IV. INTERNATIONAL ICONTECH SYMPOSIUM ON INNOVATIVE SURVEYS IN POSITIVE SCIENCES

18-19 July 2021
Adana, Turkey

SYMPOSIUM ABSTRACT BOOK

Editor:
Prof. Dr. Samir LADACI

ISBN: 978-1-955094-09-2

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Issued: 21.07.2021

WWW.ICONTECHSURVEYS.ORG
ISBN: 978-1-955094-09-2

SYMPOSIUM ID

TITLE OF CONGRESS

IV.International
ICONTECH SYMPOSIUM
on Innovative Surveys in Positive Sciences

DATE - PLACE

18-19 July 2021
Adana, Turkey

ORGANIZATION

Institute of Economic Development and Social Researches

EDITED BY

Prof. Dr. Samir LADACI

COORDINATOR

Alina AMANZHOLOVA

EVALUATION PROCESS

All applications have undergone a double-blind peer review process

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Turkey, France, Moldova, Morocco, Algeria, Pakistan, Indonesia, Nigeria, India, Ukraine, South Africa, Azerbaijan, China, Ukraine, Iran

TOTAL NUMBER OF PAPERS: 129
THE NUMBER OF PAPERS FROM TURKEY: 60
OTHER COUNTRIES: 69

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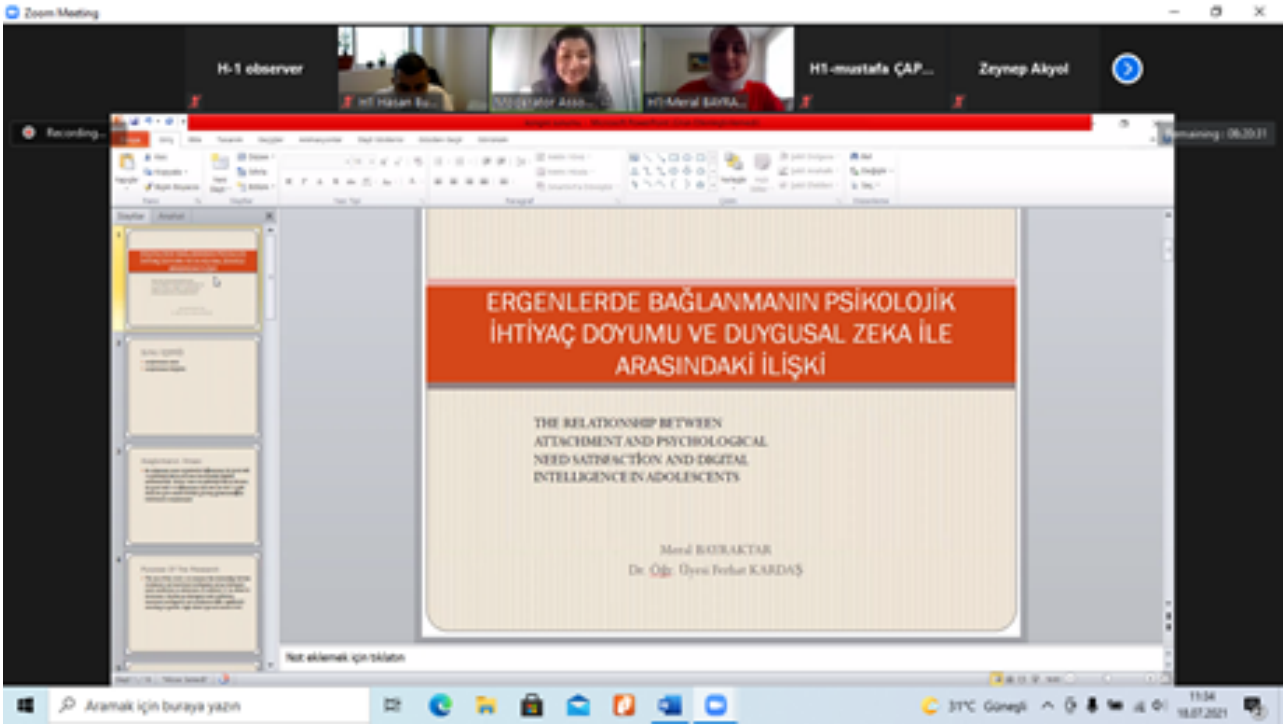

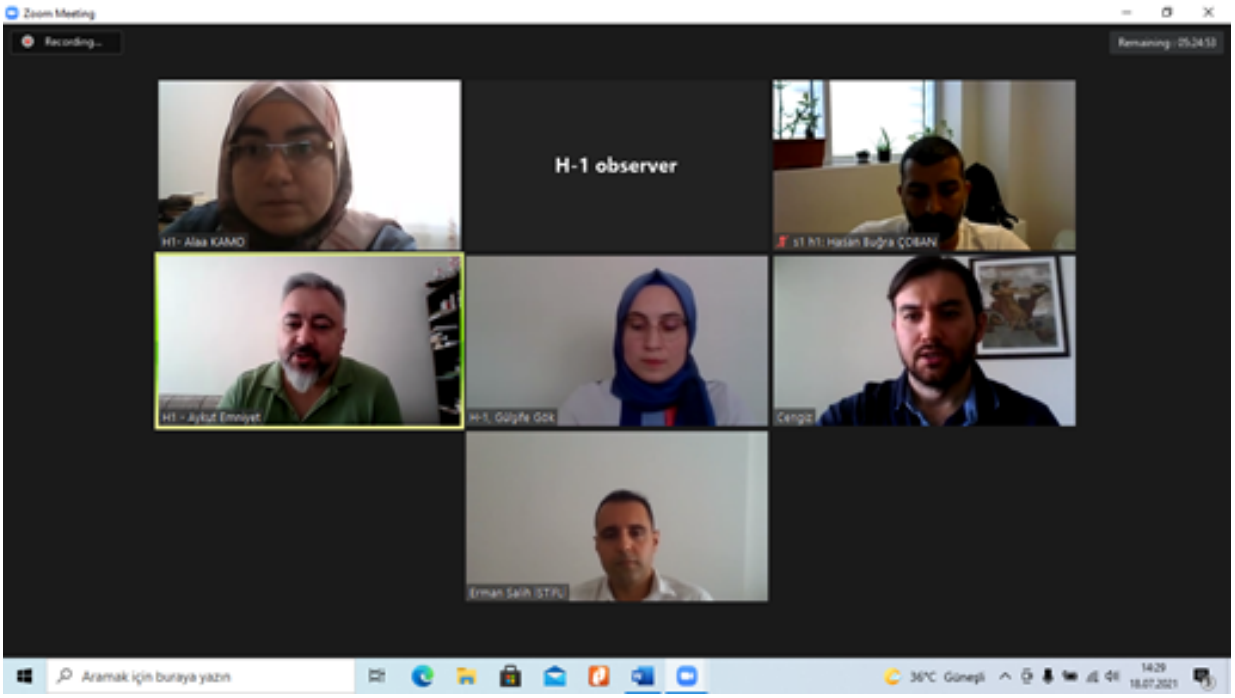
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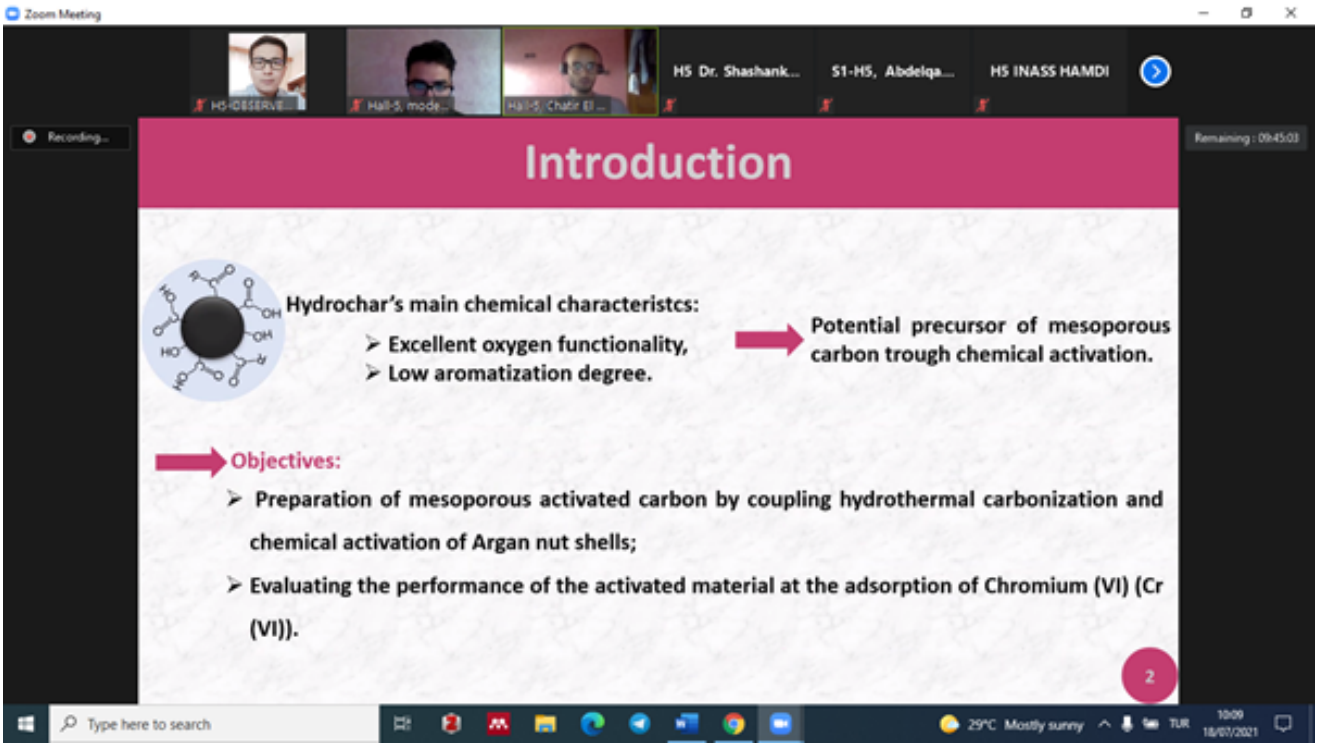
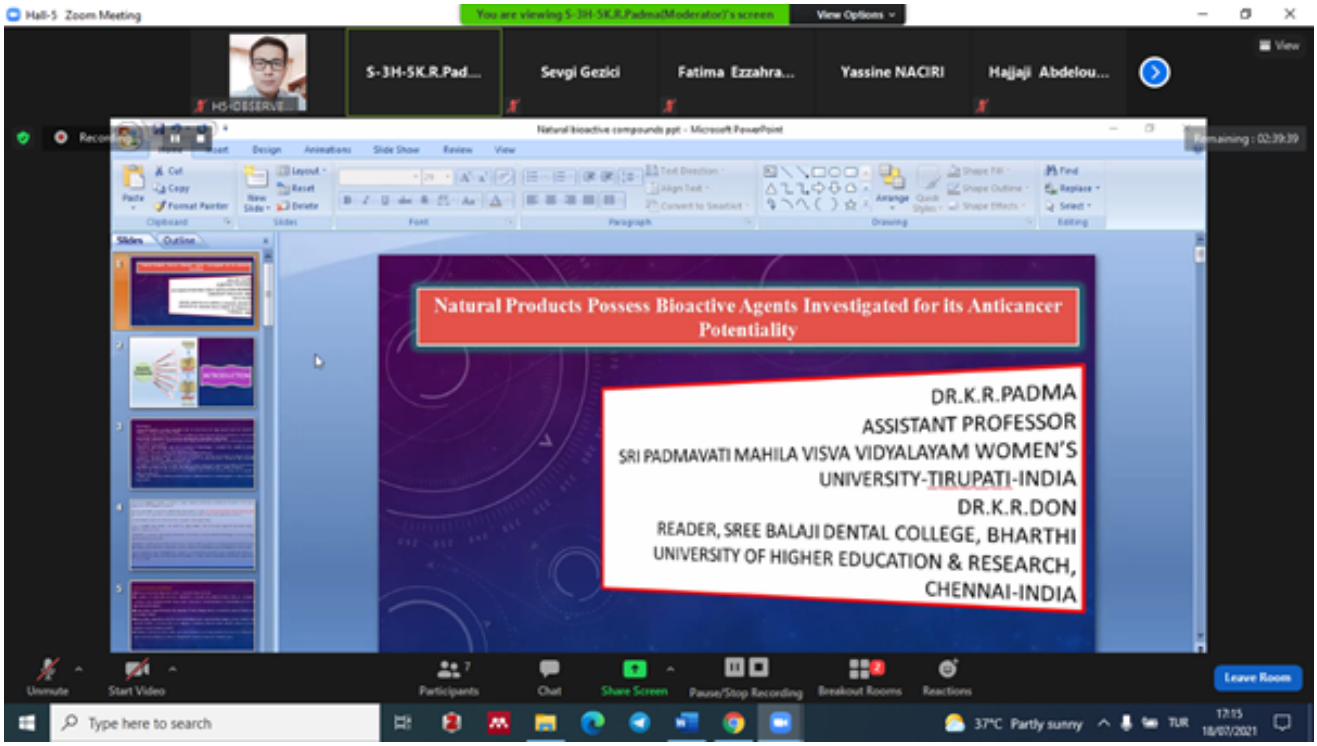
H-1 observer
H1- Alaa KAMO
H1 - Aykut Emniyet
H-1, Gülşfe Gök
Cengiz
Erman Salih ISTIFLI
Aramak için buraya yazın
36°C Güneşli
14:29
18.07.2021

