKLAŞIMLARI, KULLANILAN İLAÇLAR ve YAN ETKİLERİ

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ÖZET

Günümüzde pandemiye neden olan enfeksiyon hastalığı "Yeni Tip Koronavirüs Hastalığı-2019" (COVID-19) olarak tanımlanmış ve sorumlu virüs Ciddi Akut Solunum Sıkıntısı Sendromuna neden olduğu için (Severe Acute Respiratory Syndrome, SARS) 'SARS-CoV-2' olarak adlandırılmıştır. Bu çalışma ile Covid-19 hastalarının tedavi yaklaşımında kullanılan ilaçların etki mekanizmalarını, olası yan etkileri ve görülme sıklığını gözler önüne sererek farkındalık oluşturma amaçlanmıştır. Bu amaç doğrultusunda Adana Seyhan Devlet Hastanesine başvuran 249 Covid-19 hastasına yüz yüze görüşülerek hazırlamış olduğumuz anket uygulanmıştır.

Katılımcıların 139'u kadın iken, 110'u erkek bulunmuştur. Görüşülen kişilerin 98'i ilkokul, 68'i lise, 24'ü ön lisans ve 64'ü lisans ve üzeri eğitime sahipti. Covid-19 izolasyonunu çoğunluk evinde geçirmiştir. Görüşülen kişilerde Covid-19'un en fazla görülen belirti bulgusu öksürük olmuştur ve tat / koku kaybı olduğu görülmüştür. Kronik hastalığa sahip 52 kişi bulunurken, 197 kişinin kronik herhangi bir hastalığı yoktur. Bireylerin 184'ü Covid-19 tedavisine yönelik ilaç kullanırken, 65'i herhangi bir ilaç kullanmamıştır. Favipiravir ve plaquenile ek olarak en fazla kullanılan tedavi yöntemleri kan sulandırıcı, ağrı kesici / ateş düşürücü ve antibiyotikler bulunmuştur.

Kullanılan tedavi yöntemleriyle yan etki gördüğünü söyleyen 107 kişi olurken, yan etki görmeyen 77 kişi bulunmuştur. En sık görülen yan etki (%26.3) bulantı / kusma olmuştur. Yan etki gördüğünü söyleyenlerin çoğunluğu kullanmaya devam etmiştir. Araştırmamıza katılan 97 kişi bitkisel tedavi yöntemi kullanmış en çok tercih edilen nane-limon olmuştur. Araştırmamız kesitsel bir araştırma olduğu için tüm topluma genellenmesi doğru olmayacaktır. Her geçen gün Covid-19 tedavi yöntemleri ile ilgili daha çok araştırmaya ihtiyaç duyulmaktadır.

Anahtar Kelimeler: Covid-19, Covid-19 tedavisi, Yan etkiler

Treatment Approaches, Medications Used and Side Effects in Covid-19 Patients

ABSTRACT

Today, the infectious disease that causes the pandemic has been defined as "Novel Coronavirus Disease-2019" (COVID-19), and the responsible virus has been named 'SARS-CoV-2' because it causes Severe Acute Respiratory Distress Syndrome (Severe Acute Respiratory Syndrome, SARS). With this study, it is aimed to raise awareness by revealing the mechanism of action, possible side effects and incidence of drugs used in the treatment approach of Covid-19 patients. For this purpose, a face-to-face interview was applied to 249 Covid-19 patients who applied to Adana Seyhan State Hospital.

While 139 of the participants were female, 110 were male. Of the interviewees, 98 had primary school, 68 had high school, 24 had associate degree and 64 had undergraduate or higher education. Most of them spent their covid-19 isolation at home. The most common symptom of Covid-19 in the interviewees was cough and it was seen that there was a loss of taste / smell. While there are 52 people with chronic diseases, 197 people do not have any chronic disease. While 184 of the individuals used drugs for the treatment of Covid-19, 65 did not use any drug. In addition to favipiravir and plaque, the most commonly used treatment methods were blood thinners, painkillers / antipyretics and antibiotics.

While there were 107 people who stated that they had side effects with the treatment methods used, 77 people who did not experience any side effects were found. The most common side effect (26.3%) was nausea/vomiting. The majority of those who said they experienced side effects continued to use it. 97 people who participated in our research used the herbal treatment method and the most preferred was mint-lemon. Since our research is a cross-sectional study, it would not be correct to generalize it to the whole population. There is a need for more research on Covid-19 treatment methods every day.

Keywords: Covid-19, Covid-19 treatment, Side effect

TAEKWONDO SPORCULARININ MÜSABAKA ESNASINDAKİ KENDİLERİYLE KONUŞMA DÜZEYLERİNİN İNCELENMESİ

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ÖZET

Yaptığımız bu çalışmanın amacı taekwondo sporcularının müsabaka esnasında kendileriyle konuşma düzeylerini incelemektir. Araştırmaya Türkiye'de taekwondo sporu ile uğraşan 158 bayan ve 171 erkek olmak üzere 329 sporcu gönüllü olarak katılmıştır. Örneklem büyüklüğü G* Power Analizi ile hesaplanmıştır. Analiz sonucunda güven düzeyi (α=0,05) %95 güç olacak şekilde en küçük örneklem büyüklüğü N=305 olarak belirlenmiştir. Araştırma, dahil etme kriterlerini karşılayan 329 katılımcı ile yürütülmüştür. Çalışmada nicel araştırma yöntemlerinden tarama modeli kullanılmış, katılımcılara demografik özellikleri (cinsiyet, yaş, sporculuk yaşı, öğrenim durumu, millilik durumu) araştırmacı tarafından oluşturulmuş ve Zervas, Stavrouve Psychountaki (2007) tarafından geliştirilen, Türkçe uyarlaması Engür (2011) tarafından yapılan "Kendinle Konuşma Envanteri" uygulanmıştır. Ölçek iki alt boyuttan ve toplamda on bir sorudan oluşmaktadır. Çalışmada kullanılan ölçeğin iç tutarlılığı Cronbach alpha (α) ile incelenmiş, kendinle konuşma düzeyi .948 olarak bulunmuştur. Elde edilen verilerin dağılımı incelenmiş ve normal dağılım gösterdiği tespit edilmiştir. Verilerin analizinde ikili grupların karşılaştırılmasında bağımsız gruplar T testi kullanılmıştır. İkiden fazla grupların karşılaştırılması tek yönlü varyans analizi ile yapılmıştır. Gruplar arasındaki farklılıkların tespiti için Hochberg's GT2 Post Hoc. Analizi yapılmıştır. İstatistikler SPSS 29.0.1.0 paket programıyla yapılmış ve yapılan tüm değerlendirmelerde istatistiksel anlamlılık düzeyi $p<0.05$ olarak kabul edilmiştir. Yapılan analiz incelemeleri sonucunda müsabaka esnasında erkeklerin bayanlara göre daha fazla kendileriyle konuştuğu, yaş ilerledikçe müsabaka içinde sporcuların kendileriyle konuşma düzeylerinin arttığı, lisanüstü eğitim alan taekwondocuların müsabakada kendileriyle konuşma düzeylerinin diğerlerinden daha fazla olduğu, sporculuk yaşı arttıkça müsabaka esnasında sporcuların kendileriyle daha fazla konuştukları ve milli olan taekwondo sporcularının milli olmayan sporculardan müsabaka esnasında daha fazla kendiyle konuştukları sonucuna ulaşılabilir. Müsabaka esnasında kendiyle konuşma düzeyleri yüksek düzeyde çıkan grupların müsabaka sırasında motivasyonel ve bilişsel olarak diğerlerinden daha sağlıklı olduğu söylenebilir.

Anahtar Kelimeler: Taekwondo, Sporcu, Müsabaka, Motivasyon, Kendinle Konuşma.

TAEKWONDO SPORCULARININ SPORCU BİLİNÇLİ FARKINDANLIK DÜZEYLERİNİN BAZI DEĞİŞKENLER AÇISINDAN İNCELENMESİ

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ÖZET

Çalışmamızın amacı taekwondo sporcularının sahip olduğu bazı özelliklerin bilinçli farkındalık düzeylerine etki edip etmediğini incelemektir. Araştırmaya Türkiye'de en az iki yıl müsabık olarak taekwondo sporu yapmış ya da devam eden 122 bayan ve 111 erkek olmak üzere 233 sporcu gönüllü olarak katılmıştır. Örneklem büyüklüğü G* Power Analizi ile hesaplanmıştır. Analiz sonucunda güven düzeyi (α=0,05) %80 güç olacak şekilde en küçük örneklem büyüklüğü N=200 olarak belirlenmiştir. Çalışmada nicel araştırma yöntemlerinden betimsel tarama modeli kullanılmıştır. Katılımcılara yöneltilen cinsiyet, yaş, sporculuk yaşı, öğrenim durumu, millilik durumları ile ilgili sorular araştırmacı tarafından oluşturulmuş ve Thienot ve ark. (2014) tarafından geliştirilen, Türkçeye uyarlaması Tingaz (2019) tarafından yapılmış olan Sporcu Bilinçli Farkındalık Ölçeği uygulanmıştır. Ölçek üç alt boyuttan ve toplamda on beş sorudan oluşmaktadır. Çalışmada kullanılan ölçeğin iç tutarlılığı Cronbach alpha (α) ile incelenmiş, farkındalık alt boyutu değeri .764 olarak, yargılamama alt boyutu.756 olarak, yeniden odaklanma alt boyutu .752 olarak bulunmuştur. Elde edilen verilerin dağılımı incelenmiş ve normal dağılım gösterdiği tespit edilmiştir. Verilerin analizinde ikili grupların karşılaştırılmasında bağımsız gruplar T testi kullanılmıştır. İkiden fazla grupların karşılaştırılması tek yönlü varyans analizi ile Hochberg's GT2 Post Hoc. Analizi yapılmıştır. İstatistikler SPSS 29.0.1.0 paket programıyla yapılmış ve yapılan tüm değerlendirmelerde istatistiksel anlamlılık düzeyi $p<0.05$ olarak kabul edilmiştir. Yapılan analiz incelemeleri sonucunda cinsiyet değişkenine göre farkındalık ve yeniden odaklanma alt boyutunda anlamlı fark bulunmazken yargılamama alt boyutunda bayanlar ve erkekler arasında anlamlı farklılık bulunmuştur. Yaş değişkeni incelendiğinde analiz sonuçlarında kendini yargılama alt boyutunda anlamlı farklılık olduğunu görüyoruz. Eğitim durumu değişkeni incelendiğinde gruplar arasında anlamlı fark bulunamamıştır. Spor yapma yılı analiz sonuçları incelendiğinde, tüm alt boyutlarda anlamlı farklılık olduğunu görüyoruz. Taekwondo sporcularının milli olup olmama değişkeni bilinçli farkındalık düzeyleri üzerinde anlamlı fark olmadığını görüyoruz. Verilerden yola çıkarak sporculuk yaşının yüksek olması ve deneyim sahibi olmanın taekwondo yapan sporcuların sporcu bilinçli farkındalık düzeylerine olumlu etkisi olduğu genel sonucuna ulaşılabilir.