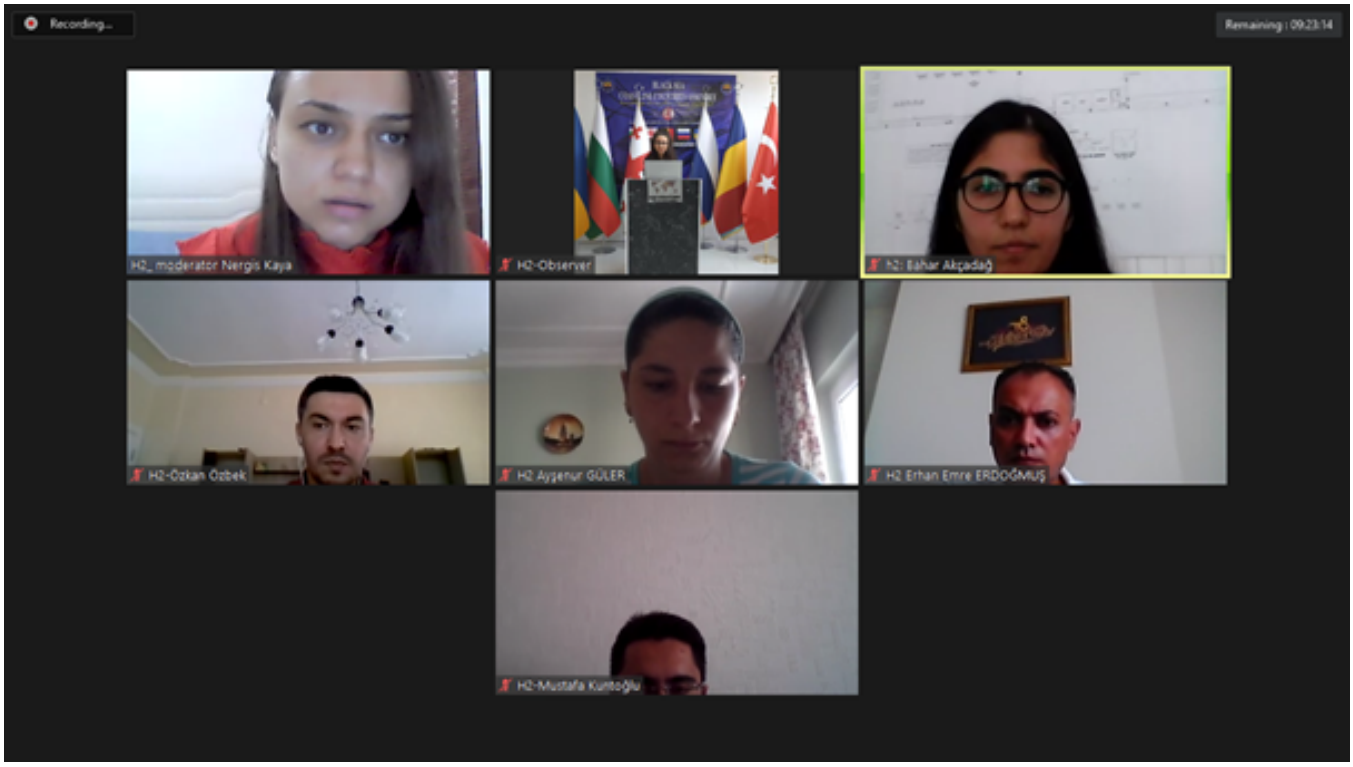

H-1 observer
THE EFFECT OF STREPTOMYCIN APPLICATION ON GROWTH AND CAROTENOID ACCUMULATION IN MICROALGAE
YAĞMUR GÜLÇİÇ, ARZU YILDIRIM*
EGE UNIVERSITY, FACULTY OF ENGINEERING, DEPARTMENT OF BIOENGINEERING
Aramak için buraya yazın
37°C


Zoom Meeting
H5 Dr. Shashank...
S1-H5, Abdelqa...
H5 INASS HAMDI
Recording...
Remaining : 09:45:03
Introduction
Hydrochar's main chemical characteristcs:
Excellent oxygen functionality,
Low aromatization degree.
Potential precursor of mesoporous carbon trough chemical activation.
Objectives:
Preparation of mesoporous activated carbon by coupling hydrothermal carbonization and chemical activation of Argan nut shells;
Evaluating the performance of the activated material at the adsorption of Chromium (VI) (Cr (VI)).
2
Type here to search
29°C Mostly sunny
TUR
10:09
18/07/2021


Zoom Meeting
HAJJI Halima
h5: Mohd Shuaib
AKHSASSI Brahim
Recording...
Remaining : 06:30:27
COMPUTATIONAL CHEMISTRY FOR RESEARCH INTO THE IN SILICO DESIGN OF NEW CAMKKII INHIBITORS AGAINST OBESITY USING 3D-QSAR AND MOLECULAR DOCKING
Framed by :
Pr M.A.AJANA
Pr M.Bouachrine
Pr T.Lakhlifi
Presented by :
HAJJI Halima
Type here to search
36°C Mostly sunny
TUR
13:24
18/07/2021


Hall-5 Zoom Meeting
You are viewing S-3H-5K.R.Padma(Moderator)'s screen
View Options
S-3H-5K.R.Pad...
Sevgi Gezici
Fatima Ezzahra...
Yassine NACIRI
Hajjaji Abdelou...
Natural Products Possess Bioactive Agents Investigated for its Anticancer Potentiality
DR.K.R.PADMA
ASSISTANT PROFESSOR
SRI PADMAVATI MAHILA VISVA VIDYALAYAM WOMEN'S UNIVERSITY-TIRUPATI-INDIA
DR.K.R.DON
READER, SREE BALAJI DENTAL COLLEGE, BHARTHI UNIVERSITY OF HIGHER EDUCATION & RESEARCH, CHENNAI-INDIA
Unmute
Start Video
Participants
Chat
Share Screen
Pause/Stop Recording
Breakout Rooms
Reactions
Leave Room
Type here to search
37°C Partly sunny
TUR
17:15
18/07/2021

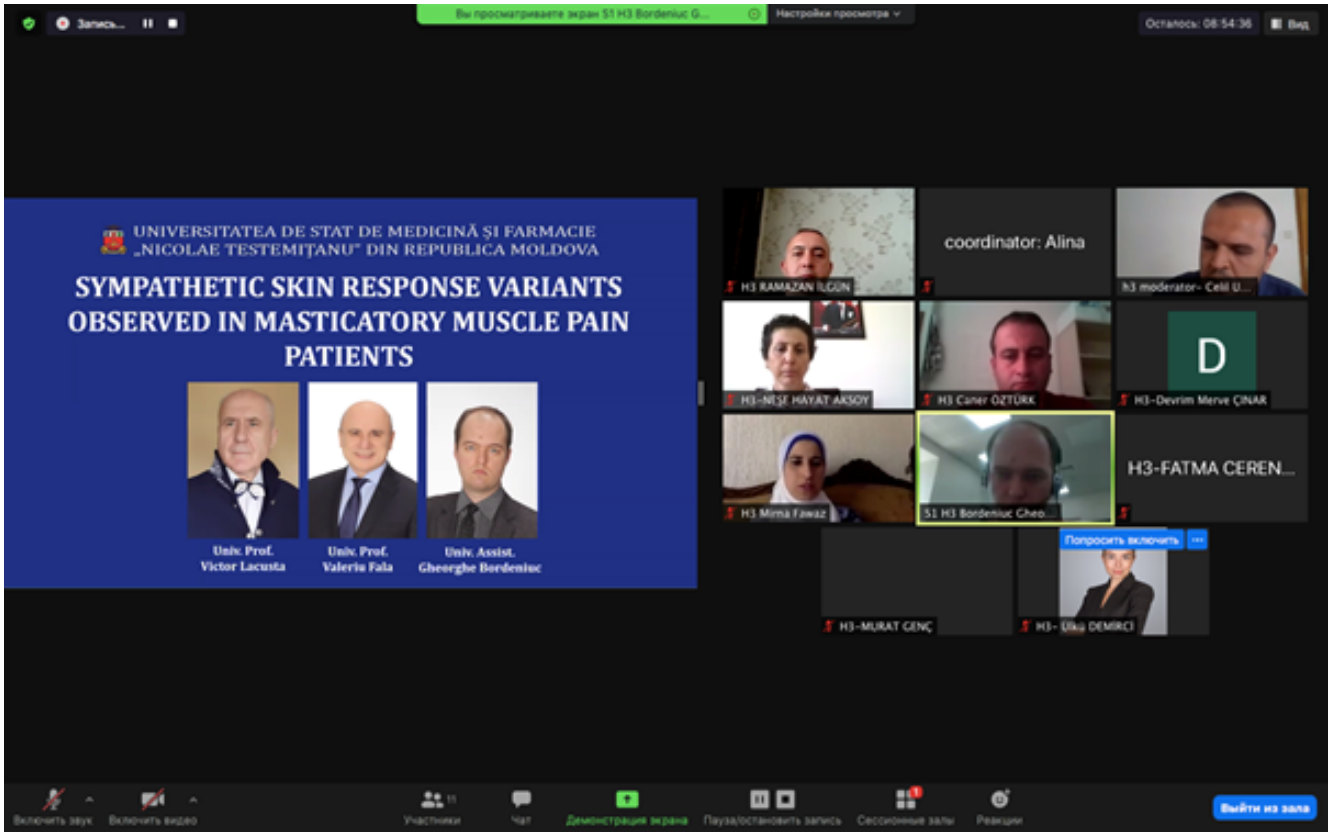

Zoom Meeting
Fatima Ezzahra...
Hajjaji Abdelou...
ABDELOUHED H...
Recording...
Remaining : 02:52:22
International
ICONTECH SYMPOSIUM-4
on Innovative Surveys in Positive Sciences
18-19 July 2021
Adana, Turkey
EFFECT OF SUPPORTING ELECTROLYTE ON THE EFFICIENCY OF ELECTROCHEMICAL TREATMENT OF ORGANIC POLLUTANTS
Fatima Ezzahra Titchou, Hicham Zazou, Hanane Afanga, Jamila El Gaayda, Rachid Ait Akbour, Mohamed Hamdani
1
Ibn Zohr University, Faculty of Sciences, Chemical department, BO 8106 – Dakhla district, Agadir, Morocco
Presented by:
TITCHOU Fatima Ezzahra
Type here to search
37°C Partly sunny
TUR
17:02
18/07/2021

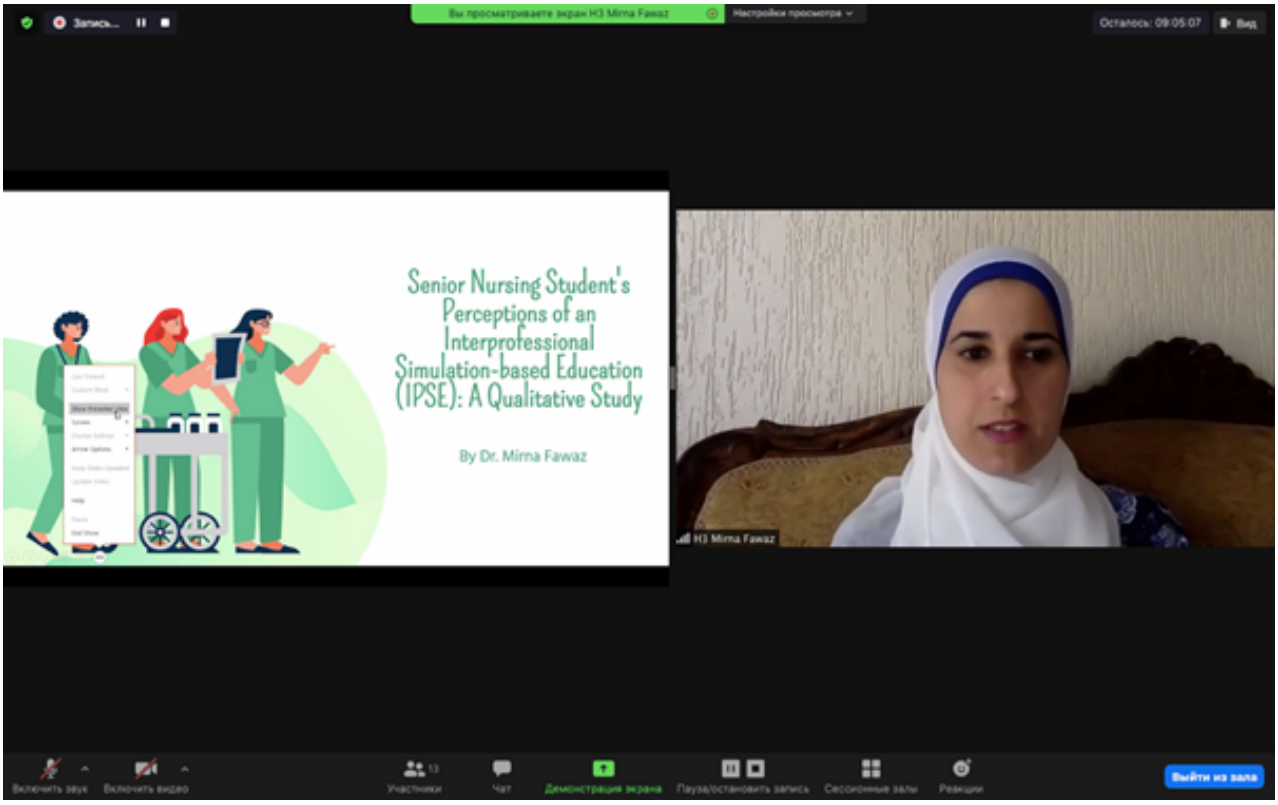

Recording...
Remaining : 09:23:14
H2_ moderator Nergis Kaya
H2-Observer
H2 Bahar Akçadağ
H2-Ozkan Özbek
H2 Aygenur GÜLER
H2 Erhan Emre ERDOĞMUŞ
H2-Mustafa Kuntoğlu

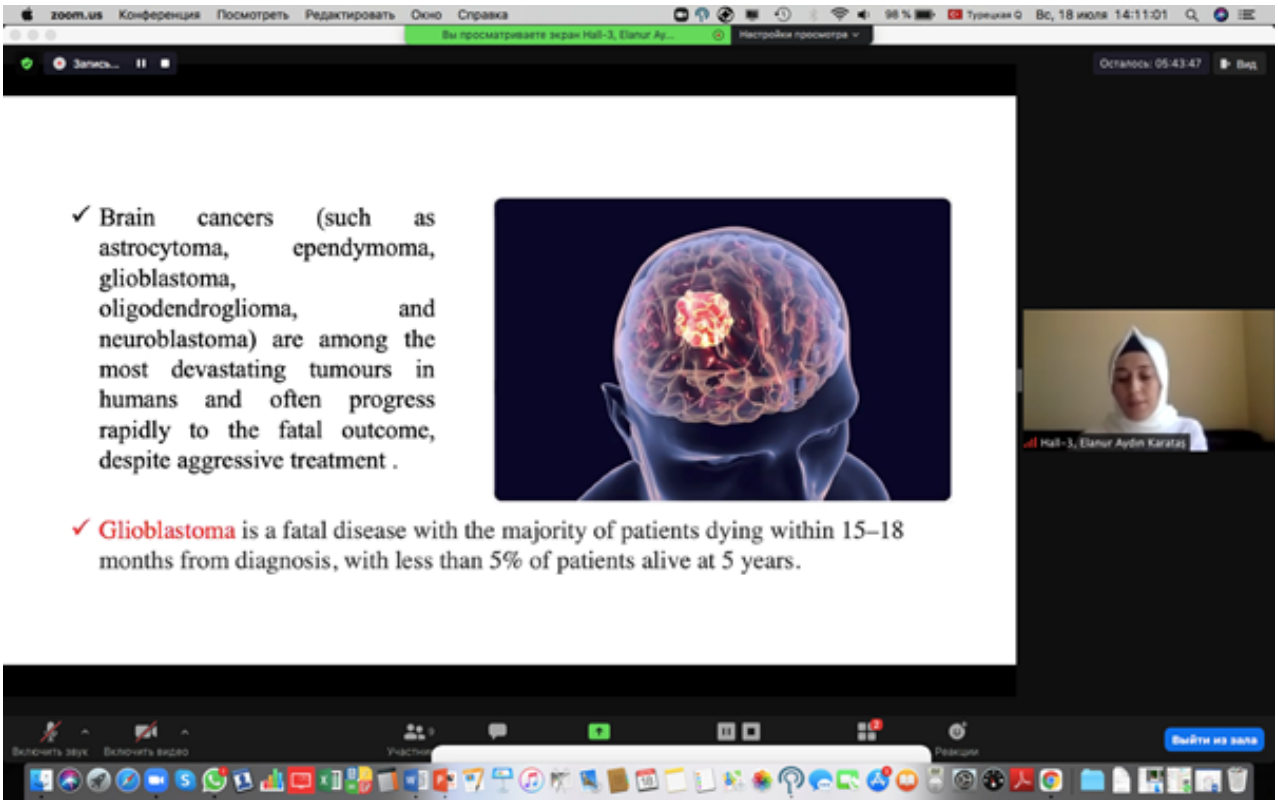

International
ICONTECH SYMPOSIUM-4
on Innovative Surveys in Positive Sciences
Adana, Turkey
Abdelmalek Essaâdi University
National School of Applied Sciences
of Tangier - Morocco
ENSA Tanger
International ICONTECH SYMPOSIUM-4 on
Innovative Surveys in Positive Sciences
A Scalable Architecture For the Big Data Project
Supervised by;
Pr. CHERKAOUI Abdeljabbar
Presented by;
ERREZGOUNY Abderrachid
Laboratory of Innovative Technologies-ENSA of Tangier

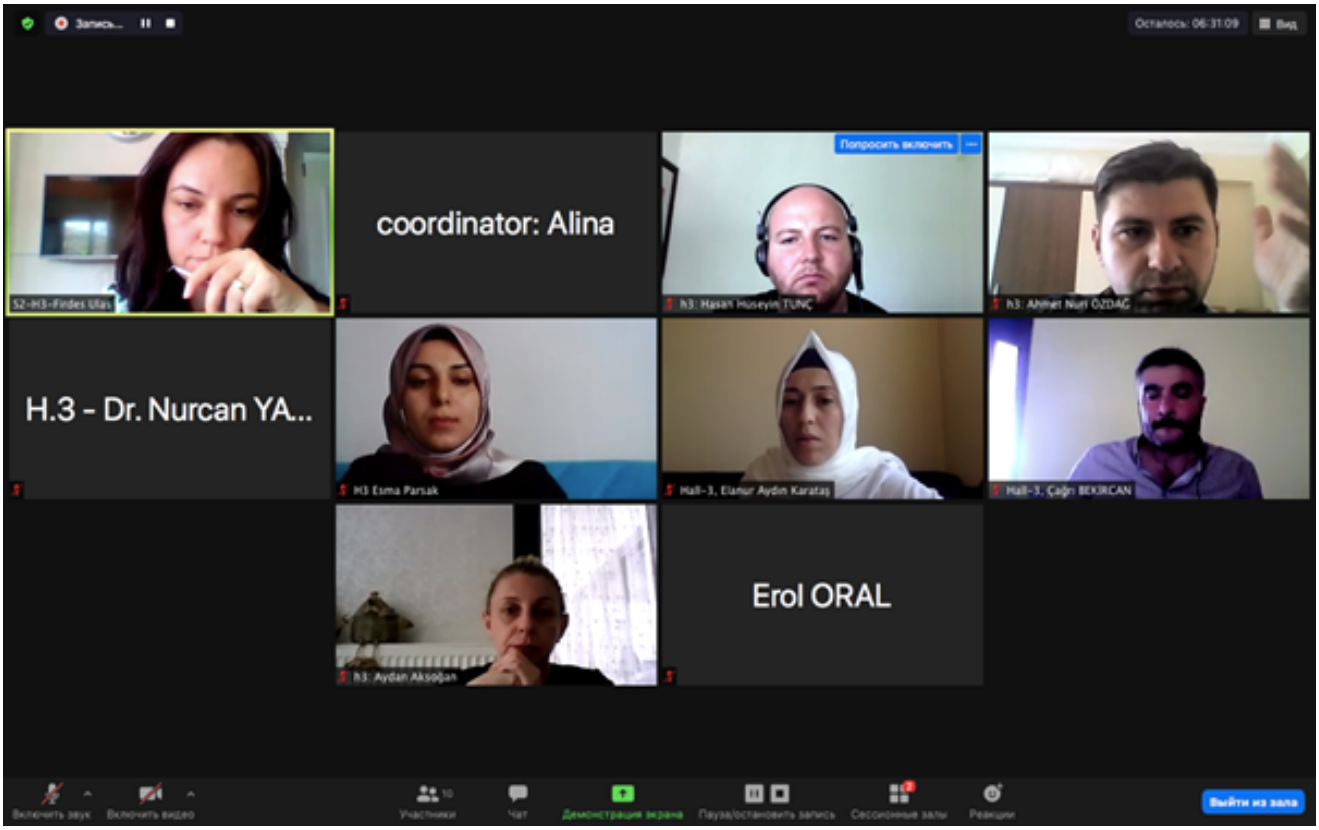
Presented by
Gaurav Chhabra (Student) & Nandni Sharma (Student)
Department of Aerospace Engineering,
Punjab Engineering College (Deemed to be University)
Chandigarh, India

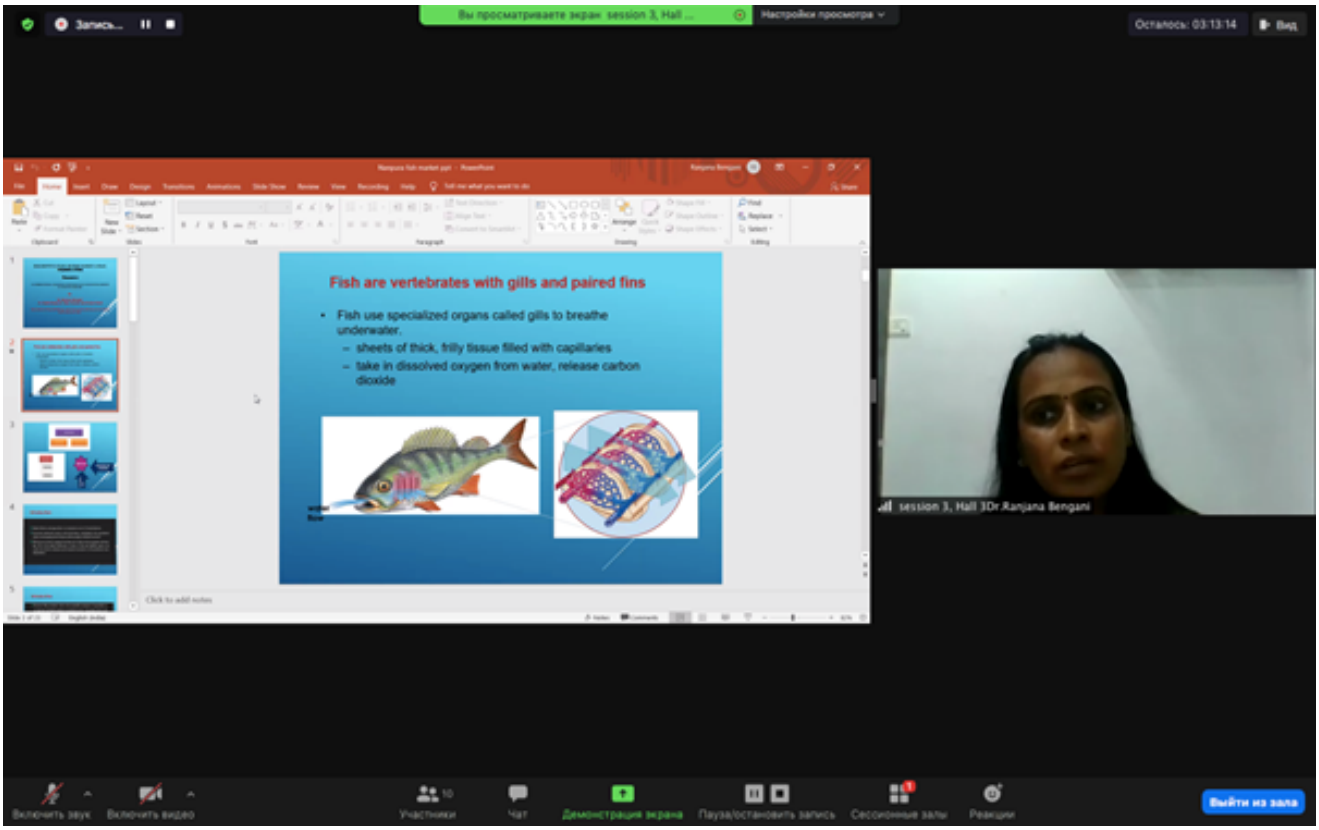
Supervised by
Prof Abha Gupta
Department of Aerospace Engineering,
Punjab Engineering College (Deemed to be University)
Chandigarh, India

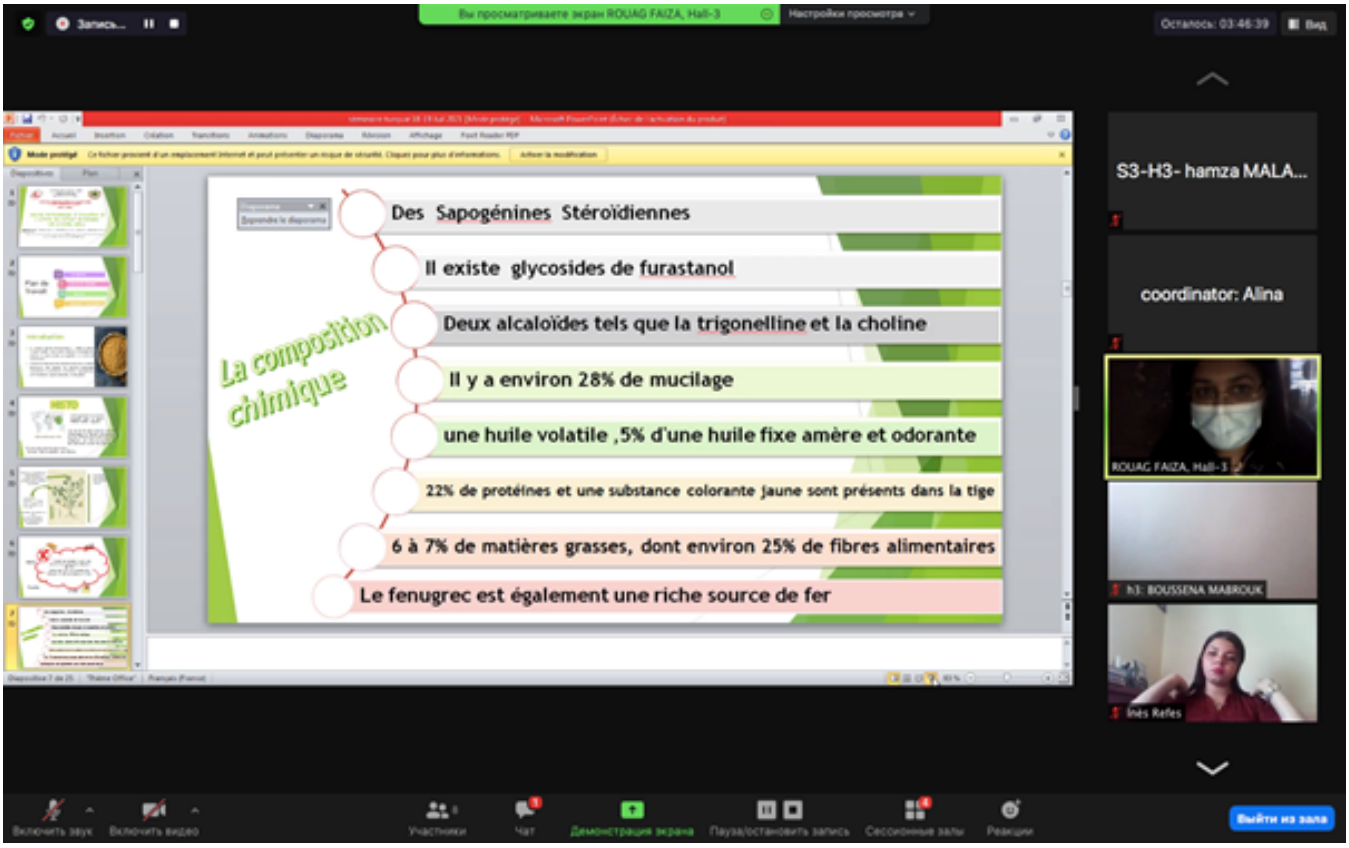


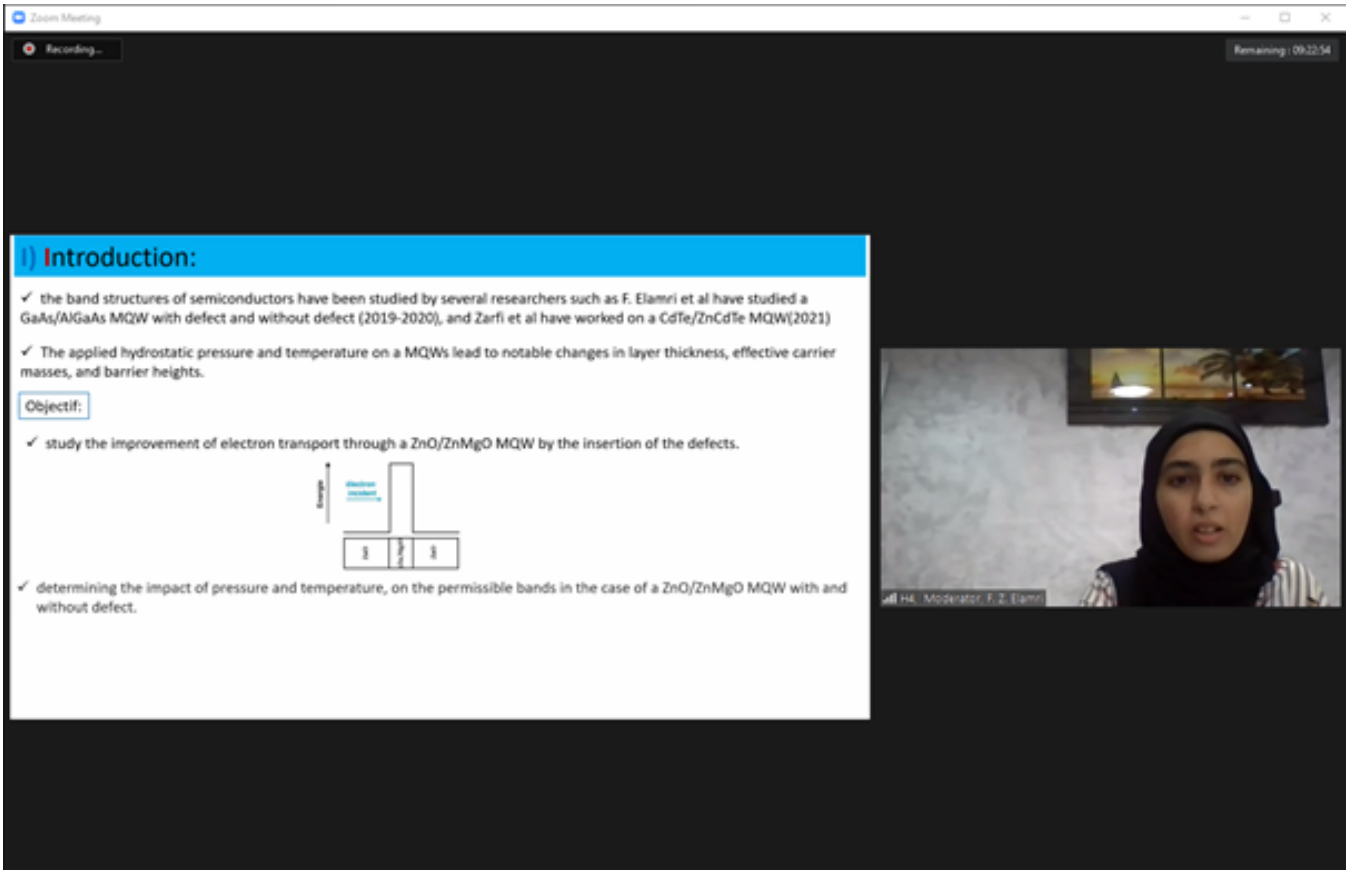

Senior Nursing Student's Perceptions of an Interprofessional Simulation-based Education (IPSE): A Qualitative Study
By Dr. Mirna Fawaz
H3 Mirna Fawaz