Anahtar Kelimeler: Taekwondo, Sporcu, Bilinçli Farkındalık.

FENITROTHION INSECTICIDE PROMOTES GENOTOXICITY IN *ALLIUM CEPA* L.

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ABSTRACT

This investigation focused on the potential genotoxicity of fenitrothion, a widely used, low-cost insecticide, on *Allium cepa* L (onion). For the purposes of determining the genotoxic impact of fenitrothion on root meristem cells of *A. cepa* mitotic index value (MI), micronucleus formation (MN), and frequencies of chromosomal abnormalities (CA) were investigated. Four groups subjected to doses of 0 (tap water), 5, 10 and 20 µg/L fenitrothion were created and compared with each other. The MI decreased, MN formation increased, and CAs increased with increasing fenitrothion dosages. According to frequencies, the most frequent CAs in onion root cells caused by fenitrothion are: vagrant chromosome, sticky chromosome, fragment chromosome, vacuolated nucleus, unequal chromatin distribution, bridge, and reverse polarization. The results of this revealed the genotoxic effect of the insecticide fenitrothion on a model organism. Because FNT is revealed as a genotoxic pesticide, the current investigation has highlighted the necessity for more research on the dangers related to its usage.

Keywords: *Allium cepa* L., Chromosomal aberrations, Fenitrothion, Genotoxicity, Micronucleus, Mitotic index,

MERISTEMATIC CELL DAMAGES CAUSED BY HEXACONAZOLE FUNGICIDE IN *ALLIUM CEPA* L.

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ABSTRACT

In this study, the damage caused by the toxicity of hexaconazole fungicide on the root meristematic cells of *Allium cepa* L. was examined. Bulbs of *A. cepa* were rooted in aqueous solutions containing 750 µg/L, 1500 µg/L, and 3000 µg/L of hexaconazole in experimental groups, whereas the control group utilized tap water. At the end of the experimental period, the meristematic cell injuries caused by hexaconazole were assessed with the help of an examination of the cross-sections taken from each group. In the control group, no damage to the meristem cells of the root was seen. However, depending on the dosage, epidermal cell injury, thickened cortex cell wall, flattened cell nuclei, and thickened conduction tissue were observed in the hexaconazole-treated groups. In 3000 µg/L hexaconazole application, where the most intense damages occur, epidermis cell injury and flattened cell nuclei damage types are intense level, while thickened cortex cell wall and thickened conductive tissue damage types are moderate level. The results of the study clearly demonstrated that hexaconazole fungicide caused serious undesirable damage to the root anatomy of a non-target plant. The findings of this study will contribute to the literature that will guide the management and regulation of hexaconazole use in agricultural practices.

Keywords: *Allium cepa* L., Fungicide, Hexaconazole, Meristematic cell.

ASSESSMENT OF GENOTOXIC IMPACT OF THE SYNTHETIC FOOD ADDITIVE TARTRAZINE (E102) THROUGH COMET ASSAY

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ABSTRACT

Due to industrialization in the food industry and advances in food processing and processing technology, various food additives are used to improve the taste, color, consistency, quality and price of foods. One of these food additives is food dyes. tartrazine (E102), a colorant widely used in the food industry, is generally orange-yellow in color and is used in many food products to provide an aesthetic appearance to the consumer. This chemical component is used as a sweetener as well as its color additive properties. Tartrazine can be found in many ready-made food and pharmaceutical products, especially carbonated drinks, fruit juices, confectionery, baked goods, and ice cream. This chemical compound is preferred for its coloring properties as well as to increase the visual appeal of products and meet consumer expectations. It is necessary to elucidate the potential effects of such synthetic food additives to which people are exposed directly through foodstuffs in order to protect consumer health and ensure food safety. In this research, the genetic impact of tartrazine was explored utilizing *Allium cepa* L. as the test material. Bulbs of *A. cepa* L. (2n=16) sourced from a commercial market in Giresun province constituted the test materials. These bulbs were sorted into four distinct groups: one serving as the control and three undergoing treatment. The control group was subjected to tap water exclusively for a duration of 72 hours. The treatment groups were exposed to concentrations of tartrazine 10 mg/L, 25 mg/L, and 50 mg/L for the same 72-hour period. Following this exposure timeframe, the root tips cut to a length of 1 cm, were readied for assessment via the alkaline comet assay method. Subsequent to staining the prepared slides with ethidium bromide, fluorescence microscopy was employed for analysis. The evaluation of comets was conducted utilizing Comet Assay software version 1.2.3b (CaspLab) and the findings were expressed as arbitrary units, reflecting DNA damage scores across the groups. The outcomes revealed that the control group treated solely with tap water exhibited the least DNA damage, while the group

exposed to 50 mg/L tartrazine displayed the highest values. A direct correlation was observed between the degree of tartrazine application and the ensuing DNA damage score increase, with statistically significant differences among the groups ($p<0.05$). The results highlight the potential risks of long-term, high-level exposure to this synthetic food additive. The potential for tartrazine to cause DNA damage in cells is an important consideration when evaluating the effects of such synthetic compounds on human health. As a result, in order to protect public health and ensure food safety, the genotoxic potential of such compounds should not be carefully examined and the appropriate dose range that will not have genotoxic effects on humans should be determined.

Keywords: Tartrazine, genotoxicity, *Allium cepa*.

EVALUATING GENOTOXIC EFFECTS OF IMIDACLOPRID INSECTICIDE USING COMET ASSAY

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ABSTRACT

Imidacloprid, categorized as a neonicotinoid insecticide, exists as a colorless crystalline compound within the chloronitroguanidine group, showcasing a melting point at 143.8°C. It, classified as a systemic insecticide within the neonicotinoid family, attaches permanently to nicotinic acetylcholine receptors (nAChRs) present in the nervous system of insects, ultimately resulting in neuronal death. Imidacloprid applications encompassing leaf spraying, soil treatment, and seed treatment, have resulted in adverse impacts on ecosystem services. These practices have led to the unintended consequences of harming non-target organisms, notably valuable contributors to the economy like pollinators, honey producers, and beneficial insects supporting farmers. In this study, the genotoxic effects of imidacloprid were investigated using *Allium cepa* L. as the experimental model. Bulbs of *A. cepa* L. (2n=16) procured from a commercial market in Giresun province constituted the experimental samples. These bulbs were categorized into four distinct groups: one functioning as the control and three undergoing imidacloprid treatments. The control group underwent exposure to tap water over a span of 72 hours. The treatment groups were subjected to imidacloprid concentrations of 45 mg/L, 90 mg/L, and 180 mg/L, respectively, for an equivalent 72-hour period. After this exposure timeframe, the root tips, trimmed to a length of 1 cm, were prepared for evaluation using the alkaline comet assay. Upon staining the prepared slides with ethidium bromide, fluorescence microscopy facilitated the subsequent analysis. Assessment of comet formations was performed using Comet Assay software version 1.2.3b (CaspLab), and the results were quantified as arbitrary units, indicating DNA damage scores across the experimental sets. Although the control group showed no notable DNA damage, it was found that as the dose of imidacloprid increased in the treated groups, the level of DNA damage also rose and the most DNA damage

was observed in the imidacloprid application group at a dose of 180 mg/L. It was observed that there was a direct correlation between the imidacloprid application dose and the increase in DNA damage score and there were statistically significant differences between the groups ($p<0.05$). The obtained results emphasize the potentially harmful effects of imidacloprid on the environment and non-target organisms, including humans. Considering these findings, the evaluation of biocontrol methods instead of imidacloprid for pest management in agricultural production could be recommended.

Keywords: Imidacloprid, genotoxicity, *Allium cepa*.

GELECEĞİN GIDA GÜVENCESİ: SÜRDÜRÜLEBİLİR BESLENME

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ÖZET

Günümüzde artan nüfus, iklim değişikliği ve doğal kaynakların sınırlı olması, gıda sistemlerini daha sürdürülebilir bir yöne evrimleştirmek adına önemli bir zorunluluk ortaya koymaktadır. Gelecek yıllar boyunca dünyanın kaynaklarına zarar vermeden artan gıda talebinin ve sağlıklı beslenmenin nasıl sağlanacağı konusunda sorular hızla artış göstermektedir. Bu bağlamda, sürdürülebilir beslenme ve sürdürülebilir gıda sistemleri kavramı ön plana çıkmaktadır. Sürdürülebilir gıda, gıda üretimi ve tüketiminde çevresel, ekonomik ve sosyal etkileri dengeleyen bir yaklaşımı ifade etmektedir. Bu kapsamlı yaklaşım, mevcut ve gelecek nesillerin ihtiyaçlarını karşılamayı amaçlamakla birlikte, aynı zamanda doğal kaynakların sürdürülebilir bir şekilde kullanılmasını ve ekosistemlerin korunmasını hedeflemektedir. Sürdürülebilir gıda üretimi ve tüketimi, karmaşık bir dengenin içinde yer almakta ve bu bağlamda çeşitli disiplinler arası çözümleri gerektirmektedir. Bu çalışmada, sürdürülebilir gıda sistemlerinin bilimsel temelleri ve gelecekteki gıda güvenliği konuları ele alınmıştır.