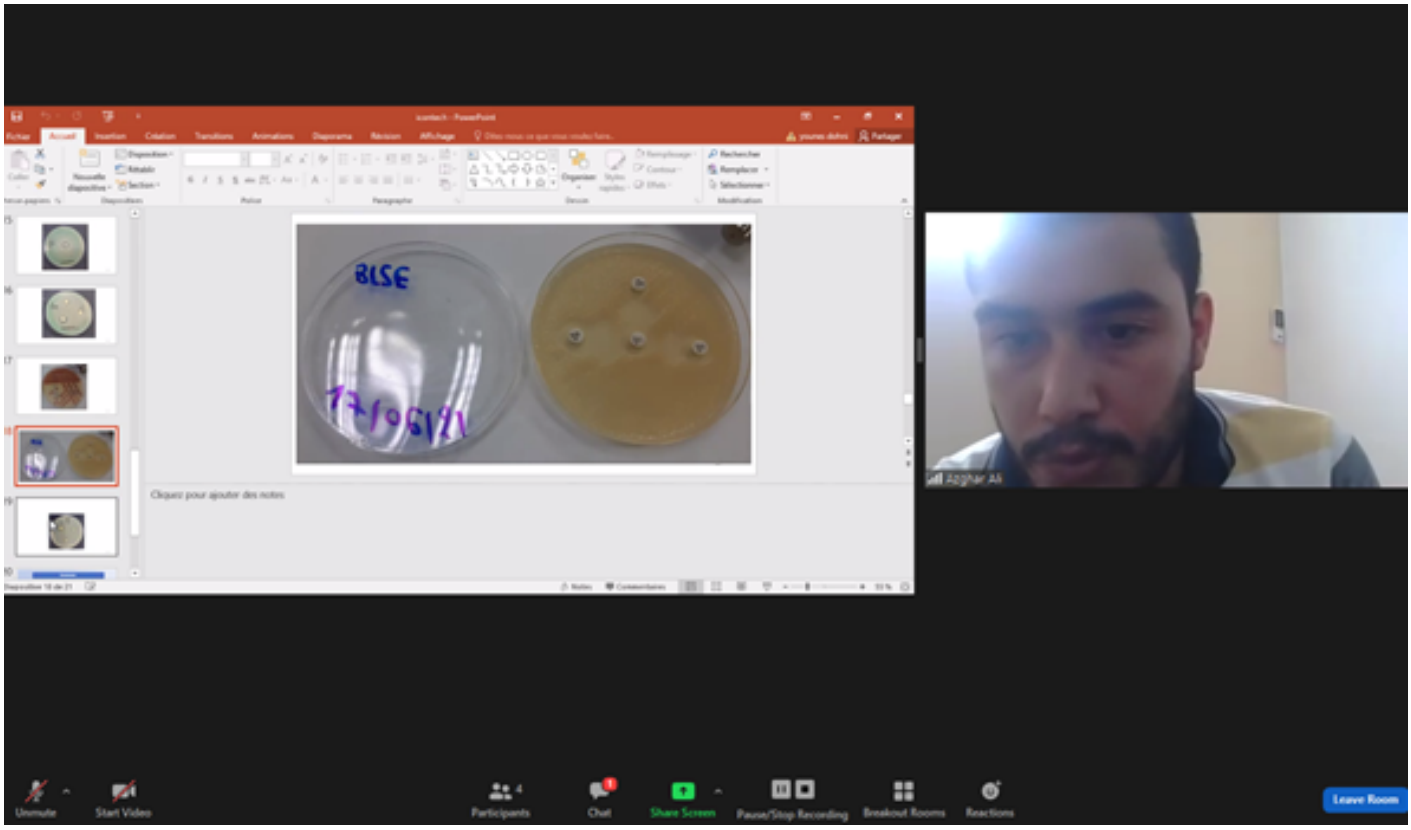

✓ Brain cancers (such as astrocytoma, ependymoma, glioblastoma, oligodendroglioma, and neuroblastoma) are among the most devastating tumours in humans and often progress rapidly to the fatal outcome, despite aggressive treatment .
✓ Glioblastoma is a fatal disease with the majority of patients dying within 15–18 months from diagnosis, with less than 5% of patients alive at 5 years.

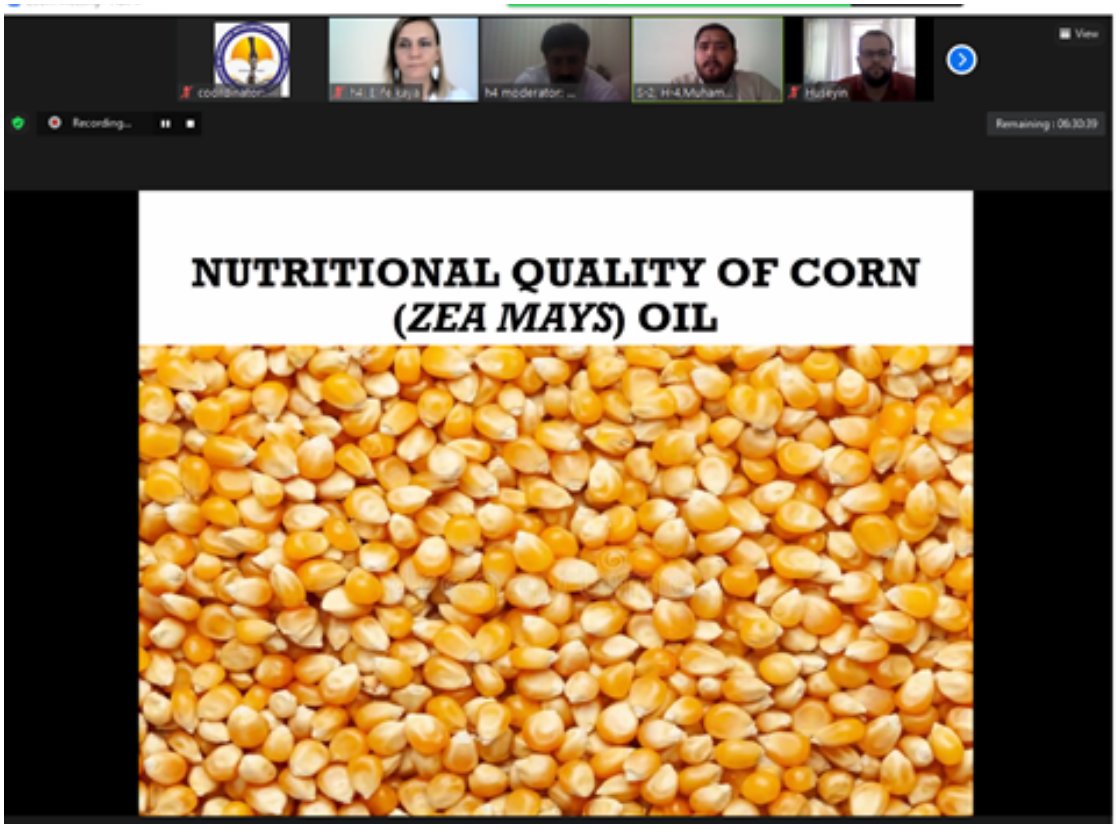

coordinator: Alina
H.3 - Dr. Nurcan YA...
Erol ORAL

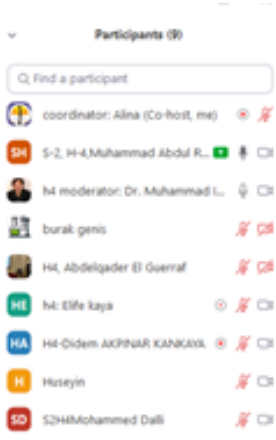

Fish are vertebrates with gills and paired fins
Fish use specialized organs called gills to breathe underwater.
sheets of thick, frilly tissue filled with capillaries
take in dissolved oxygen from water, release carbon dioxide
session 3, Hall 3Dr.Ranjana Bengani

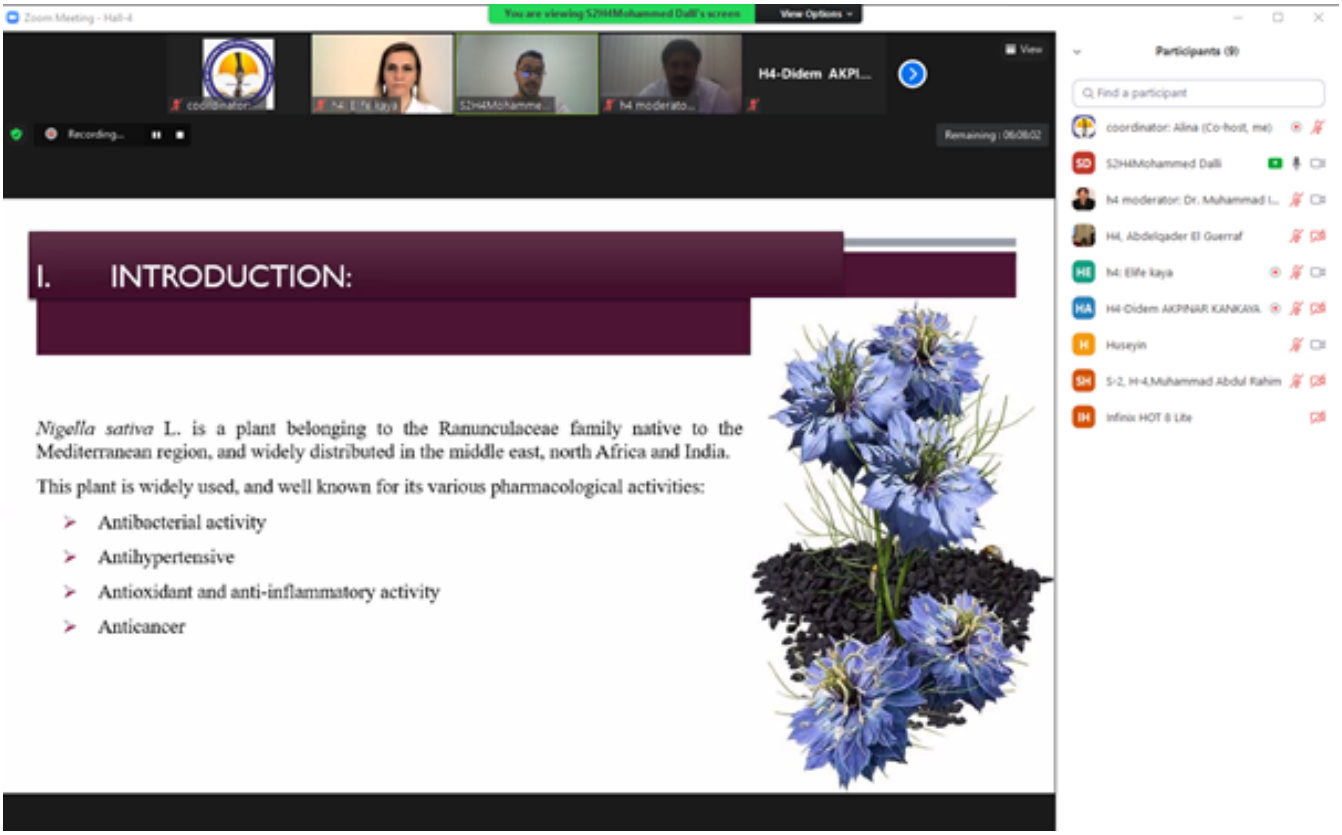

La composition chimique
Des Sapogénines Stéroïdiennes
Il existe glycosides de furastanol
Deux alcaloïdes tels que la trigonelline et la choline
Il y a environ 28% de mucilage
une huile volatile ,5% d'une huile fixe amère et odorante
22% de protéines et une substance colorante jaune sont présents dans la tige
6 à 7% de matières grasses, dont environ 25% de fibres alimentaires
Le fenugrec est également une riche source de fer
S3-H3- hamza MALA...
coordinator: Alina
ROUAG FAIZA, Hall-3
h3: BOUSSENA MABROUK
Inès Refes