Anahtar Kelimeler: Sürdürülebilir beslenme, Sürdürülebilir gıda sistemleri, Gıda güvenliği

FOOD SECURITY OF THE FUTURE: SUSTAINABLE NUTRITION

ABSTRACT

Today, increasing population, climate change and limited natural resources present an important necessity to evolve food systems in a more sustainable direction. Questions are rapidly increasing about how to ensure the increasing food demand and healthy nutrition without harming the world's resources in the coming years. In this context, the concept of sustainable nutrition and sustainable food systems comes to the fore. Sustainable food refers to an approach that balances environmental, economic and social impacts in food production and consumption. This comprehensive approach aims to meet the needs of current and future generations, but also to use natural resources in a sustainable manner and protect ecosystems. Sustainable food production and consumption is involved in a complex balance and requires various interdisciplinary solutions in this context. In this study, the scientific foundations of sustainable food systems and future food security issues are discussed.

Keywords: Sustainable nutrition, Sustainable food systems, Food security

FARKLI PASTÖRİZASYON NORMLARINDA ISITMANIN İNEK SÜTLERİNDE MAİLLARD REAKSİYON ÜRÜNLERİ OLUŞUMUNA VE RAF ÖMRÜNE ETKİSİ

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ÖZET

Farklı pastörizasyon normlarında ısıtmanın inek sütlerinde Maillard reaksiyon ürünleri oluşumuna ve raf ömrüne etkisinin tespit edilmesi hedeflenmiştir. 75 ºC -30 sn, 83 ºC-30 sn, 90 ºC-30 sn, MF (Mikro Filitrasyon) + 75 ºC- 30 sn ve 138 ºC- 4 sn (UHT) olmak üzere 5 farklı pastörizasyon normunda 3 ayrı deneme tamamlanmıştır. Söz konusu denemelerde üretim, paketleme ve raf ömrü boyunca alınan numuneler için planlanan Maillard Reaksiyonu ürünleri oluşumu göstergeleri olan Furosin miktarı, CML (Karboksymetillisin) ve 24 adet aminoasitin profil analizleri için ayrılan ve donuk olarak min. –40 ºC'de muhafaza edilen numunelerin analizleri Hacettepe Üniversitesi Gıda Mühendisliği Bölümü Laboratuvarı'nda gerçekleştirilmiştir. Gerçekleştirilen 3 denemenin furosin, aminoasit profil ve CML analizleri tamamlanmıştır. Furosin analizi için temin edilen örnekler asitle hidrolize edilip, katı faz ekstraksiyon tekniği ile temizlendikten sonra hidrofilik interaksiyon sıvı kromatografisi tekniği ile analiz edilmiştir. Dedeksiyon UV-Vis detektör (285 nm) yardımıyla gerçekleştirilmiştir. Aminoasit profil analizi için temin edilen örnekler asitle hidrolize edildikten sonra hidrofilik interaksiyon sıvı kromatografisi tekniği kullanılmıştır. Analiz sıvı kromatografisi- tandem kütle spektrometresi (LC-MS/MS) yardımı ile gerçekleştirilmiştir. Yapılan istatistiksel değerlendirmelerde; sıcaklık artışının raf ömrüne ciddi katkısı olduğu, sıcaklığın Maillard reaksiyon ürünlerinin oluşumuna neden olduğu, UHT işleminin en çok Maillard reaksiyon ürünlerini oluşturduğu, 75 ºC-30 sn ve 75 ºC-30 sn +MF ile en az Maillard reaksiyonu ürünleri oluşumunun görüldüğü gözlemlenmiştir. Raf ömrü süresi ve Maillard reaksiyon ürünleri oluşumu dikkate alındığında en ideal koşulların 75C +MF işlemi olduğu görülmektedir.

Anahtar Kelimeler: Süt, Pastörizasyon, Isısal Normlar, Maillard Reaksiyonu

$Pr(OTf)_3$ CATALYZED SYNTHESIS OF N-SUBSTITUTED ECAHYDROACRIDINE-1,8-DIONES

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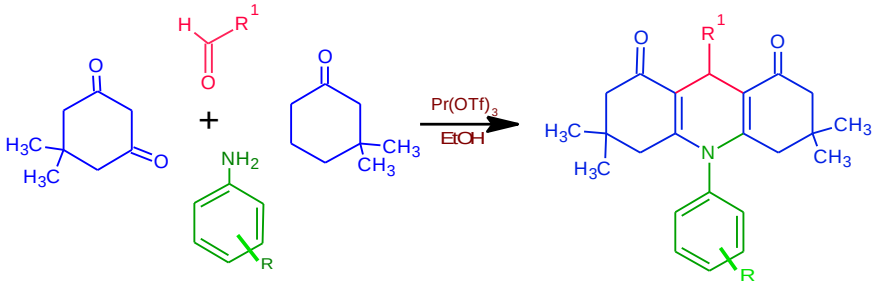
ÖZET

Acridinediones and their derivatives possess a wide range of pharmaceutical activities, including antimicrobial, antimalarial, antitumor, anticancer, antibacterial, fungicidal, and DNA binding properties. These derivatives have beenused in chemotherapy for the treatment of cancer and in the treatment of cardiovascular diseases, such as angina pectorisand hypertension. In addition, acridinediones exhibit important properties such as high fluorescence efficiency allowing them to be used as laser dyes[1].

In our studies the reaction between dimedone (2 mmol), substitutedbenzaldehyde (1 mmol), and aryl amine (or ammonium acetate) (1 mmol) was performed in traditional organic solvent, EtOH. The reaction mixture was stirred for 8h at 80°C to obtain of N-substituted decahydroacridine-1,8-dione. Firstly, a three-component one-pot system was performed in the presence of a catalyst, Praseodymium(III) trifluoromethanesulfonate, $Pr(OTf)_3$.

Then, 3,3,6,6-Tetramethyl-9,10-(substituted phenyl)-3,4,6,7,9,10-hexahydroacridine -1,8 (2*H*,5*H*)-dione acridine-dione compounds were synthesized with good yields by using the step-by-step reaction method.
Their structures were clarified by IR, NMR (^{1}H and ^{13}C) spectra.



Keywords: $Pr(OTf)_3$, acridine-dione, biological activity, one pot

This work was supported by Research Fund of the Yildiz Technical University. Project Number: FYL-2023-5608

[1] Sahiba N., Sethiya A., Soni J., Teli P., Garg A., Agarwal S., (2022), Journal of Molecular Structure 1268, 133676. doi.org/10.1016/j.molstruc.2022.133676

BİR OTOMOTİV YAN SANAYİİ İŞLETMESİNDE SİSTEM ANALİZİ VE KALİTE İYİLEŞTİRME

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ÖZET

Bir otomotiv yan sanayi işletmesinin, üretim hattının alüminyum şekillendirme bölümünde, gelen müşteri şikayetleri ve hurda ürün sayısının artması sebebiyle, üretim ekibiyle birlikte Sistem Analizi yaklaşımı ile mevcut durum ortaya konarak süreç detaylandırılmış, 5N1K ile sorun tanımlanmış, Balık Kılçığı diyagramı ile kırılma ve büküm hatalarına sebebiyet verebilecek kök nedenler araştırılmış, Pareto Analizi ile ay bazında kırılma oranı verileri incelenmiş ve hedef belirleme ile çalışma için termin verilmiştir. Temel sorunun, alüminyum boru bükmede ortaya çıkan çatlaklar ve kırılmalar olduğu görüldüğünden, buna sebep olan faktörlerin belirlenmesi ve gerekli aksiyonların alınması amacıyla; makinadaki son büküm hızı, alüminyumun sıcaklığı ve bekletme şartları değiştirilerek aynı ve farklı lotlarda deneme üretimleri yapılmıştır. Aynı lotlarda; sıcaklığın etkisi bulunmamış, son büküm sayısı iki yapılıp hızlar değiştirildiğinde kırılma gözlenmemiştir. Farklı lotlarda; bekletme şartlarının kırılmaya etki ettiği ve sıcaklığın yükseldikçe kırılmanın azaldığı görülmüştür. Sistem analizi temelli kalite iyileştirme çalışmaları sonucunda; mevcut sorun ve buna neden faktörler belirlenerek ve sorunun çözümü için gerekli aksiyonlar alınarak, ürün kalitesi standart hale getirilmiş ve alüminyum boru fire oranı % 12'den % 4,6'a indirilmiştir.

Anahtar Kelimeler : Sistem Analizi, Kaizen, Kalite İyileştirme Araçları

[1]Bu çalışma, danışmanlığını Kerem Ciddi'nin yaptığı, lisans öğrencisi Güllü Nur Süzen'in tez çalışmasından üretilmiştir. Başlıca yazarın mail adresi: kerem.ciddi@dpu.edu.tr

BAZ İSTASYONU KAYNAKLI ELEKTROMANYETİK KİRLİLİK ÖLÇÜMLERİNDE YAPILAN HATALAR VE DÜZELTME ÖNERİLERİ

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ÖZET:

Gelişen teknoloji ile her geçen gün hayatımızda daha uzun süre yer edinen iletişim cihazları genel olarak kablosuz haberleşme altyapısını kullanmaktadır. Bu sistemlerden sıkça kullanılanlar şunlardır; Wi-Fi olarak adlandırılan (Wireless Fidelity), GSM (Global System for Mobile), UMTS (Universal Mobile Telecommunications Service), LTE (Long Term Evolution), Bluetooth, DECT (Digital Enhanced Cordless Telecommunication), NFC (Near Field Communication). Tüm bu kablosuz sistemleri birbirinden ayıran ana unsur çalıştıkları frekans bantlarıdır. Dünyada ve buna paralel olarak genç bir nüfusa sahip ülkemizde de kablosuz haberleşme süreleri yıldan yıla artış göstermektedir. Günden güne artış gösteren mobil iletişimin sürdürülebilir bir şekilde sağlanabilmesi için mobil telefon operatörleri her geçen gün alt yapılarına yeni sistemler eklemektedirler. Artan iletişim trafiği ve bu trafiğin taşındığı kablosuz alt yapı sistemleri de yaşam alanlarında elektromanyetik kirliliği arttırmakta ve bu konu hukuki süreçlere yansımaktadır. Çalışma ile, hukuki süreçler içerisinde yaşam alanlarında yapılmış olan elektromanyetik kirlilik ölçümleri ve bu ölçümlerin daha doğru sonuçlar verebilmesi için öneriler sunulmuştur.

Anahtar Kelimeler: Elektromanyetik kirlilik, Elektromanyetik alan ölçümleri, Anlık ölçüm, Sürekli ölçüm ve izleme.

ERRORS MADE IN BASE STATION SOURCED ELECTROMAGNETIC POLLUTION MEASUREMENTS AND CORRECTION SUGGESTIONS

ABSRACT:

Communication devices, which have become a part of our lives day by day with developing technology, generally use wireless communication infrastructure. The most frequently used of these systems are as follows: So-called Wi-Fi (Wireless Fidelity), GSM (Global System for Mobile), UMTS (Universal Mobile Telecommunications Service), LTE (Long Term Evolution), Bluetooth, DECT (Digital Enhanced Cordless Telecommunication), NFC (Near Field Communication). The main factor that distinguishes all these wireless systems is the frequency bands in which they operate. Wireless communication times are increasing year by year in the world and, in parallel, in our country with a young population. To ensure sustainable mobile communication, which is increasing daily, mobile phone operators are adding new systems to their infrastructure every day. Increasing communication traffic and the wireless infrastructure systems that carry this traffic also increase electromagnetic pollution in living spaces, and this issue is reflected in legal processes. This study presents electromagnetic pollution measurements made in living spaces within the legal processes and suggestions for these measurements to give more accurate results.

Keywords: Electromagnetic pollution, Electromagnetic field measurements, Instantaneous measurement, Continuous measurement and monitoring.

ÇİZGİSEL GÖRÜNTÜ SENSÖRÜNDEN ALINAN VERİLERİN BİLGİSAYAR EKRANINDA GÖRÜNTÜLENMESİ

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ÖZET

Çizgisel görüntü sensörleri, hareketli cisimlerin satır tarama tekniği ile görüntülerini oluşturmak için kullanılan elektronik elemanlardır. Bu çalışmada tambur üzerine sarılı düzlemsel nesne üzerindeki görüntüler, çizgi görüntü sensörü ve ARM mikrodenetleyici kullanarak bilgisayara alınmış ve ekranda çizdirilmiştir. Tasarlanan devrede STM32F411-ARM mikrodenetleyici ve 500 aktif pikselli, 8.25 mm aktif bölge uzunluklu Toshiba TCD1103GFG çizgisel görüntü sensörü kullanılmıştır. Sensörün her piksel için üretmiş olduğu analog gerilim mikrodenetleyicinin analog sayısal dönüştürücü (analog-digital converter-ADC) ve doğrudan erişimli bellek (direct access memory-DMA) üniteleri vasıtasıyla sayısala dönüştürülmüş ve mikrodenetleyici belleğine kaydedilmiştir. Bellekteki bu verilerin bilgisayara transferi için STM32F411 mikrodenetleyicisinin USBFS (Full Speed USB) modülü kullanılmıştır. Bilgisayara gönderilen verileri okumak ve ekranda görüntülemek için Microsoft firmasının Visual Studio yazılım geliştirme aracının ücretsiz versiyonu olan “Community” ve yazılımı geliştirmek işleminde ise 100% OOP (Object Oriented Programming: nesne yönelimli programlama) destekleyen C# dili tercih edilmiştir. Grafiksel arayüzlü görsel uygulamalarda çok zengin komponentler barındıran C# yazılım dili, alınan görüntüyü ekranda göstermek için PictureBox (resim kutusu) arabirim programını kullanmaktadır. Tambura sarılı yüzeysel cismin üzerindeki 2D resim göstermek için C# programında windows formu araç çubuğu menüsü hazırlanmıştır. Hedef nesneyi hareketini sağlayan tambur, DC motor ile döndürülmektedir. DC motorun hız kontrolü mikrodenetleyici tarafından üretilen PWM işareti ile sağlanmaktadır. Bir potansiyometre ile motorun hızı ayarlanmaktadır. Sonuç olarak tambur üzerine sarılmış olan düzlemsel cisim görüntüleri çizgisel görüntü sensörü ve mikrodenetleyici tarafından alınmış ve başarılı şekilde bilgisayar ekranında çizdirilmiştir.

Anahtar Kelimeler : ARM, C# programlama, Çizgisel görüntü sensörü, STM32F411, TCD1103GFG.

DISPLAYING THE DATA RECEIVED FROM THE LINEAR IMAGE SENSOR ON THE COMPUTER SCREEN

ABSTRACT

Line image sensors are electronic elements that create images of moving objects using the line scanning technique. In this study, the images on the planar object wrapped on the drum were taken to the computer and drawn on the screen using a linear image sensor and ARM microcontroller. The circuit designed used the STM32F411-ARM microcontroller and Toshiba TCD1103GFG linear image sensor with 500 active pixels and an 8.25 mm active zone length. The analog voltage produced by the sensor for each pixel was converted to digital by the analog-to-digital converter (ADC) and direct access memory (DMA) units of the microcontroller and recorded in the microcontroller memory. The USBFS (Full Speed USB) module of the STM32F411 microcontroller was used to transfer this data in the memory to the computer. "Community," the free version of Microsoft's Visual Studio software development tool, was used to read the data sent to the computer and display it on the screen. The C# language, which supports 100% OOP (Object Oriented Programming), was used to develop the software. C# software language, which contains very rich components in visual applications with a graphical interface, uses the Picture Box interface program to display the received image on the screen. A Windows form toolbar menu was prepared in the C# program to display the 2D image on the superficial object wrapped in a drum. The drum that moves the target object is rotated by a DC motor. Speed control of the DC motor is provided by the PWM signal produced by the microcontroller. The speed of the motor is adjusted with a potentiometer. As a result, the images of the planar object wrapped on the drum were taken by the linear image sensor and microcontroller and were successfully drawn on the computer screen.

Key Words: ARM, C# programming, Linear image sensor, STM32F411, TCD1103GFG

WAVE POWER PREDICTION WITH OPTIMIZED LEARNING ALGORITHMS BASED ON NEURAL NETWORK STRUCTURES

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Abstract

Renewable energy resources, such as solar, hydrogen, wave, wind, and tidal energy, are crucial to sustainability and meeting needs. Significant parameters such as wave height, wave period, etc. are crucial to coastal engineering and the development and functioning of wave energy converters. This paper proposes a prediction model for the wave power model with optimized learning algorithms based on neural network structures. The extreme learning machine (ELM) and artificial neural network (ANN) learning algorithms are constructed for the prediction of wave power (WPower). The optimal weights and number of hidden neurons of the learning algorithms are obtained with Particle Swarm Optimization (PSO) method. A set of analyses for optimized-ANN and optimized-ELM algorithms are carried out in comparison with the original ANN and ELM methods. Besides, various performance criteria such as Mean Square Error (MSE), Root Mean Square Error (RMSE), SI (Similarity Index), BIAS, and computational time have also been utilized to evaluate wave power prediction. Optimized-ELM is better than the other prediction method, with a 0.001 value of RMSE, 0.031e-5 value of MSE, 1.748 value of SI, and 2.109e-5 value of Bias. In addition, the optimized-ELM converged to the optimal number of hidden neurons faster than the optimized-ANN method.

Keywords: wave power, optimization, ELM, ANN, PSO.

YÜKSEK ISIYA DAYANIMLI SERAMİK TOZLARININ BALL ON DISC MEKANİZMASINDA SÜRTÜNME KATSAYILARININ KARŞILAŞTIRILMASI

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ÖZET

Yayınımız uzay araçlarında kullanılan ısı seramiklerinden yola çıkarak, sürtünme ve aşınma dayanımı yüksek, ısıya maruz kalan bölgenin ardına ısı geçirmeyen (en az geçiren), hafif ve mekanik dayanım özellikleri kuvvetli olan kompozit malzemelerin birbirleri ile kıyaslanarak en ideal olanının incelenmesi üzerinedir. Burada ana malzeme olarak seramik elyaf plaka kullanılmıştır. Üzerine yapılan karbür ve nitrür temelli kaplamalar ile malzemenin yukarıda belirtilen özellikler bakımından güçlenmesi beklenmektedir. Bağlayıcı malzeme olarak ise Etil Silikat Reçine kullanılmıştır.

Yapılan bu deney çalışması sonucunda Bor Karbür (2 farklı tanecik boyutunda), Silisyum Karbür, Tantal, Titanyum Karbür, Titanyum Nitrür, Titanyum, Zirkonyum Karbür, Zirkonyum Silikat ve Zirkonyum maddelerinin birbirleri ile kıyaslamalı olarak tribolojik özellikleri incelenecektir. Toplamda 10 numunenin tribolojik sonuçlarına ait yapılan incelemeler yayınımızda yer almaktadır. Yapılan çalışmalar sonucunda bazı malzemeler aşınma direncine dayananamış, dayanan malzemeler arasında ise en düşük dinamik sürtünme katsayısını veren malzeme dikkatle incelenmiştir.

Anahtar Kelimeler: Dinamik Sürtünme Katsayısı, Karbür, Nitrür, Bor

SİBER DÜNYANIN KARANLIK YÜZÜ: GÜVENLİKTEN ZORBALIĞA MODERN PROBLEMLER

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Özet

Teknolojinin etkin bir rol aldığı "modern dünya" olarak tabir edilen günümüz dünyasında teknolojinin yararları yanında bazı problemler de ortaya çıkmıştır. Bu problemler hem bireyler hem toplum hem de ülkeler açısından bazı riskler taşımaktadır. İlgili literatürde "siber" ön eki alarak tanımlanan bu problemleri incelemek ve detaylandırmak, yaygın bir etki potansiyeline sahip olmakla birlikte, toplum ve kurumlar için farkındalık geliştirecek niteliktedir. Bu bağlamda çalışmanın amacı, dijital çağın beraberinde getirdiği çeşitli problemleri ele almak ve bu problemlerin birey ve toplum üzerindeki etkilerini genel bir şekilde incelemektir. Çalışmada, "Siber" kelimesi temel alınmış ve bu kelime ilgili üretilmiş riskler ve problemler üzerinde durulmuştur. Ayrıca siber saldırı, siber zorbalık, siber aylaklık ve siber suçlar gibi konulara odaklanılarak, bu alandaki güncel tanımlamalar ve ilgili akademik çalışmalar ortaya koyulmuştur. Çalışma sonucunda ise bireylerin ve kurumların siber risklere ve tehditlere karşı nasıl daha iyi korunabileceği, alınabilecek önlemler ve "Siber" ile ilgili problemlerin farkındalığının artırılması yolları literatür doğrultusunda rapor edilmiştir. Ek olarak; çalışmada bireyler açısından ise siber aylaklık ve dijital bağımlılık gibi günlük hayatımızı etkileyen diğer önemli konular da incelenmiş ve bu sorunların sosyal ve psikolojik boyutlarına değinilmiştir. Son olarak, çalışmada siber alanın getirdiği risklerle etkin bir şekilde başa çıkabilmenin yolları tartışılmış, siber riskler ve problemler açısından bir sınıflandırma yapılmış ve gelecekteki olası gelişmeler hakkında öngörülerde bulunulmuştur.