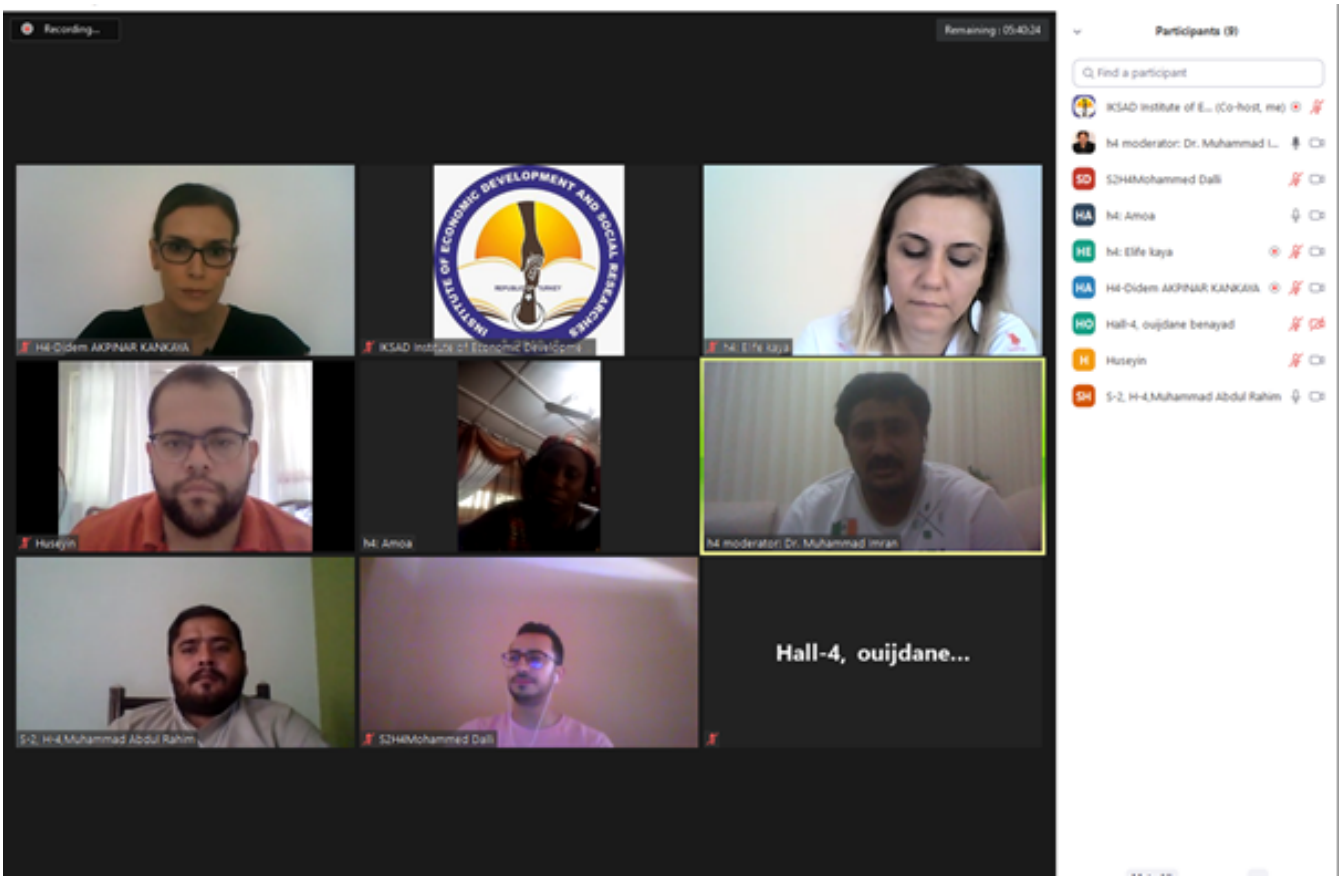

I) Introduction:
✓ the band structures of semiconductors have been studied by several researchers such as F. Elamri et al have studied a GaAs/AlGaAs MQW with defect and without defect (2019-2020), and Zarfi et al have worked on a CdTe/ZnCdTe MQW(2021)
✓ The applied hydrostatic pressure and temperature on a MQWs lead to notable changes in layer thickness, effective carrier masses, and barrier heights.
Objectif:
✓ study the improvement of electron transport through a ZnO/ZnMgO MQW by the insertion of the defects.
✓ determining the impact of pressure and temperature, on the permissible bands in the case of a ZnO/ZnMgO MQW with and without defect.


BLSE
Unmute
Start Video
Participants
Chat
Share Screen
Pause/Stop Recording
Breakout Rooms
Reactions
Leave Room


NUTRITIONAL QUALITY OF CORN
(ZEA MAYS) OIL


Participants (9)
Find a participant
coordinator: Alina (Co-host, me)
S-2, H-4,Muhammad Abdul R...
h4 moderator: Dr. Muhammad I...
burak genis
H4, Abdelqader El Guerraf
h4: Elife kaya
H4-Didem AKPINAR KANKAYA
Huseyin
S2H4Mohammed Dalli


Zoom Meeting - Hall-4
You are viewing S2H4Mohammed Dalli's screen
View Options
H4-Didem AKPI...
Recording...
Remaining | 06:08:02
I. INTRODUCTION:
Nigella sativa L. is a plant belonging to the Ranunculaceae family native to the Mediterranean region, and widely distributed in the middle east, north Africa and India.
This plant is widely used, and well known for its various pharmacological activities:
Antibacterial activity
Antihypertensive
Antioxidant and anti-inflammatory activity
Anticancer
Participants (9)
Find a participant
coordinator: Alina (Co-host, me)
S2H4Mohammed Dalli
h4 moderator: Dr. Muhammad I...
H4, Abdelqader El Guerraf
h4: Elife kaya
H4-Didem AKPINAR KANKAYA
Huseyin
S-2, H-4,Muhammad Abdul Rahim
Infinix HOT 8 Lite


Recording...
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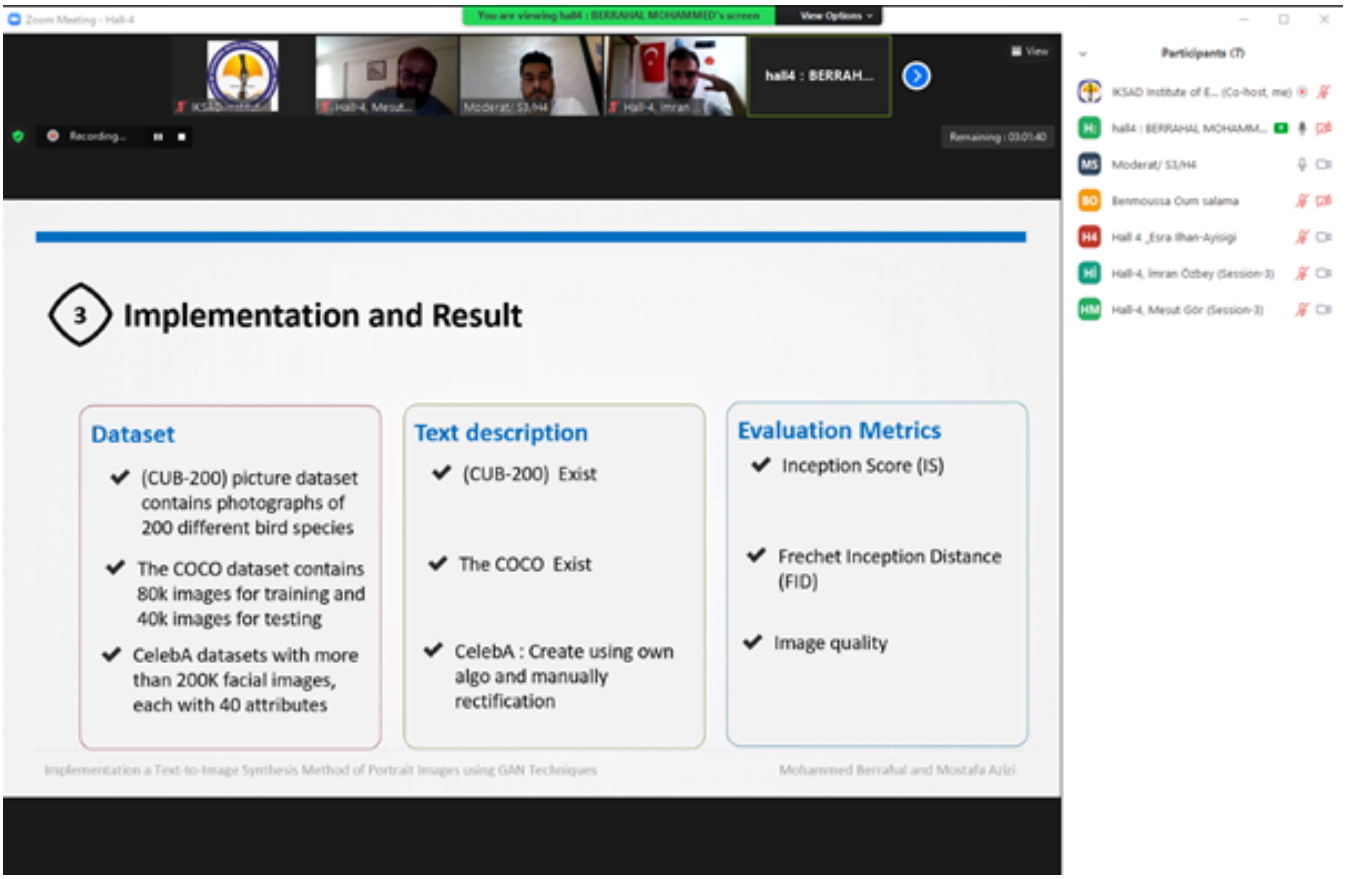
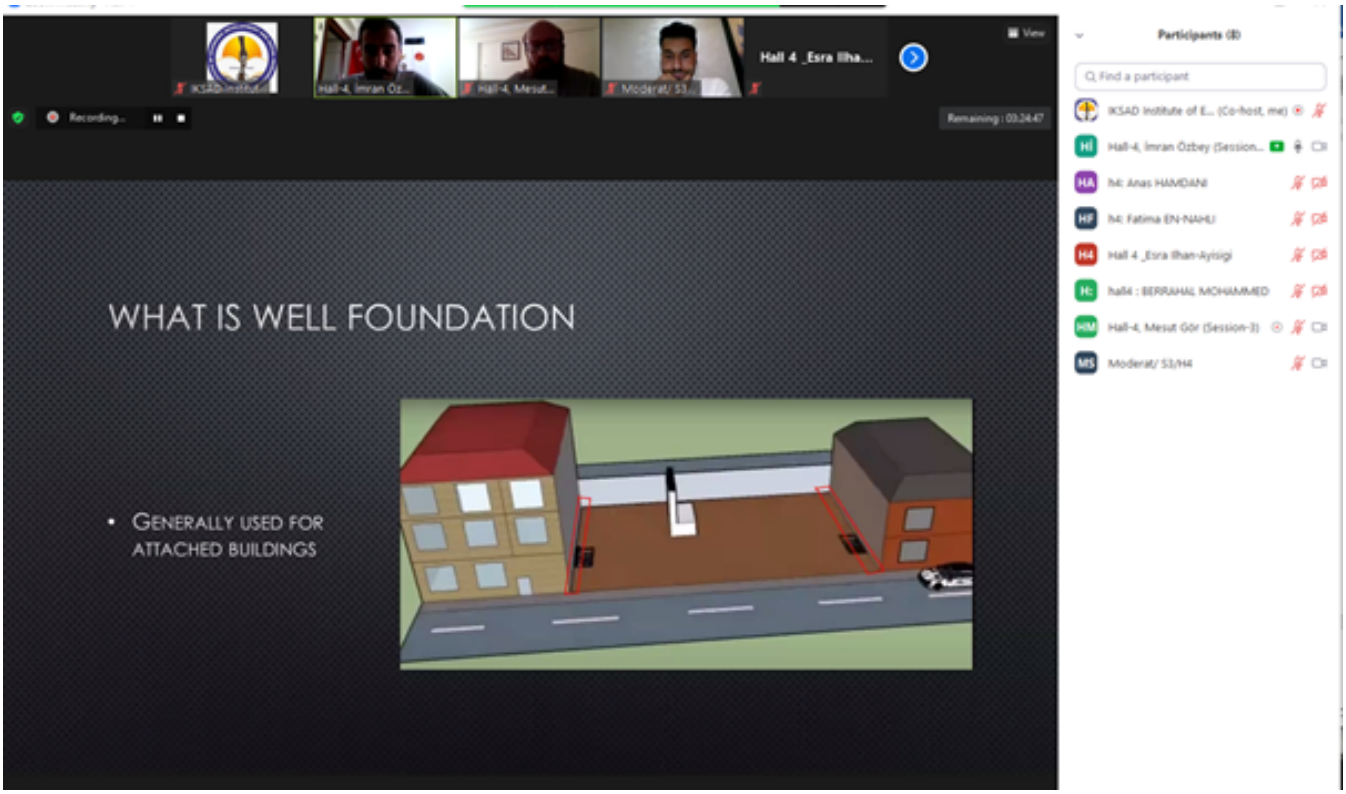
H4-Didem AKPINAR KANKAYA
IKSAD Institute of Economic Development
h4: Elife kaya
Huseyin
h4: Amoa
h4 moderator: Dr. Muhammad Imran
S-2, H-4,Muhammad Abdul Rahim
S2H4Mohammed Dalli
Hall-4, ouijdane...
Participants (9)
Find a participant
IKSAD Institute of E... (Co-host, me)
h4 moderator: Dr. Muhammad I...
S2H4Mohammed Dalli
h4: Amoa
h4: Elife kaya
H4-Didem AKPINAR KANKAYA
Hall-4, ouijdane benayad
Huseyin
S-2, H-4,Muhammad Abdul Rahim


3 Implementation and Result
Dataset
(CUB-200) picture dataset contains photographs of 200 different bird species
The COCO dataset contains 80k images for training and 40k images for testing
CelebA datasets with more than 200K facial images, each with 40 attributes
Text description
(CUB-200) Exist
The COCO Exist
CelebA : Create using own algo and manually rectification
Evaluation Metrics
Inception Score (IS)
Frechet Inception Distance (FID)
Image quality
Implementation a Text-to-Image Synthesis Method of Portrait Images using GAN Techniques
Mohammed Berrahal and Mostafa Azizi


WHAT IS WELL FOUNDATION
GENERALLY USED FOR ATTACHED BUILDINGS

International
ICONTECH SYMPOSIUM-4
on Innovative Surveys in Positive Sciences

July 18-19, 2021

Adana, Turkey

SYMPOSIUM PROGRAM

Online (with Video Conference) Presentation

Participating Countries: 15

Turkey, France, Moldova, Morocco, Algeria, Pakistan, Indonesia, Nigeria, India, Ukraine, South Africa, Azerbaijan, China, Ukraine, Iran

Meeting ID: 899 7656 3547
Passcode: 868075

Join Zoom Meeting
https://us02web.zoom.us/j/89976563547?pwd=KzJOZFZab0JmbE5nbFc2d0RBY3FFdz09

ÖNEMLİ, DİKKATLE OKUYUNUZ LÜTFEN / IMPORTANT, PLEASE READ CAREFULLY

Önemli, Dikkatle Okuyunuz Lütfen

- ✓ Kongremizde Yazım Kurallarına uygun gönderilmiş ve bilim kurulundan geçen bildiriler için online (video konferans sistemi üzerinden) sunum imkanı sağlanmıştır.
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- ✓ Moderator is responsible for the presentation and scientific discussion (question-answer) section of the session.

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Meeting ID: 899 7656 3547
Passcode: 868075

Session-1, Hall-1
18.07.2021
Moderator: Assoc. Prof. Dr. Nilgun ULUTASDEMIR
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 10:00 – 12:30

Title	Author(s)	Affiliation
ETHICS IN PSYCHOLOGICAL COUNSELING	Assoc. Prof. Dr. Nilgun ULUTASDEMIR	Gümüşhane University, Faculty of Health Science
	Res. Assist. Sevda UZUN	Gümüşhane University, Faculty of Health Science
ETHICAL THEORIES AND USE IN NURSING	Assoc. Prof. Dr. Nilgun ULUTASDEMIR	Gümüşhane University, Faculty of Health Science
	Lect. Nursen KULAKAC	Gümüşhane University, Faculty of Health Science
WOMEN WHO HAD PRETERM LABOR DURING PREGNANCY BUT DELIVERED THEIR BABIES AT TERM; POSTPARTUM 6TH WEEK EXPERIENCES	Gülden AYNACI	PhD, Trakya University, Health Science Undergraduate School, Edirne, TURKEY
THE EFFECTS OF THE COMBINED ADMINISTRATION OF TIMOQUINONE AND RAPAMYCIN ON PENICILLIN INDUCED EPILEPTIFORM ACTIVITY IN RATS: AN ELECTROPHYSIOLOGICAL STUDY	Dr. Özge BEYAZÇİÇEK	Duzce University, Medical School, Department of Physiology, Duzce, Turkey
	Assist. Prof. Dr. Ersin BEYAZÇİÇEK	Duzce University, Medical School, Department of Physiology, Duzce, Turkey
ANTIBACTERIAL EFFECT OF TORTOISESHELL (PLANTAGO MAJOR) LEAVES	Perihan AKBAŞ	Kafkas University, Atatürk Health Services Vocational School, Medical Technical Services Department, Kars
A NEW HYBRID TECNIQUE IN LAPAROSCOPIC GROIN HERNIA REPAIR: TAPP + PLUG MESH (VIDEO PRESENTATION)	Dr. Mustafa Sami BOSTAN	Tokat Gaziosmanpaşa Üniversitesi, Tıp Fakültesi Genel Cerrahi Anabilim Dalı
NEUROLOGICAL EFFECTS OF COVID-19	Zeynep AKYOL	İstanbul Şişli Meslek Yüksek Okulu, Tıbbi Hizmetler ve Teknikler Bölümü, Radyoterapi Programı, İstanbul, Türkiye
NEW HORIZONS IN RHINOPLASTY	Assist. Ptof. Dr. Mustafa ÇAPAR	Avrasya University, Turkey
THE RELATIONSHIP OF ATTACHMENT WITH PSYCHOLOGICAL NEEDS SATISFIED AND EMOTIONAL INTELLIGENCE IN ADOLESCENTS	Meral BAYRAKTAR	Yüzüncü Yıl University, Turkey
	Ferhat KARDAŞ	Yüzüncü Yıl University, Turkey
EVALUATION OF ADAPTATION DIFFICULTY IN ELDERLY INDIVIDUALS AND AFFECTING FACTORS	Res. Assist. Dr. Safiye YANMIŞ	Erzincan Binali Yıldırım University Faculty of Health sciences
	Assoc. Prof. Dr. Gülcan BAHÇECİOĞLU TURAN	Firat University University Faculty of Health sciences
	Res. Assist. Dr. Fatma GÜNDÜZ ORUÇ	Giresun University University Faculty of Health sciences
MATHEMATICAL MODELING OF PROTEASE PRODUCTION BY MICROBACTERIUM ARBORESCENS AND STATISTICAL EVALUATION OF MODEL PREDICTIONS	Assist. Prof. Dr. Hasan Buğra ÇOBAN	Dokuz Eylul University, Izmir International Biomedicine and Genome Institute, Genome Science and Molecular Biotechnology Department, Izmir, Turkey. Dokuz Eylul University, BioIzmir International Health Technologies Development and Accelerator, Izmir, Turkey
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Session-1, Hall-2
18.07.2021
Moderator: Assist. Prof. Dr. Nergis KAYA
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 10:00 – 12:30

Title	Author(s)	Affiliation
PERFORMANCE EVALUATION OF MQL AND DRY MILLING CONDITIONS ON SURFACE ROUGHNESS OF AISI 1040 MEDIUM CARBON STEEL	Res. Assist. Dr. Mustafa KUNTOĞLU	Selcuk University
CHARPY IMPACT BEHAVIORS OF BASALT FIBER REINFORCED COMPOSITES ENHANCED BY SILICA NANOPARTICLES	Dr. Özkan Özbek	Kilis 7 Aralık University, Mechanical Engineering Department
	Assoc. Prof. Dr. Ömer Yavuz Bozkurt	Gaziantep University, Mechanical Engineering Department
BONDING CURVED GEOMETRY SURFACES AND RESEARCH OF MECHANICAL CHARACTERISTICS	Assoc. Prof. Dr. Mahir UZUN	İnönü University, Turkey
	Bahar AKÇADAĞ	İnönü University, Turkey
THE EFFECT OF OXIDE LAYERS ON THE TENSILE TEST RESULT OF A356 ALLOYS	Makbule Pozan	CMS Jant ve Makina Sanayi A.Ş.
	Burak Bostancıoğlu	CMS Jant ve Makina Sanayi A.Ş.
	Ayhan Karataş	CMS Jant ve Makina Sanayi A.Ş.
SA/ZB REINFORCED EPOXY COMPOSITE PRODUCTION AND CHARACTERIZATION	Hakan ŞAHAL	Munzur University, Vocational School, Department of Food Processing
	Ercan AYDOĞMUŞ	Fırat University, Faculty of Engineering, Department of Chemical Engineering
EVALUATION OF THE CYTOTOXIC EFFECT OF DIACETIN (E1517) ON ALLIUM CEPA L.	Assist. Prof. Dr. Nergis KAYA	Canakkale Onsekiz Mart University, Biga Vocational School
ENHANCEMENT OF NEUTRON ABSORPTION OF PEG-300 DOPED POLYURETHANE FOAMS	Erhan Emre ERDOĞMUŞ	Iskenderun Technical University, Institute of Graduate Studies, Department of Managing Chemical, Biological, Radioactive, Nuclear Risks
	Assist. Prof. Dr. Nuray KÜP AYLIKCI	Iskenderun Technical University, Department of Engineering Sciences
	Assoc. Prof. Dr. Volkan AYLIKCI	Iskenderun Technical University, Metallurgical and Material Science Engineering
	Prof. Dr. Tolga DEPCİ	Iskenderun Technical University, Petroleum and Natural Gas Engineering
THE TOXICITY INDUCED BY GEMIFLOXACIN IN SACCHAROMYCES CEREVISIAE	Ayşenur Güler	Pamukkale University, Turkey
	Assist. Prof. Dr. Berna Kavakcıoğlu Yardımcı	Pamukkale University, Turkey

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Session-1, Hall-3
18.07.2021
Moderator: Assist. Prof. Dr. Celil UĞURLU
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 10:00 – 12:30

Title	Author(s)	Affiliation
EFFECTS OF ARABINOSE AND NARINGIN ON DOG SEMEN	Neşe Hayat AKSOY	Aksaray University, Faculty of Veterinary Medicine, Department of Biochemistry
	Caner ÖZTÜRK	Aksaray University, Faculty of Veterinary Medicine, Department of Reproduction and Artificial Insemination
THE AORTIC ARCH AND BRANCHES ABOUT JAPANESE QUAILS (COTURNIX JAPONICA)	Prof. Dr. Zekeriya ÖZÜDOĞRU	Aksaray University, Department of Anatomy, Faculty of Veterinary Medicine, Aksaray
	Assoc. Prof. Dr. Ramazan İLGÜN	Aksaray University, Department of Anatomy, Faculty of Veterinary Medicine, Aksaray
ABNORMAL BEHAVIORS IN CAT AND DOGS	Murat GENÇ	Ataturk University
	Merve Devrim ÇINAR	Öncü Veterinary Clinic
SECOND BRAIN GUT MICROBIOTA AND ITS ROLE IN THE TREATMENT OF DISEASES	Assoc. Prof. Dr Ibrahim Ozan TEKELI	Dept. of Pharmacology and Toxicology, Fac. of Veterinary Med. University of Hatay Mustafa Kemal, Antakya 31060, Hatay
	Res. Asst. Fatma Ceren KIRGIZ	Dept. of Pharmacology and Toxicology, Fac. of Veterinary Med. University of Hatay Mustafa Kemal, Antakya 31060, Hatay
SENIOR NURSING STUDENT'S PERCEPTIONS OF AN INTERPROFESSIONAL SIMULATION-BASED EDUCATION (IPSE): A QUALITATIVE STUDY	Assoc. Prof. Dr. Mirna Fawaz	Beirut Arab University, Nursing Department
SYMPATHETIC SKIN RESPONSE VARIANTS OBSERVED IN MASTICATORY MUSCLE PAIN PATIENTS	Univ. Asst. Gheorghe BORDENIUC	State University of Medicine and Pharmacy, Faculty of Dentistry, Department of Therapeutic Dentistry, Chișinău, Republic of Moldova
	Univ. Prof. Victor LACUSTA	State University of Medicine and Pharmacy, Faculty of Residency, Department of Alternative and Complementary Medicine, Chișinău, Republic of Moldova
	Univ. Prof. Valeriu FALA	State University of Medicine and Pharmacy, Faculty of Dentistry, Department of Therapeutic Dentistry, Chișinău, Republic of Moldova
TREATMENT OF PATIENTS WITH ILEUS CAUSED BY PHYTOBEZOAR	Assist. Prof. Dr. Celil UĞURLU	Department of General Surgery, Faculty of Medicine, Tokat Gaziosmanpasa University
ADHERENCE TO VEGETARIAN DIET AND WEIGHT LOSS: A META-ANALYSIS	Ülkü Demirci	Beykent University, School of Health Sciences, Nutrition and Dietetics, Istanbul, Turkey
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Session-1, Hall-4
18.07.2021
Moderator: F. Z. Elamri & H'MAIDA KHALIHANA
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 10:00 – 12:30

Title	Author(s)	Affiliation
FATIGUE ANALYSIS TO OF EXCHANGER HEAT TUBE CASE	OTMANE ABOULHASSANE	Département Mécanique, FST, Université Sidi Mohammed ben Abdellah de Fès
	Prof. Dr. ABDELHADI EL HAKIMI	Département Mécanique, FST, Université Sidi Mohammed ben Abdellah de Fès
	Prof. Dr. ABDERRAHIM CHAMAT	Département Industriel, FST, Université Sidi Mohammed ben Abdellah de Fès
	Prof. Dr. ABDELHAMID TOUACHE	Département Mécanique, FST, Université Sidi Mohammed ben Abdellah de Fès
IMPACTS ECOLOGIQUES ET SANITTAIRE DE LA QUALITE PHYSICO-CHIMIQUE DE LA NAPPE PHREATIQUE D'ASSA-ZAG (SUD DU MAROC)	H'MAIDA KHALIHANA	Université Mohammed V, Institut Scientifique - Rabat
	BOULAHYA AZIZ	Université Mohammed V, Institut Scientifique - Rabat
	Prof. Dr. Fekhaoui Mohamed	Université Mohammed V, Institut Scientifique - Rabat
THE ELECTRONIC PROPERTIES OF THE GROUND STATE IN A TOROIDAL SHAPED QUANTUM DOT	R.Boussetta	university mohammed first, Faculty of sciences, Physique, Oujda, Morroco
	L.Belamkadem	university mohammed first, Faculty of sciences, Physique, Oujda, Morroco
	Dr. O.Mommadi	university mohammed first, Faculty of sciences, Physique, Oujda, Morroco
	M.Chanafi	university mohammed first, Faculty of sciences, Physique, Oujda, Morroco
	M.Hbibi	university mohammed first, Faculty of sciences, Physique, Oujda, Morroco
	Prof. Dr. A.El moussaoui	The Regional Centre for the Professions of Education and Training, Oujda, Morocco
	Prof. Dr. A.Kerkour miad	university mohammed first, Oujda, Morroco
PRESSURE AND TEMPERATURE IMPACT ON THE CREATION OF ELECTRONIC STATES INDUCED BY A MQWS DEFECTIVE STRUCTURE	A. Baidri	Laboratory of Materials, Wave, Energy and Environmental, Faculty of Sciences, Mohammed first University, 60000, Oujda, Morocco
	F. Z. Elamri	Laboratory of Materials, Wave, Energy and Environmental, Faculty of Sciences, Mohammed first University, 60000, Oujda, Morocco
	Y. Ben-Ali	Pludiscplinary Faculty of Taza, USMBA, Fez, Morocco
	F. Falyouni	Laboratory of Materials, Wave, Energy and Environmental, Faculty of Sciences, Mohammed first University, 60000, Oujda, Morocco
	D. Bria	Laboratory of Materials, Wave, Energy and Environmental, Faculty of Sciences, Mohammed first University, 60000, Oujda, Morocco

ANTIBACTERIAL ACTIVITY OF CITRUS AURANTIUM (L) PEEL EXTRACTS	BENAYAD OUIJDANE	Mohammed First University (MFU), Faculty Of Sciences, Oujda (FSO), Laboratory of Applied Chemistry and Environment (LACE) 60000 Oujda PO 717, Morocco
	MIMOUNI MOSTAFA	Mohammed First University (MFU), Faculty Of Sciences, Oujda (FSO), Laboratory of Applied Chemistry and Environment (LACE) 60000 Oujda PO 717, Morocco
	TIJI SALIMA	Mohammed First University (MFU), Faculty Of Sciences, Oujda (FSO), Laboratory of Applied Chemistry and Environment (LACE) 60000 Oujda PO 717, Morocco
ANTIBACTERIAL ACTIVITY OF ARTEMISIA HERBA-ALBA ON MULTIDRUG-RESISTANT BACTERIA	AZGHAR Ali	Laboratory of Microbiology. Mohammed VI University Hospital Center / Faculty of Medicine and Pharmacy, University Mohammed the first Oujda, Morocco
	DALLI Mohammed	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health, University of Mohammed the First, Faculty of Sciences, Oujda, Morocco
	BELBACHIR Yousra	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health, University of Mohammed the First, Faculty of Sciences, Oujda, Morocco
	TAHRI Maroua	Laboratory of Microbiology. Mohammed VI University Hospital Center / Faculty of Medicine and Pharmacy, University Mohammed the first Oujda, Morocco
	ALEB Adil	Laboratory of Microbiology. Mohammed VI University Hospital Center / Faculty of Medicine and Pharmacy, University Mohammed the first Oujda, Morocco
IN SILICO DESIGN OF NOVEL PHENYLAMINOPYRIMIDINE (THIO) UREA DERIVATIVES AS CK2 INHIBITORS, USING 2D QSAR, MOLECULAR DOCKING AND ADMET PREDICTION	Amina Goudzal	Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, Fez, Morocco
	Abdellah El Aisouq	LPME laboratory,Faculty of sciences and technology Sidi Mohamed Ben Abdellah University, Fez, Morocco
	Abdelkrim Ouammou	Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, Fez, Morocco
BIOACCUMULATION OF METALS IN SEDIMENT AND MARINE SPECIES CAPTURED FROM THE AGADIR BAY, MOROCCO	Abir CHAHOURI	Laboratory of aquatic systems: marine and continental environment; Team: "Biology, Ecology and Valorization of Marine Resources", Department of Biology, Faculty of Sciences, University Ibn Zohr. BP: 8106, 80000 Agadir, Morocco
	Hanan OUCHENE	Laboratory of aquatic systems: marine and continental environment; Team: "Biology, Ecology and Valorization of Marine Resources", Department of Biology, Faculty of Sciences, University Ibn Zohr. BP: 8106, 80000 Agadir, Morocco
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	Abdellatif MOUKRIM	Laboratory of aquatic systems: marine and continental environment; Team: "Biology, Ecology and Valorization of Marine Resources", Department of Biology, Faculty of Sciences, University Ibn Zohr. BP: 8106, 80000 Agadir, Morocco
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Session-1, Hall-5
18.07.2021
Moderator: Dr. Ilyas CHOUAYBI & HAMDAOUI NORA
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 10:00 – 12:30