Anahtar Kelimeler: Siber Riskler, Derleme Çalışması, Teknoloji, İnternet.

The Dark Side of Cyber World: Modern Problems from Security to Bullying

Abstract

In today's world, often referred to as the "modern world" where technology plays a significant role, the benefits of technology come with certain challenges. These challenges pose risks for individuals, societies, and nations. Examining and detailing these problems, defined with the prefix "cyber" in the relevant literature, is qualitatively important as it holds the potential for widespread impact and contributes to developing awareness in both communities and institutions. In this context, the aim of the study is to address various problems brought about by the digital age and to comprehensively examine their impacts on individuals and society. In this study, the word "Cyber" is taken as a basis and the risks and problems produced about this word are emphasized. Additionally, it delves into topics such as cyberattacks, cyberbullying, cyberloafing, and cybercrimes, presenting current definitions and relevant academic studies in this field. As a result of the study, how individuals and organizations can be better protected against cyber risks and threats, measures that can be taken, and ways to increase awareness of the problems related to "Cyber" are reported in line with the literature. In addition, the study also examined other important issues affecting our daily lives such as cyberloafing and digital addiction from the perspective of individuals and addressed the social and psychological dimensions of these problems.

Finally, the study discusses strategies for effectively dealing with the risks presented by the cyber realm, provides a classification of cyber risks and problems, and offers predictions about possible future developments.

Keywords: Cyber Risks, Compilation Study, Technology, Internet.

BILGISAYAR PROGRAMLAMA EĞITIMI ALAN ÜNIVERSITE ÖĞRENCILERI ARASINDA EĞITIMDE CHATBOT KULLANIMINA YÖNELIK DAVRANIŞSAL NIYETIN ÇEŞITLI DEĞIŞKENLERE GÖRE İNCELENMESI

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Özet

Son zamanlarda yapay zekâ (YZ) teknolojilerinin gelişimi ile birçok alanda YZ uygulamalarından yararlanılmaktadır. Eğitimde de bir YZ modeli olan Chatbot uygulamalarının kullanımı da günden güne artmaktadır. Chatbot, genellikle kullanıcı-teknoloji arasında metin, ses yoluyla iletişim kurmayı sağlayan bir yazılım olarak tanımlanmaktadır. Open AI firmasının piyasaya sürdüğü Chatbot olan Chat GPT yapay zekâ dil modelinin, üniversite öğrencileri arasında kullanımı yaygınlaşmaktadır. Özellikle Mühendislik eğitimi alan üniversite öğrencilerinin bilgisayar programlama derslerinde, müfredatta bulunan konular hakkında bilgiler almak, kodlar içindeki hataları tespit etmek, konuyla ilgili alıştırmalar oluşturmak ve dersin sınavlarına çalışmak amacıyla Chatbot kullandığı gözlenmektedir. Fakat bunun üzerine yürütülen akademik çalışmaların yetersizliği yüzünden, üniversite öğrencilerinin Chatbot kullanım niyetlerinin ve amaçlarının akademik çalışmalar ile desteklenmesi gerekmektedir. Bu nedenle konu ile ilgili kapsamlı çalışmaların yürütülmesi gerekmektedir. Bu bağlamda çalışmanın amacı, Trakya bölgesinde faaliyet gösteren bir devlet üniversitesinin mühendislik fakültesinde öğrenim gören ve programlaya giriş dersi alan birinci sınıf öğrencilerinin eğitimde Chatbot kullanımına yönelik davranışsal niyetlerini ortaya koymak ve çeşitli değişkenlere göre incelemektir. Çalışmaya yaklaşık olarak 200 üniversite öğrenci katılacaktır. Genel Tarama yöntemi ile desenlenecek çalışmada, mühendislik fakültesinde öğrenim gören üniversite öğrencilerinin eğitimde Chatbot kullanım niyeti düzeyleri ve bağımsız değişkenler olan cinsiyet, yaş, bölüm, ebeveyn gelir durumu gibi değişkenlere göre bu davranışsal niyetin değişimi incelenecektir. Çalışmada verilerin analizinde, normallik testlerinin sonucuna göre parametrik veya parametrik olmayan testler kullanılacaktır. Son olarak, elde edilen bulgular sonucunda ilgili literatür ışığında tartışma yapılacak ve eğitimde YZ kullanımı ile ilgili öneriler sunulacaktır.

Anahtar Kelimeler: Yapay Zekâ, Mühendislik Eğitimi, Chatbot, Üniversite Öğrencileri.

Investigation of Behavioral Intention towards Chatbot Use in Education Among University Students Studying Computer Programming Education Regarding Various Variables

Abstract

Recently, with the development of artificial intelligence (AI) technologies, AI applications has been utilized in many fields. The use of Chatbot applications, which is an AI model in education, is increasing day by day. Chatbot is generally defined as software enables communication between the user and technology through text or voice. The use of ChatGPT artificial intelligence language model, which is the Chatbot launched by Open AI company, is becoming more common among university students. It is observed that university students, especially those studying engineering, use Chatbot in computer programming courses, to get information about the subjects in the curriculum, to detect errors in the codes, to create exercises on the subject and to study for the exams of the course. However, due to the insufficiency of academic studies on this subject, it is necessary to support the Chatbot usage intentions and Chatbot usage purposes of university students with academic studies. Thus, it is necessary to comprehensive studies on the subject should be carried out. In this context, the aim of the study is to examine the behavioral intentions of first-year students studying at the engineering faculty of a state university operating in the Thrace region and taking an introduction to computer programming course towards to use of Chatbot in education and to examine them according to various variables. Approximately 200 university students will participate in the study. The study, which will be designed with the General Survey method, will examine the level of intention to use Chatbot in education of university students studying at the faculty of engineering and the change of this behavioral intention according to variables such as gender, age, department, parental income status, which are independent variables. In the analysis of the data in the study, parametric or nonparametric tests will be used according to the results of normality tests. Finally, as a result of the findings, a discussion will be made in the light of the relevant literature and recommendations will be presented regarding the use of AI in education.

Keywords: Artificial Intelligence, Engineering Education, Chatbot, University Students

Temperature-dependent Structural Perturbation of Tuna Myoglobin

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Abstract:

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

Keywords: denaturation, myoglobin, stability, tuna.

An Intelligent System for Knee and Ankle Rehabilitation

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Abstract:

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

Keywords: Ankle, knee, rehabilitation, computer control.

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

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Abstract:

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

Keywords: Breast cancer detection, Microwave Imaging, Tomography.

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

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

Abstract:

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

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

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

Harcharan Singh Ranu

Abstract:

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

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

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

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Abstract:

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

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

Characterization of Lubricity of Mucins at Polymeric Surfaces for Biomedical Applications

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Abstract:

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

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

Influence of Microstructural Features on Wear Resistance of Biomedical Titanium Materials

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Abstract:

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

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

CLINICAL COMPARATIVE STUDY COMPARING EFFICACY OF INTRATHECAL FENTANYL AND MAGNESIUM AS AN ADJUVANT TO HYPERBARIC BUPIVACAINE IN MILD PRE-ECLAMPTIC PATIENTS UNDERGOING CAESAREAN SECTION

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Abstract:

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

Keywords: Analgesia, magnesium, preeclampsia, spinal anaesthes

EFFECT OF MUSCLE ENERGY TECHNIQUE ON ANTERIOR PELVIC TILT IN LUMBAR SPONDYLOSIS PATIENTS

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Abstract:

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

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

THE OXIDATIVE DAMAGE MARKER FOR SODIUM FORMATE EXPOSURE ON LYMPHOCYTES

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Abstract:

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

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

ASSOCIATION OF OVERWEIGHT AND OBESITY WITH BREAST CANCER

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Abstract:

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

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

EFFECTS OF SYNCHRONOUS MUSIC ON GYMNASTICS' MOTOR SKILLS PERFORMANCE AMONG UNDERGRADUATE FEMALE STUDENTS IN PHYSICAL EDUCATION COLLEGE

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Abstract:

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

Keywords: Performance, motor skill, music, synchronous.

INFLUENCE OF BILATERAL AND UNILATERAL FLATFOOT ON PELVIC ALIGNMENT

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Abstract:

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

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

PROTECTIVE EFFECT OF THYMOQUINONE AGAINST NEPHROTOXICITY INDUCED BY CADMIUM IN RATS

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Abstract:

The present study investigated the protective effect of thymoquinone (TQ), against cadmium-induced kidney injury in rats. Cadmium chloride (1.2 mg Cd/kg/day, s.c.), was given for nine weeks. TQ treatment (40 mg/kg/day, p.o.) started on the same day of cadmium administration and continued for nine weeks. TQ significantly decreased serum creatinine, renal malondialdehyde and nitric oxide, and significantly increased renal reduced glutathione in rats received cadmium. Histopathological examination showed that TQ markedly minimized renal tissue damage induced by cadmium. Immunohistochemical analysis revealed that TQ markedly decreased the cadmium-induced expression of inducible nitric oxide synthase, tumor necrosis factor-α, cyclooxygenase-2, and caspase-3 in renal tissue. It was concluded that TQ significantly protected against cadmium nephrotoxicity in rats, through its antioxidant, antiinflammatory, and antiapoptotic actions.

Keywords: Thymoquinone, cadmium, kidney, rats.