Title	Author(s)	Affiliation
SYNTHESIS AND CHARACTERIZATION OF HYDROCALUMITE CaAl-LDH-Cl MATERIAL FOR ULTRAFAST REMOVAL OF ACID RED 97 DYE	Dr. Ilyas CHOUAYBI	Laboratory of Physical-Chemistry of Materials, Department of Chemistry, Chouaïb Doukkali University, Faculty of Science, El Jadida, Morocco
	Prof. El Mostapha MOUJAHID	Laboratory of Physical-Chemistry of Materials, Department of Chemistry, Chouaïb Doukkali University, Faculty of Science, El Jadida, Morocco
	Dr. Hasna OUASSIF	Laboratory of Physical-Chemistry of Materials, Department of Chemistry, Chouaïb Doukkali University, Faculty of Science, El Jadida, Morocco
	Prof. Mohammed BETTACH	Laboratory of Physical-Chemistry of Materials, Department of Chemistry, Chouaïb Doukkali University, Faculty of Science, El Jadida, Morocco
BIOMASS-DERIVED MESOPOROUS ACTIVATED CARBONS AS POTENTIAL ADSORBENTS FOR CHROMIUM (VI)	CHATIR El Mehdi	Chouaib Doukkali University, Department of chemistry
	Prof. EL HADRAMI Abdelouahab	Chouaib Doukkali University, Department of chemistry
	Prof. OJALA Satu	University of Oulu, Department of Environmental and Chemical Engineering
	Prof. BRAHMI Rachid	Chouaib Doukkali University, Department of chemistry
STRUCTURE, DIELECTRIC AND IMPEDANCE SPECTROSCOPY OF Li2TiO3 NANO-PARTICLES VIA SOL-GEL METHOD	Fatima Zahra Krimecha	LBGIM, University Hassan II, ENS - Casablanca, Casablanca, Morocco LPTA, Faculté des Sciences, BP 1976 Fès-Atlas, Fès, Morocco laboratoire bio-geosciences et ingenierie des materiaux
	Salaheddine Sayouri	LPTA, Faculté des Sciences, BP 1976 Fès-Atlas, Fès, Morocco laboratoire bio-geosciences et ingenierie des materiaux
IDENTIFICATION OF SMALL MOLECULE INHIBITORS OF GAMMA SECRETASE: AN IN SILICO AND IN VITRO STUDY	Atul Kumar Singh	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
	Kumari Sunita Prajapati	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
	Mohd Shuaib	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
	Shashank Kumar	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
IN SILICO DESIGNING OF VACCINE AGAINST TRIPLE NEGATIVE BREAST CANCER	Shashank Kumar	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India

	Mohd Shuaib	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
	Kumari Sunita Prajapati	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
	Atul Kumar Singh	Molecular Signaling & Drug Discovery Laboratory, Department of Biochemistry, Central University of Punjab, Guddha, Punjab-151401, India
MICROBIOLOGICAL AND PHYSICOCHEMICAL QUALITY OF PASTEURIZED MILK INTENDED FOR THE MANUFACTURE OF DAIRY PRODUCTS IN THE GHARB REGION OF MOROCCO	HAMDAOUI NORA	Laboratory for the improvement of agricultural production, biotechnology and the environment, Department of Biology, Faculty of Sciences, University Mohammed I, Mohammed VI Avenue, BP: 524, 60000 Oujda, Morocco Process Engineering and Food Technologies Departement, Institute of Agron¬omy and Veterinary medicine (IAV-Hassan II) BP 6202 Rabat, Morocco
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	MEZIANE Mustapha	Laboratory for the improvement of agricultural production, biotechnology and the environment, Department of Biology, Faculty of Sciences, University Mohammed I, Mohammed VI Avenue, BP: 524, 60000 Oujda, Morocco
PROBLEM OF SOLID AND LIQUID WASTE FROM OLIVE OIL EXTRACTION AND THEIR VALORIZATION METHODS	HAMDI Inass	Laboratoire biologie et santé, Faculté des Sciences Kenitra. Laboratoire d'amélioration de la protection agricole, biotechnologie et environnement (LAPABE), Faculté des Sciences Oujda. Laboratoire de biotechnologie des plantes, Faculté des Sciences Agadir.
	ELASRI Ouahid	Laboratoire biologie et santé, Faculté des Sciences Kenitra. Laboratoire d'amélioration de la protection agricole, biotechnologie et environnement (LAPABE), Faculté des Sciences Oujda. Laboratoire de biotechnologie des plantes, Faculté des Sciences Agadir.
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	ATTRASSI Benaissa	Laboratoire biologie et santé, Faculté des Sciences Kenitra. Laboratoire d'amélioration de la protection agricole, biotechnologie et environnement (LAPABE), Faculté des Sciences Oujda.

		Laboratoire de biotechnologie des plantes, Faculté des Sciences Agadir.
PERCEPTIONS OF SMALLHOLDER FARMERS ON THE IMPACT OF COVID-19 ON AGRICULTURE AND AGROECOLOGICAL PRACTICES IN MOROCCO	Abdellatif Boutagayout	The Environment and Soil Microbiology Unit, Faculty of Sciences-Moulay Ismail University, B.P.11201 Zitoune, Meknes 50000, Morocco
	Saadia Belmalha	Department of Plant and Environment Protection, National School of Agriculture, Route Haj Kaddour, BP S/40-50000 Meknes, Morocco
	Wijdane Rhioui	Laboratory of Functional Ecology and Environmental Engineering-Sidi Mohamed Ben Abdellah University. PO Box 2202. Route d'Imouzzer. Fez. Morocco
	Laila Nassiri	The Environment and Soil Microbiology Unit, Faculty of Sciences-Moulay Ismail University, B.P.11201 Zitoune, Meknes 50000, Morocco
	El Houssine Bouiamrine	The Environment and Soil Microbiology Unit, Faculty of Sciences-Moulay Ismail University, B.P.11201 Zitoune, Meknes 50000, Morocco
COMPUTATIONAL EVALUATION OF SOME UNSATURATED KETONE DERIVATIVES AS MAO-B INHIBITORS; APPLICATION OF QSAR,ADMETAND DOCKING STUDIES	Abdellah El Aissouqa	LPME Laboratory, Faculty of Science and Technology, Sidi Mohamed Ben Abdellah University, Fez, Morocco
	Fatima En-nahlid	EST Khenifra, Sultan Moulay Sliman University, Morocco
	Amina Goudzalb	LIMOME Laboratory, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, Fez, Morocco
	Mohammed Bouachrine	MCNS Laboratory, Faculty of sciences, Moulay Ismail University, Meknes, Morocco. EST Khenifra, Sultan Moulay Sliman University, Morocco
	Abdelkrim Ouammou	LIMOME Laboratory, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, Fez, Morocco
	Fouad Khalil	LPME Laboratory, Faculty of Science and Technology, Sidi Mohamed Ben Abdellah University, Fez, Morocco
CONDUCTING POLYMERS-BASED FILMS FOR CORROSION PREVENTION OF METALLIC FOOD PACKAGING	Abdelqader El Guerraf	Equipe d'Electrochimie, Laboratoire de Chimie Appliquée et Environnement (LCAE), Faculté des Sciences, Université Mohammed 1er, 60 000 Oujda, Morocco
	Sana Ben Jadi	Laboratoire Matériaux et Environnement, Faculté des Sciences, Université Ibn Zohr, 80 000 Agadir, Maroc
	Mimouna Bouabdallaoui	Equipe d'Electrochimie, Laboratoire de Chimie Appliquée et Environnement (LCAE), Faculté des Sciences, Université Mohammed 1er, 60 000 Oujda, Morocco
	Zaynab Aouzal	Equipe d'Electrochimie, Laboratoire de Chimie Appliquée et Environnement (LCAE), Faculté des Sciences, Université Mohammed 1er, 60 000 Oujda, Morocco
	Mohammed Bazzaoui	Laboratoire Matériaux et Environnement, Faculté des Sciences, Université Ibn Zohr, 80 000 Agadir, Maroc
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Session-2, Hall-1
18.07.2021
Moderator: Assist. Prof. Dr. Cengiz AKKALE
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 13:00 – 15:00

Title	Author(s)	Affiliation
TETRAHYMENA THERMOPHILA FOR EXTRACELLULAR HETEROLOGOUS PROTEIN EXPRESSION	Assist. Prof. Dr. Cengiz AKKALE	Adana Alparslan Türkeş Science and Technology University
DNA CLASTOGENICITY OF MITOMYCIN C: A MECHANISTIC APPROACH via MOLECULAR DOCKING	Dr. Erman Salih İSTİFLİ	Cukurova University Faculty of Science and Literature, Department of Biology
SOME FUZZY IDEALS AND FUZZY NORMED COSETS ON FUZZY NORMED RINGS	Aykut Emniyet	Osmaniye Korkut Ata University, Department of Mathematic
	Memet Şahin	Gaziantep University, Department of Mathematic
ON THE MULTISTRIP BOUNDARY VALUE PROBLEM OF A BOUNDARY FRACTIONAL DIFFERENTIAL EQUATION	Dr. Habib Djourdem	Laboratory of Fundamental and Applied Mathematics of Oran (LMFAO), University of Oran1, Ahmed Benbella, Algeria
ON SOME FUZZY TRANSFORMATION SEMIGROUPS	Aykut Emniyet	Osmaniye Korkut Ata University, Department of Mathematic
	Memet Şahin	Gaziantep University, Department of Mathematic
INVESTIGATION OF THE EFFECT OF TITANIUM DIOXIDE ON SHOOT AND ROOT DEVELOPMENT OF WHEAT EMBRYO CULTURE	Alaa KAMO	Karamanoğlu Mehmetbey University, Turkey
	Büşra BOZKAYA	Karamanoğlu Mehmetbey University, Turkey
	Res. Assist. Begüm TERZİ AKSOY	Karamanoğlu Mehmetbey University, Turkey
	Prof. Dr. Metin SEZER	Karamanoğlu Mehmetbey University, Turkey
	Prof. Dr. Özlem ATEŞ SÖNMEZOĞLU	Karamanoğlu Mehmetbey University, Turkey
DETERMINATION OF THE PROTECTIVE ROLE OF VITAMIN E AND SODIUM SELENITE AGAINST LIPOPOLYSACHARIDE (LPS) INDUCED TESTICULAR DAMAGE IN MALE RATS	Gülşife GÖK	Yozgat Bozok University, Department of Biology
	Prof. Dr. Dilek PANDIR	Yozgat Bozok University, Department of Biology
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Session-2, Hall-2
18.07.2021
Moderator: Assoc. Prof. Dr. Seda Postalcıoğlu
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 13:00 – 15:00

Title	Author(s)	Affiliation
HAND GESTURE RECOGNITION OF ARABIC SIGN LANGUAGE USING A PAIR OF LEAP MOTION CONTROLLERS	MONA AFANGA	University of Electronic Science and Technology of China, School of Information and Software engineering, Laboratory of Intelligent Media and Virtual Reality
	Prof. Dr. YUNBO RAO	University of Electronic Science and Technology of China, School of Information and Software engineering, Laboratory of Intelligent Media and Virtual Reality
IMPLEMENTATION OF WASTE CLASSIFICATION SYSTEM USING DEEP LEARNING	Assoc. Prof. Dr. Seda Postalcıoğlu	Izmir Democracy University, Department of Computer Engineering
	Assist. Prof. Dr. Şafak Kayıkçı	Bolu Abant Izzet Baysal University, Department of Computer Engineering
EDDY-CURRENT CHARACTERIZATION OF AERONAUTICAL METAL SHEETS: A COMPARISON OF OPTIMIZATION METHODS	Oum Salama BENMOUSSA	
DEVELOPMENT OF A GROUP DECISION-MAKING SUPPORT SYSTEM FOR THE CREDIT RISKS ASSESSMENT	Assis. Prof. Dr. Irakli Basheleishvili	Akaki Tsereteli State University, Department of Computer Technology
	Prof. Dr. Avtandil Bardavelidze	Akaki Tsereteli State University, Department of Computer Technology
PROTOTYPE FOR A HYBRID AI AND ML BASED MODEL FOR EFFICIENT PREDICTION OF A MICROWAVE ABSORBER	Aayushi Arya, GVV Sharma	EE Dept., Indian Institute of Technology Hyderabad, 502285
A SCALABLE ARCHITECTURE FOR THE BIG DATA PROJECT	A. Errezgouny	Laboratory of Innovative Technologies (LIT), National School of Applied Sciences, Abdelmalek Essaadi University, Tangier, Morocco
	Prof. Dr. A. Cherkaoui	Laboratory of Innovative Technologies (LIT), National School of Applied Sciences, Abdelmalek Essaadi University, Tangier, Morocco
TEXT-TO-IMAGE SYNTHESIS: OPTIMAL MODEL IMPLEMENTATION ON PORTRAIT IMAGES USING GAN TECHNIQUES	Mohammed BERRAHAL	Laboratoire de recherche MATSI, ESTO, Université Mohamed Premier, Oujda, Maroc
	Mostafa AZIZI	Laboratoire de recherche MATSI, ESTO, Université Mohamed Premier, Oujda, Maroc
COMPREHENSIVE STUDY: MAINTENANCE OF PHOTOVOLTAIC SYSTEMS BASED ON ARTIFICIAL INTELLIGENCE	Youness HAMMOUDI	Materials, Waves, Energy and Environment Laboratory (LAMON2E), Faculty of Sciences (FSO), Mohammed First University (UMP)
	Prof. Hicham BOUALI	Materials, Waves, Energy and Environment Laboratory (LAMON2E), Faculty of Sciences (FSO), Mohammed First University (UMP)
FAULT DIAGNOSIS OF SINGLE PHASE INDUCTION MOTORS BASED ON ANALYSIS VIA CONVOLUTIONAL NEURAL NETWORKS OF SPECTRAL IMAGES PROCESSED BY DATA AUGMENTATION	Hadi ESMERAY	Tokat Gaziosmanpaşa Üniversitesi
	Zafer DOĞAN	Tokat Gaziosmanpaşa Üniversitesi
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Session-2, Hall-3
18.07.2021
Moderator: Assist. Prof. Dr. Firdes Ulas
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 13:00 – 15:00