BODY COMPOSITION ANALYSIS OF UNIVERSITY STUDENTS BY ANTHROPOMETRY AND BIOELECTRICAL IMPEDANCE ANALYSIS

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Abstract:

Background: Worldwide, at least 2.8 million people die each year as a result of being overweight or obese, and 35.8 million (2.3%) of global DALYs are caused by overweight or obesity. Obesity is acknowledged as one of the burning public health problems reducing life expectancy and quality of life. The body composition analysis of the university population is essential in assessing the nutritional status, as well as the risk of developing diseases associated with abnormal body fat content so as to make nutritional recommendations. Objectives: The main aim was to determine the prevalence of obesity and overweight in University students using Anthropometric analysis and BIA methods. Material and Methods: In this cross-sectional study, 283 university students participated. The body composition analysis was undertaken by using mainly: i) Anthropometric Measurement: Height, Weight, BMI, waist circumference, hip circumference and skin fold thickness, ii) Bio-electrical impedance was used for analysis of body fat mass, fat percent and visceral fat which was measured by Tanita SC-330P Professional Body Composition Analyzer. The data so collected were compiled in MS Excel and analyzed for males and females using SPSS 16. Results and Discussion: The mean age of the male (n= 153) studied subjects was 25.37 ±2.39 years and females (n=130) was 22.53 ±2.31. The data of BIA revealed very high mean fat per cent of the female subjects i.e. 30.3±6.5 per cent whereas mean fat per cent of the male subjects was 15.60±6.02 per cent indicating a normal body fat range. The findings showed high visceral fat of both males (12.92±3.02) and females (16.86±4.98). BMI, BF% and WHR were higher among females, and BMI was higher among males. The most evident correlation was verified between BF% and WHR for female students ($r=0.902$; $p<0.001$). The correlation of BFM and BF% with thickness of triceps, sub scapular and abdominal skin folds and BMI was significant ($P<0.001$). Conclusion: The studied data made it obvious that there is a need to initiate lifestyle changing strategies especially for adult females and encourage them to improve their dietary intake to prevent incidence of noncommunicable diseases due to obesity and high fat percentage.

Keywords: Anthropometry, bioelectrical impedance, body fat percentage, obesity.

COMPARISON BETWEEN ANTIBACTERIAL EFFECTS OF ETHANOLIC AND ISOPROPYL: HEXAN (7:3) EXTRACTS OF ZINGIBER OFFICINALE ROSE

Tahereh Naji, Mahsa Jassemi

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Abstract:

In this investigation, the antibacterial effects of ethanolic and 7:3 isopropyl –hexane mixture extracts of Zingiber officinale were evaluated against three Gram positive bacteria, B. cereus, S.epidermidis, S. aureus and three Gram negative bacteria, E. coli, K.pneumonia and P.areuginosa. Utilizing paper disk diffusion and well methods in-vitro, MIC and MBC were determined by macrodilution. The results showed that ethanolic rhizome extract of ginger had significantly active than Isopropyl –hexan extract. Further work needs to be done in these extracts including fractionation to isolate active constituents and subsequent pharmacological evaluation.

Keywords: Antibacterial, Medicinal plant extract, Zingiberofficinale.

IN VITRO ANTI-TUBERCULAR SCREENING OF NEWLY SYNTHESIZED BENZIMIDAZOLE DERIVATIVES

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Abstract:

A series of 1-(1H-benzimidazol-2-yl)-3-(substituted phenyl)-2-propen-1-one were allowed to react with hydrazine hydrate and phenyl hydrazine in submitted reactions to get pyrazoline and phenyl pyrazoline derivatives. All the compounds entered for screening at the Tuberculosis Antimicrobial Acquisition and Coordinating Facility (TAACF) for their in vitro antibacterial activity against Mycobacterium tuberculosis H37Rv strain (ATCC 27294) using Microplate Alamar Blue Assay (MABA) susceptibility test. The results expressed as MIC (minimum inhibitory concentration) in µg/mL. Among the fifteen compounds, eight compounds were found to have MIC values less than 10 µg/mL. These were subjected for cytotoxicity assay in VERO cells to determine CC50 (cytotoxic concentration 50%) values and finally SI (Selectivity Index) were calculated. Compound (XV) 2-[5-(4- fluorophenyl)-1-phenyl-4,5-dihydro-1H-3-pyrazolyl]-1Hbenzimidazole was considered the best candidate of the series that could be a good starting point to develop new lead compounds in the fight against tuberculosis.

Keywords: anti-tubercular activity, benzimidazole, pyrazoline.

FORMULATION AND EVALUATION OF VAGINAL SUPPOSITORIES CONTAINING LACTOBACILLUS

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Abstract:

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

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

PENTACHLOROPHENOL REMOVAL VIA ADSORPTION AND BIODEGRADATION

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Abstract:

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

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

PACKAGING THE ALKALOIDS OF CINCHONA BARK IN COMBINATION WITH ETOPOSIDE IN POLYMERIC MICELLES NANOPARTICLES

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Abstract:

Today, cancer remains one of the major diseases that lead to death. The main obstacle in chemotherapy as a main cancer treatment is the toxicity to normal cells due to Multidrug Resistance (MDR) after the use of anticancer drugs. Proposed solution to overcome this problem is the use of MDR efflux inhibitor of cinchona alkaloids which is delivered together with anticancer drugs encapsulated in the form of polymeric nanoparticles. The particles were prepared by the hydration method. The characterization of nanoparticles was particle size, zeta potential, entrapment efficiency and in vitro drug release. Combination nanoparticle size ranged 29-45 nm with a neutral surface charge. Entrapment efficiency was above 87% for the use quinine, quinidine or cinchonidine in combination with etoposide. The release test results exhibited that the cinchona alkaloids release released faster than that of etoposide. Collectively, cinchona alkaloids can be packaged along with etoposide in nanomicelles for better cancer therapy.

Keywords: Cinchona alkaloids, etoposide, MDR efflux inhitor, polymeric nanomicelles.

COMPARATIVE EVALUATION OF THE BIOPHARMACEUTICAL AND CHEMICAL EQUIVALENCE OF THE SOME COMMERCIAL BRANDS OF PARACETAMOL TABLETS

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Abstract:

Acetaminophen (Paracetamol) tablets are popular OTC products among patients as analgesics and antipyretics. Paracetamol is marketed by a lot of suppliers around the world. The aim of the present investigation was to compare between many types of paracetamol tablets obtained from different suppliers (six brands produced by different pharmaceutical companies in middle east countries, and Panadol® manufactured in Ireland), by different quality control tests according to USP pharmacopeia.Using Non official tests-hardness and friability; official tests-disintegration, dissolution, and drug content. Additionally, evaluate the influence of temperatures 4°C, 25°C and 40°C at 75% relative humidity on the stability of the same brands in their original packaging has been conducted for two months. The results revealed that all paracetamol tablet brands complied with the official USP specifications. In conclusion, paracetamol tablets preferred to be stored at 25°C. All the tested brands being biopharmaceutically and chemically equivalent.

Keywords: Non official tests-hardness and friability, official tests –disintegration, dissolution, and drug content.

DATA MINING CLASSIFICATION METHODS APPLIED IN DRUG DESIGN

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Abstract:

Data mining incorporates a group of statistical methods used to analyze a set of information, or a data set. It operates with models and algorithms, which are powerful tools with the great potential. They can help people to understand the patterns in certain chunk of information so it is obvious that the data mining tools have a wide area of applications. For example in the theoretical chemistry data mining tools can be used to predict moleculeproperties or improve computer-assisted drug design. Classification analysis is one of the major data mining methodologies. The aim of thecontribution is to create a classification model, which would be able to deal with a huge data set with high accuracy. For this purpose logistic regression, Bayesian logistic regression and random forest models were built using R software. TheBayesian logistic regression in Latent GOLD software was created as well. These classification methods belong to supervised learning methods. It was necessary to reduce data matrix dimension before construct models and thus the factor analysis (FA) was used. Those models were applied to predict the biological activity of molecules, potential new drug candidates.

Keywords: data mining, classification, drug design, QSAR

ANALYSIS OF DIFFERENT DESIGNED LANDING GEARS FOR A LIGHT AIRCRAFT

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Abstract:

The design of a landing gear is one of the fundamental aspects of aircraft design. The need for a light weight, high strength, and stiffness characteristics coupled with techno economic feasibility are a key to the acceptability of any landing gear construction. In this paper, an approach for analyzing two different designed landing gears for an unmanned aircraft vehicle (UAV) using advanced CAE techniques will be applied. Different landing conditions have been considered for both models. The maximum principle stresses for each model along with the factor of safety are calculated for every loading condition. A conclusion is drawing about better geometry.

Keywords: Landing Gear, Model, Finite Element Analysis, Aircraft.

CONCEPTUAL DESIGN OF AN AIRFOIL WITH TEMPERATURE-RESPONSIVE POLYMER

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Abstract:

The accelerated growth in aircraft industries desire effectual schemes, programs, innovative designs of advanced systems and facilities to accomplish the augmenting need for home-free air transportation. In this paper, a contemporary conceptual design of a cambered airfoil has been proposed in order to providing augmented effective lift force relative to the airplane, and to eliminating drawbacks and limitations of an airfoil in a commercial airplane by using a kind of smart materials. This invention of an unsymmetrical airfoil structure utilizes the amplified air momentum around the airfoil and increased camber length to providing improved aircraft performance and assist to enhancing the reliability of the aircraft components. Moreover, this conjectured design helps to reducing airplane weight and total drag.

Keywords: Collector electrode, corona electrode, Temperatureresponsive polymer and ultra-faims microchip.

CONCENTRATED SOLAR POWER UTILIZATION IN SPACE VEHICLES PROPULSION AND POWER GENERATION

Maged A. Mossallam

Abstract:

The objective from this paper is to design a solar thermal engine for space vehicles orbital control and electricity generation. A computational model is developed for the prediction of the solar thermal engine performance for different design parameters and conditions in order to enhance the engine efficiency. The engine is divided into two main subsystems. First, the concentrator dish which receives solar energy from the sun and reflects them to the cavity receiver. The second one is the cavity receiver which receives the heat flux reflected from the concentrator and transfers heat to the fluid passing over. Other subsystems depend on the application required from the engine. For thrust application, a nozzle is introduced to the system for the fluid to expand and produce thrust. Hydrogen is preferred as a working fluid in the thruster application. Results model developed is used to determine the thrust for a concentrator dish 4 meters in diameter (provides 10 kW of energy), focusing solar energy to a 10 cm aperture diameter cavity receiver. The cavity receiver outer length is 50 cm and the internal cavity is 47 cm in length. The suggested design material of the internal cavity is tungsten to withstand high temperature. The thermal model and analysis shows that the hydrogen temperature at the plenum reaches 2000oK after about 250 seconds for hot start operation for a flow rate of 0.1 g/sec.Using solar thermal engine as an electricity generation device on earth is also discussed. In this case a compressor and turbine are used to convert the heat gained by the working fluid (air) into mechanical power. This mechanical power can be converted into electrical power by using a generator.

Keywords: Concentrated Solar Energy, Orbital Control, Power Generation, Solar Thermal Engine, Space Vehicles Propulsion

OPTIMIZATION OF MULTIFUNCTIONAL BATTERY STRUCTURES FOR MARS

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Abstract:

Multifunctional structures are a potentially disruptive technology that allows for significant mass savings on spacecraft. The specific concept addressed herein is that of a multifunctional power structure. In this paper, a parametric optimisation of the design of such a structure that uses commercially available battery cells is presented. Using numerical modelling, it was found that there exists several trade-offs aboutthe conflict between the capacity of the panel and its mechanical properties. It was found that there is no universal optimal location for the cells. Placing them close to the mechanical interfaces increases loading in the mechanically weak cells whereas placing them at the centre of the panel increases the stress inthe panel and reduces the stiffness of the structure.

Keywords: Design Optimization, Multifunctional Structures, Power Storage.

MODELING AND CONTROL OF A QUADROTOR UAV WITH AERODYNAMIC CONCEPTS

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Abstract:

This paper presents preliminary results on modeling and control of a quadrotor UAV. With aerodynamic concepts, a mathematical model is firstly proposed to describe the dynamics of the quadrotor UAV. Parameters of this model are identified by experiments with Matlab Identify Toolbox. A group of PID controllers are then designed based on the developed model. To verify the developed model and controllers, simulations and experiments for altitude control, position control and trajectory tracking are carried out. The results show that the quadrotor UAV well follows the referenced commands, which clearly demonstrates the effectiveness of the proposed approach.

Keywords: Quadrotor UAV, Modeling, Control, Aerodynamics, System Identification.

TOPOLOGY OPTIMIZATION OF AIRCRAFT FUSELAGE STRUCTURE

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Abstract:

Topology Optimization is a defined as the method of determining optimal distribution of material for the assumed design space with functionality, loads and boundary conditions [1]. Topology optimization can be used to optimize shape for the purposes of weight reduction, minimizing material requirements or selecting cost effective materials [2]. Topology optimization has been implemented through the use of finite element methods for the analysis, and optimization techniques based on the method of moving asymptotes, genetic algorithms, optimality criteria method, level sets and topological derivatives. Case study of Typical “Fuselage design" is considered for this paper to explain the benefits of Topology Optimization in the design cycle. A cylindrical shell is assumed as the design space and aerospace standard pay loads were applied on the fuselage with wing attachments as constraints. Then topological optimization is done using Finite Element (FE) based software. This optimization results in the structural concept design which satisfies all the design constraints using minimum material.

Keywords: Fuselage, Topology optimization, payloads, designoptimization, Finite Element Analysis.

TERRAIN EVALUATION METHOD FOR HEXAPOD ROBOT

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Abstract:

In this paper a simple terrain evaluation method for hexapod robot is introduced. This method is based on feet coordinate evaluation when all are on the ground. Depending on the feet coordinate differences the local terrain evaluation is possible. Terrain evaluation is necessary for right gait selection and/or body position correction. For terrain roughness evaluation three planes are plotted: two of them as definition points use opposite feet coordinates, third coincides with the robot body plane. The leaning angle of body plane is evaluated measuring gravity force using three-axis accelerometer. Terrain roughness evaluation method is based on angle estimation between normal vectors of these planes. Aim of this work is to present a simple method for embedded robot controller, allowing to find the best further movement settings.

Keywords: Hexapod robot, pose estimation, terrain evaluation, terrain roughness.

SMALL SATELLITE MODELLING AND ATTITUDE CONTROL USING FUZZY LOGIC

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Abstract:

Small satellites have become increasingly popular recently as a means of providing educational institutes with the chance to design, construct, and test their spacecraft from beginning to the possible launch due to the low launching cost. This approach is remarkably cost saving because of the weight and size reduction of such satellites. Weight reduction could be realised by utilising electromagnetic coils solely, instead of different types of actuators. This paper describes the restrictions of using only “Electromagnetic" actuation for 3D stabilisation and how to make the magnetorquer based attitude control feasible using Fuzzy Logic Control (FLC). The design is developed to stabilize the spacecraft against gravity gradient disturbances with a three-axis stabilizing capability.

Keywords: Fuzzy, Attitude Control, Small Satellite, Fuzzy Logic Control, Electromagnetic, Magnetic Control.

ADVANTAGES OF COMPOSITE MATERIALS IN AIRCRAFT STRUCTURES

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Abstract:

In the competitive environment of aircraft industries it becomes absolutely necessary to improve the efficiency, performance of the aircrafts to reduce the development and operating costs considerably, in order to capitalize the market. An important contribution to improve the efficiency and performance can be achieved by decreasing the aircraft weight through considerable usage of composite materials in primary aircraft structures. In this study, a type of composite material called Carbon Fiber Reinforced Plastic (CFRP) is explored for the usage is aircraft skin panels. Even though there were plenty of studies and research has been already carried out, here a practical example of an aircraft skin panel is taken and substantiated the benefits of composites material usage over the metallic skin panel. A crown skin panel of a commercial aircraft is designed using both metal and composite materials. Stress analysis has been carried out for both and margin of safety is estimated for the critical load cases. The skin panels are compared for manufacturing, tooling, assembly and cost parameters. Detail step by step comparison between metal and composite constructions are studied and results are tabulated for better understanding.

Keywords: Composites, CFRP, Aircraft Structure, Skin panel.

MATERIAL SELECTION FOR FOOTWEAR INSOLE USING ANALYTICAL HIERARCHAL PROCESS

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Abstract:

Product performance depends on the type and quality of its building material. Successful product must be made using high quality material, and using the right methods. Many foot problems took place as a result of using poor insole material. Therefore, selecting a proper insole material is crucial to eliminate these problems. In this study, the analytical hierarchy process (AHP) is used to provide a systematic procedure for choosing the best material adequate for this application among three material alternatives (polyurethane, poron, and plastzote). Several comparison criteria are used to build the AHP model including: density, stiffness, durability, energy absorption, and ease of fabrication. Poron was selected as the best choice. Inconsistency testing indicates that the model is reasonable, and the materials alternative ranking is effective.

Keywords: Materials selection, biomedical insole, footwear insole, AHP.

Effects of Test Environment on the Sliding Wear Behaviour of Cast Iron, Zinc-Aluminium Alloy and Its Composite

Mohammad M. Khan, Gajendra Dixit

Abstract:

Partially lubricated sliding wear behaviour of a zinc-based alloy reinforced with 10wt% SiC particles has been studied as a function of applied load and solid lubricant particle size and has been compared with that of matrix alloy and conventionally used grey cast iron. The wear tests were conducted at the sliding velocities of 2.1m/sec in various partial lubricated conditions using pin on disc machine as per ASTM G-99-05. Base oil (SAE 20W-40) or mixture of the base oil with 5wt% graphite of particle sizes (7-10 μm) and (100 μm) were used for creating lubricated conditions. The matrix alloy revealed primary dendrites of a and eutectoid a + h and Î phases in the Inter dendritic regions. Similar microstructure has been depicted by the composite with an additional presence of the dispersoid SiC particles. In the case of cast iron, flakes of graphite were observed in the matrix; the latter comprised of (majority of) pearlite and (limited quantity of) ferrite. Results show a large improvement in wear resistance of the zinc-based alloy after reinforcement with SiC particles. The cast iron shows intermediate response between the matrix alloy and composite. The solid lubrication improved the wear resistance and friction behaviour of both the reinforced and base alloy. Moreover, minimum wear rate is obtained in oil+ 5wt % graphite (7-10 μm) lubricated environment for the matrix alloy and composite while for cast iron addition of solid lubricant increases the wear rate and minimum wear rate is obtained in case of oil lubricated environment. The cast iron experienced higher frictional heating than the matrix alloy and composite in all the cases especially at higher load condition. As far as friction coefficient is concerned, a mixed trend of behaviour was noted. The wear rate and frictional heating increased with load while friction coefficient was affected in an opposite manner. Test duration influenced the frictional heating and friction coefficient of the samples in a mixed manner.

Keywords: Solid lubricant, sliding wear grey cast iron, zinc based metal matrix composites.

PREDICTION OF CUTTING TOOL LIFE IN DRILLING OF REINFORCED ALUMINUM ALLOY COMPOSITE USING A FUZZY METHOD

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Abstract:

Machining of Metal Matrix Composites (MMCs) is very significant process and has been a main problem that draws many researchers to investigate the characteristics of MMCs during different machining process. The poor machining properties of hard particles reinforced MMCs make drilling process a rather interesting task. Unlike drilling of conventional materials, many problems can be seriously encountered during drilling of MMCs, such as tool wear and cutting forces. Cutting tool wear is a very significant concern in industries. Cutting tool wear not only influences the quality of the drilled hole, but also affects the cutting tool life. Prediction the cutting tool life during drilling is essential for optimizing the cutting conditions. However, the relationship between tool life and cutting conditions, tool geometrical factors and workpiece material properties has not yet been established by any machining theory. In this research work, fuzzy subtractive clustering system has been used to model the cutting tool life in drilling of Al_2O_3 particle reinforced aluminum alloy composite to investigate of the effect of cutting conditions on cutting tool life. This investigation can help in controlling and optimizing of cutting conditions when the process parameters are adjusted. The built model for prediction the tool life is identified by using drill diameter, cutting speed, and cutting feed rate as input data. The validity of the model was confirmed by the examinations under various cutting conditions. Experimental results have shown the efficiency of the model to predict cutting tool life.

Keywords: Composite, fuzzy, tool life, wear.

MATERIAL SELECTION FOR A MANUAL WINCH ROPE DRUM

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Abstract:

The selection of materials is an essential task in mechanical design processes. This paper sets out to demonstrate the application of analytical decision making during mechanical design and, particularly, in selecting a suitable material for a given application. Equations for the mechanical design of a manual winch rope drum are used to derive quantitative material performance indicators, which are then used in a multiple attribute decision making (MADM) model to rank the candidate materials. Thus, the processing of mechanical design considerations and material properties data into information that is suitable for use in a quantitative materials selection process is demonstrated for the case of a rope drum design. Moreover, Microsoft Excel®, a commonly available computer package, is used in the selection process. The results of the materials selection process are in agreement with current industry practice in rope drum design. The procedure that is demonstrated here should be adaptable to other design situations in which a need arises for the selection of engineering materials, and other engineering entities.

Keywords: Design Decisions, Materials Selection, Mechanical Design, Rope Drum Design.

UV-CURED COATINGS BASED ON ACRYLATED EPOXIDIZED SOYBEAN OIL AND EPOXY CARBOXYLATE

Alaaddin Cerit, Suheyla Kocaman, Ulku Soydal

Abstract:

During the past two decades, photoinitiated polymerization has been attracting a great interest in terms of scientific and industrial activity. The wide recognition of UV treatment in the polymer industry results not only from its many practical applications but also from its advantage for low-cost processes. Unlike most thermal curing systems, radiation-curable systems can polymerize at room temperature without additional heat, and the curing is completed in a very short time. The advantage of cationic UV technology is that post-cure can continue in the 'dark' after radiation. In this study, bio-based acrylated epoxidized soybean oil (AESO) was cured with UV radiation using radicalic photoinitiator Irgacure 184. Triarylsulphonium hexafluoroantimonate was used as cationic photoinitiator for curing of 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexanecarboxylate. The effect of curing time and the amount of initiators on the curing degree and thermal properties were investigated. The thermal properties of the coating were analyzed after crosslinking UV irradiation. The level of crosslinking in the coating was evaluated by FTIR analysis. Cationic UV-cured coatings demonstrated excellent adhesion and corrosion resistance properties. Therefore, our study holds a great potential with its simple and low-cost applications.

Keywords: Acrylated epoxidized soybean oil, epoxy carboxylate, thermal properties, UV-curing.

Experimental Investigation on Over-Cut in Ultrasonic Machining of WC-Co Composite

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Abstract:

Ultrasonic machining is one of the most widely used non-traditional machining processes for machining of materials that are relatively brittle, hard, and fragile such as advanced ceramics, refractories, crystals, quartz etc. Present article has been targeted at investigating the impact of different experimental conditions (power rating, cobalt content, tool material, thickness of work piece, tool geometry, and abrasive grit size) on over cut in ultrasonic drilling of WC-Co composite material. Taguchi's L-36 orthogonal array has been employed for conducting the experiments. Significant factors have been identified using analysis of variance (ANOVA) test. The experimental results revealed that abrasive grit size and tool material are most significant factors for over cut.

Keywords: ANOVA, Abrasive grit size, Taguchi, WC-Co, ultrasonic machining.

INDUCTION MELTING AS A FABRICATION ROUTE FOR ALUMINUM-CARBON NANOTUBES NANOCOMPOSITE

Muhammad Shahid, Muhammad Mansoor

Abstract:

Increasing demands of contemporary applications for high strength and lightweight materials prompted the development of metal-matrix composites (MMCs). After the discovery of carbon nanotubes (CNTs) in 1991 (revealing an excellent set of mechanical properties) became one of the most promising strengthening materials for MMC applications. Additionally, the relatively low density of the nanotubes imparted high specific strengths, making them perfect strengthening material to reinforce MMCs. In the present study, aluminum-multiwalled carbon nanotubes (Al-MWCNTs) composite was prepared in an air induction furnace. The dispersion of the nanotubes in molten aluminum was assisted by inherent string action of induction heating at 790°C. During the fabrication process, multifunctional fluxes were used to avoid oxidation of the nanotubes and molten aluminum. Subsequently, the melt was cast in to a copper mold and cold rolled to 0.5 mm thickness. During metallographic examination using a scanning electron microscope, it was observed that the nanotubes were effectively dispersed in the matrix. The mechanical properties of the composite were significantly increased as compared to pure aluminum specimen i.e. the yield strength from 65 to 115 MPa, the tensile strength from 82 to 125 MPa and hardness from 27 to 30 HV for pure aluminum and Al-CNTs composite, respectively. To recognize the associated strengthening mechanisms in the nanocomposites, three foremost strengthening models i.e. shear lag model, Orowan looping and Hall-Petch have been critically analyzed; experimental data were found to be closely satisfying the shear lag model.

Keywords: Carbon nanotubes, induction melting, nanocomposite, strengthening mechanism.

CORPORATE GOVERNANCE NETWORKS AND INTERLOCKING DIRECTORATES IN THE CZECH REPUBLIC

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Abstract:

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

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

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

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Abstract:

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

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

ANALYSIS OF RUBBER WASTE UTILIZATION AT PANDORA PRODUCTION COMPANY LIMITED

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Abstract:

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

Keywords: Rubber, ecology, waste.

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

Nantida Otakum

Abstract:

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

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

HYBRID ENERGY SUPPLY WITH DOMINANTLY RENEWABLE OPTION FOR SMALL INDUSTRIAL COMPLEX

Tomislav Stambolic, Anton Causevski

Abstract:

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

Keywords: Energy, Power Supply, Renewable, Efficiency.

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

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Abstract:

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

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

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.

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

REAL-TIME RECOGNITION OF DYNAMIC HAND POSTURES ON A NEUROMORPHIC SYSTEM

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Abstract:

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

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

OPTIMAL PLANNING OF DISPATCHABLE DISTRIBUTED GENERATORS FOR POWER LOSS REDUCTION IN UNBALANCED DISTRIBUTION NETWORKS

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Abstract:

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

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

OPTIMAL ECONOMIC LOAD DISPATCH USING GENETIC ALGORITHMS

Vijay Kumar, Jagdev Singh, Yaduvir Singh, Sanjay Sood

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Dr. Jagdev Singh is with the BCET, Gurdaspur

Dr. Yaduvir Singh is with the HBTI, Kanpur

Dr. Sanjay Sood is with the CDAC, Mohali

Abstract:

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

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

EMPIRICAL MODE DECOMPOSITION BASED MULTISCALE ANALYSIS OF PHYSIOLOGICAL SIGNAL

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Abstract:

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

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

EXPERIMENTAL IMPLEMENTATION OF MODEL PREDICTIVE CONTROL FOR PERMANENT MAGNET SYNCHRONOUS MOTOR

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Abstract:

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

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

ANALYSIS OF DIRECT CURRENT MOTOR IN LABVIEW

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Abstract:

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

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

IMPROVEMENT OF VOLTAGE PROFILE OF GRID INTEGRATED WIND DISTRIBUTED GENERATION BY SVC

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Abstract:

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

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

A SIMPLE ADAPTIVE ATOMIC DECOMPOSITION VOICE ACTIVITY DETECTOR IMPLEMENTED BY MATCHING PURSUIT

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Abstract:

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

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

FARKLI PASTÖRİZASYON NORMLARINDA ISITMANIN İNEK SÜTLERİNDE MAİLLARD REAKSİYON ÜRÜNLERİ OLUŞUMUNA VE RAF ÖMRÜNE ETKİSİ

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ÖZET

Farklı pastörizasyon normlarında ısıtmanın inek sütlerinde Maillard reaksiyon ürünleri oluşumuna ve raf ömrüne etkisinin tespit edilmesi hedeflenmiştir. 75 ºC -30 sn, 83 ºC-30 sn, 90 ºC-30 sn, MF (Mikro Filitrasyon) + 75 ºC- 30 sn ve 138 ºC- 4 sn (UHT) olmak üzere 5 farklı pastörizasyon normunda 3 ayrı deneme tamamlanmıştır. Söz konusu denemelerde üretim, paketleme ve raf ömrü boyunca alınan numuneler için planlanan Maillard Reaksiyonu ürünleri oluşumu göstergeleri olan Furosin miktarı, CML (Karboksymetillisin) ve 1 adet aminoasitin profil analizleri için ayrılan ve donuk olarak min. –40 ºC'de muhafaza edilen numunelerin analizleri Hacettepe Üniversitesi Gıda Mühendisliği Bölümü Laboratuvarı'nda gerçekleştirilmiştir. Gerçekleştirilen 3 denemenin furosin, aminoasit profil ve CML analizleri tamamlanmıştır. Furosin analizi için temin edilen örnekler asitle hidrolize edilip, katı faz ekstraksiyon tekniği ile temizlendikten sonra hidrofilik interaksiyon sıvı kromatografisi tekniği ile analiz edilmiştir. Dedeksiyon UV-Vis detektör (285 nm) yardımıyla gerçekleştirilmiştir. Aminoasit profil analizi için temin edilen örnekler asitle hidrolize edildikten sonra hidrofilik interaksiyon sıvı kromatografisi tekniği kullanılmıştır. Analiz sıvı kromatografisi- tandem kütle spektrometresi (LC-MS/MS) yardımı ile gerçekleştirilmiştir. CML analizi LC-MS/MS ile literatüre göre yapıldıktan sonra istatistiksel değerlendirmelerde; sıcaklık artışının raf ömrüne ciddi katkısı olduğu, sıcaklığın Maillard reaksiyon ürünlerinin oluşumuna neden olduğu belirlendi. UHT işleminin en çok Maillard reaksiyon ürünlerini oluşturduğu, 75 ºC-30 sn ve 75 ºC-30 sn +MF ile en az Maillard reaksiyonu ürünleri oluşumunun görüldüğü gözlemlenmiştir. Raf ömrü süresi ve Maillard reaksiyon ürünleri oluşumu dikkate alındığında en ideal koşulların 75C +MF işlemi olduğu görülmektedir.

Anahtar Kelimeler: Süt, Pastörizasyon, Isısal Normlar, Maillard Reaksiyonu