Title	Author(s)	Affiliation
STEPS TO REDUCE THE WATER FOOTPRINT IN AGRICULTURE	Dr. Nurcan Yavuz	Selcuk University, Agriculture Faculty, Department of Irrigation
	Assoc. Prof. Dr. Duran Yavuz	Selcuk University, Agriculture Faculty, Department of Irrigation
FIRST RECORDS OF A NEMATODE PARASITE FROM LASIODERMA SERRICORNE (FABRICIUS, 1792) (COLEOPTERA ANOBIIDAE) IN TURKEY	Çağrı BEKİRCAN	Selçuk University, Sarayönü Vocational school Konya Turkey
DOES GRAFTING IMPROVE SALINITY TOLERANCE IN PEPINO (SOLANUM MURICATUM AIT.)?	Assist. Prof. Dr. Firdes Ulas	Erciyes University, Faculty of Agriculture, Department of Horticulture
STATUS AND PROBLEMS OF GRAINS IN FIELD CROPS IN IĞDIR	Esma PARSAK	Van Yüzüncü Yıl University, Turkey
	Dursun PARSAK	Tarımsal Araştırmalar ve Politikalar Genel Müdürlüğü, Ankara
	Assoc. Prof. Dr. Erol ORAL	Van Yüzüncü Yıl University, Turkey
15:15:15 COMPOSITE FERTILIZER APPLICATION IN ADIYAMAN PROVINCE ALMOND ORCHARDS	Ahmet Nuri ÖZDAĞ	Sert Kabuklu Meyveler Araştırma Enstitüsü Müdürlüğü, Adıyaman
EVALUATION OF THE SIMULTANEOUS EFFECTS OF GEMCITABINE, LOVASTATIN AND SIMVASTATIN IN AN IN VITRO GLIOBLASTOMA MODEL	Elanur Aydin Karatas	Department of Molecular Biology and Genetics, 25200, Erzurum Technical University, Erzurum, Turkey
	Hatice Aydin Dogan	Department of Molecular Biology and Genetics, 25200, Erzurum Technical University, Erzurum, Turkey
EFFECT OF MIXING AND SIZING ON THE ORGANIC SUBSTANCE OF HUMINE OBTAINED BY ALKALINE LEACHING FROM LIGNITE	Aydan Aksoğan KORKMAZ	Malatya Turgut Özal University, Hekimhan Vocational School, Mining Technology
GOVERNMENT GRANTS USED BY HATAY FOREST PRODUCTS ENTERPRISES IN SYRIAN CRISIS	Hasan SERİN	Prof. Dr., Kahramanmaraş Sütçü İmam Üniversitesi Orman Fakültesi Orman Endüstri Mühendisliği Bölümü
	Hasan Hüseyin TUNÇ	Kahramanmaraş Sütçü İmam University, Turkey
STUDIES MADE ON GENOTYPES OF SOME ALMOND SPECIES AND METHODS USED TO DETERMINE THE TOLERANCE OF THESE SPECIES TO DROUGHT AND SALTNESS WITH TISSUE CULTURE	Ahmet Nuri ÖZDAĞ	Sert Kabuklu Meyveler Araştırma Enstitüsü Müdürlüğü, Adıyaman

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Session-2, Hall-4
18.07.2021
Moderator: Prof. Dr. Muhammad Imran
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 13:00 – 15:00

Title	Author(s)	Affiliation
DETERMINATION OF ENZYME PROFILES OF BACTERIOCIN PRODUCER ENTEROCOCCUS FAECIUM AND ENTEROCOCCUS MUNDTII STRAINS ISOLATED FROM GOAT AND SHEEP COLOSTRUM	MSc. Hüseyin ÖZTÜRK	Akdeniz University, Manavgat Vocational School, Department of Food Technology
	MSc. Burak GENİŞ	Süleyman Demirel University, Department of Food Engineering
	Assoc. Prof. Dr. Banu ÖZDEN TUNCER	Süleyman Demirel University, Department of Food Engineering
	Prof. Dr. Yasin TUNCER	Süleyman Demirel University, Department of Food Engineering
DETERMINATION OF FATTY ACID COMPOSITIONS OF HELICHRYSUM PLICATUM BY GC/FID	Elife KAYA	Department of Food Processing, Vocational School of Technical Sciences, Kahramanmaras Sutcu Imam University, Kahramanmaras, Turkey
NUTRITIONAL QUALITY OF CORN (ZEA MAYS) OIL	Dr. Muhammad Imran	Department of Food Science, Faculty of Life Sciences, Government College University, Faisalabad, Pakistan
	Mr. Muhammad Abdul Rahim	Department of Food Science, Faculty of Life Sciences, Government College University, Faisalabad, Pakistan
	Dr. Muhammad Nadeem	Department of Dairy Technology, University of Veterinary and Animal Sciences, Lahore, Pakistan
DETERMINATION OF ANTIBIOTIC RESISTANCE PROFILES AND RESISTANCE GENES OF VANCOMYCIN-RESISTANT LACTOBACILLUS ISOLATED FROM DIFFERENT FOODS	Assist. Prof. Dr. Didem AKPINAR KANKAYA	Isparta University of Applied Sciences, Gelendost Vocatinal School, Department of Food Technology
	Assoc. Prof. Dr. Banu ÖZDEN TUNCER	Süleyman Demirel University, Department of Food Engineering
	Prof. Dr. Yasin TUNCER	Süleyman Demirel University, Department of Food Engineering
PROFITABILITY OF COCOA MARKETING IN OSUN STATE, NIGERIA	Amao Oyetoun Dunmola	Bioresources Development Centre, Malete, Ilorin, Kwara State, Nigeria
	Olojede Mary Oluyinka	Oyo State College of Agriculture and Technology, Igboora, Oyo State, Nigeria
CHEMICAL COMPOSITION OF MOROCCAN NIGELLA SATIVA SEED FRACTIONS AND THEIR ANTIDIABETIC ACTIVITIES	DALLI Mohammed	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health. University Mohammed the First, Faculty of sciences. Oujda, Morocco
	DAOUDI Nour Elhouda	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health. University Mohammed the First, Faculty of sciences. Oujda, Morocco
	AZIZI Salah-eddine	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health. University Mohammed the First, Faculty of sciences. Oujda, Morocco
	BENOUDA Hind	Laboratory of Organic Chemistry, Macromolecules, and Natural products
	Bnouham Mohamed	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and Health. University Mohammed the First, Faculty of sciences. Oujda, Morocco
	Gseyra Nadia	Laboratory of Bioresources, Biotechnology, Ethnopharmacology, and

		Health. University Mohammed the First, Faculty of sciences. Oujda, Morocco
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Session-2, Hall-5
18.07.2021
Moderator: Ghizlane ACHAGRI & Dr. ADESOGAN, Sunday Olufemi
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 13:00 – 15:00

Title	Author(s)	Affiliation
COMPUTATIONAL CHEMISTRY FOR RESEARCH INTO THE IN SILICO DESIGN OF NEW CAMKKII INHIBITORS AGAINST OBESITY USING 3D-QSAR AND MOLECULAR DOCKING	Halima Hajji	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Fatima En-nahli	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Soukaina Bouamrane	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Khalil EL Khatabi	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Mohammed Aziz Ajana	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Tahar Lakhlifi	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco
	Mohammed Bouachrine	Molecular chemistry and Natural Substances Laboratory,,Faculty of Science, University of Moulay Ismail, 50000, Meknes, Morocco EST Khenifra,Sultan Moulay Sliman University ,54000,Benimellal Morocco
FIRST PRINCIPLES INVESTIGATION OF INFLUENCE OF VARIED Cr ATOM ON BAND STRUCTURE AND MAGNETIC MOMENT OF RUTILE SnO2	F. Ayedun	Department of Pure and Applied Sciences, National Open University of Nigeria, Abuja
	E. P. Inyang	Department of Pure and Applied Sciences, National Open University of Nigeria, Abuja
	E.A. Ibanga	Department of Pure and Applied Sciences, National Open University of Nigeria, Abuja
POLYPENOLS CONTENT IN ROOTS OF TARAXACUM OFFICINALE	Fulga Ala	Department of biochemistry and clinical biochemistry, "Nicolae Testemitanu" State University of Medicine and Pharmacy, Chisinau, Republic of Moldova
ENHANCEMENT OF THE PHOTOCATALYTIC PROPERTIES OF BISMUTH-BASED PHOSPHATES FOR THE DEGRADATION OF ORGANIC POLLUTANTS	B. Akhsassi	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco University of Toulon, Aix Marseille Univ, CNRS 7334, IM2NP, BP 20132, 83957 La Garde Cedex, France
	Y. Naciri	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco
	A. Bouddouch	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco University of Toulon, Aix Marseille Univ, CNRS 7334, IM2NP, BP 20132, 83957 La Garde Cedex, France

	B. Bakiz	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco
	C. Favotto	University of Toulon, Aix Marseille Univ, CNRS 7334, IM2NP, BP 20132, 83957 La Garde Cedex, France
	S. Villain	University of Toulon, Aix Marseille Univ, CNRS 7334, IM2NP, BP 20132, 83957 La Garde Cedex, France
	A. Taoufyq	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco
	A. Benlhachemi	Materials and Environment Lab (LME), Faculty of science, Ibn Zohr university, B.P 8106, Dakhla City, Agadir, Morocco
FABRICATION AND CHARACTERIZATION OF Mg-DOPED ZnO (Zn1-xMgxO) SEMICONDUCTORS PREPARED BY ELECTRODEPOSITION TECHNIQUE FOR PHOTOVOLTAIC APPLICATIONS	Rania Kara	Faculty of Sciences and Technology, Abbes Laghrour University, 40000 Khanchela, Algeria Laboratory of Chemistry, Molecular Engineering and Nanostructures, Ferhat Abbas-Sétif 1 University, 19000 Setif, Algeria
	Rachid Siab	Faculty of Sciences and Technology, Abbes Laghrour University, 40000 Khanchela, Algeria
FACILE FABRICATION OF DURABLE, WATER PROOFING, SUPER-HYDROPHOBIC TEXTILE FABRIC FUNCTIONALIZED ORGANOPHILIC CELLULOSE NANOCRYSTALS	Ghizlane ACHAGRI	Laboratory of materials catalysis and valorization of natural resources, Faculty of sciences and techniques, Chemistry department, Mohammedia, Morocco
	Dr. Boubker OUADIL	MaScIR Foundation, INANOTECH, VARENA Center, Rabat Morocco
	Prof. Achraf CHAKIR	Laboratory of materials catalysis and valorization of natural resources, Faculty of sciences and techniques, Chemistry department, Mohammedia, Morocco
	Prof. Mohamed ZAHOUILY	Laboratory of materials catalysis and valorization of natural resources, Faculty of sciences and techniques, Chemistry department, Mohammedia, Morocco
HARNESSING OUR AVAILABLE RESOURCES FOR SUSTAINABLE DEVELOPMENT IN RURAL AREAS OF DEVELOPING COUNTRIES	Dr. ADESOGAN, Sunday Olufemi	Civil Engineering Department, University of Ibadan Nigeria
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Session-3, Hall-1
18.07.2021
Moderator: Dr. Arzu Yıldırım
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

Title	Author(s)	Affiliation
DETERMINATION OF THE EFFECTS OF 2-METHYLIMIDAZOLE ON MAJOR METABOLIC COMPONENTS OF GREEN ALGA CHLAMYDOMONAS REINHARDTII	Dr. Arzu Yıldırım	Ege University, Bioengineering Department
THE EFFECT OF STREPTOMYCIN APPLICATION ON GROWTH AND CAROTENOID ACCUMULATION IN MICROALGAE	Yağmur Ülük	Ege University, Bioengineering Department
	Dr. Arzu Yıldırım	Ege University, Bioengineering Department
INVESTIGATION OF PF CELLS WITH CULTURING IN DMEM-H AND ALPHA-MEM MEDIA FOR USAGE IN TISSUE ENGINEERING STUDIES	Dilek Sönmezer	Cukurova University / Department of Biomedical Engineering, Adana, Turkey
	Fatma Latifoğlu	Erciyes University/ Department of Biomedical Engineering, Kayseri, Turkey
ACCELERATING PLANT GENOME EDITING BY ELIMINATING TISSUE CULTURE	Assist. Prof. Dr. Hilal Betül KAYA AKKALE	Manisa Celal Bayar University, Turkey
RECEPTOR LIKE-KINASES IN PLANT DEFENCE	Elif KARLIK	Department of Molecular Biology and Genetics, Istinye University, Zeytinburnu, Istanbul, Turkey
PYRROLIDINE DITHIOCARBAMATE AS AN ANTIVIRAL COMPOUND AGAINST COVID-19 VIRUS	Vinod Ravasaheb Shinde	Department of Biomedical Engineering, Indian Institute of Technology Hyderabad, Kandi, Telangana, India
POTENTIAL EFFECT OF POTASSIUM HYDROXIDE IN THE TREATMENT OF COVID-19	Op. Dr. Emin ZÜMRÜTDAL	Çukurova University, Turkey
BIOETHANOL PRODUCTION THROUGH SYNGAS FERMENTATION IN IMMOBILIZED BIOREACTOR USING CLOSTRIDIUM RAGSDALEI	M.Sc.Simge SERTKAYA	Ege University, Research and Application Center for Environmental Problems
	Assoc. Prof. Dr. Tugba KESKIN GUNDOGDU	Izmir Democracy University, Department of Environmental Protection
	Prof. Dr. Christian KENNES	University of A Coruña, Faculty of Sciences and Centre for Advanced Scientific Research
	Prof. Dr. Nuri AZBAR	Ege University, Department of Bioengineering
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Session-3, Hall-2
18.07.2021
Moderator: Assoc. Prof. Dr. Şengül ŞANLIER UÇAK
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

Title	Author(s)	Affiliation
ANALYSIS OF ELECTRIC ENERGY STORAGE TECHNOLOGIES USED ON SHIPS	Assoc. Prof. Dr. Şengül ŞANLIER UÇAK	Recep Tayyip Erdogan University, Turgut Kiran Maritime Faculty
COMPREHENSIVE RESEARCH AND COMPARISON ON REQUIREMENTS, MAIN PARTS, AND AVAILABLE PRODUCTS OF ONBOARD BATTERY CHARGER FOR ELECTRIC VEHICLES	Assoc. Prof. Dr. Mehmet Uğraş Cuma	Çukurova University, Department of Electrical&Electronics Engineering
	Ayhan Boncukçu	PCB Elektronik SAN. VE TİC. LTD. ŞTİ
	Assist. Prof. Dr. Murat Mustafa Savrun	Adana Alparslan Türkeş Science and Technology University, Department of Electrical&Electronics Engineering
PERFORMANCE COMPARISON OF DIFFERENT HEAT SINKS FOR VOLTAGE REGULATORS	Dr. Seyfi ŞEVİK	Hitit University, Vocational School of Technical Sciences, Electrical and Energy, Çorum, Turkey
	Dr. Özgür ÖZDİLLİ	Hitit University, Vocational School of Technical Sciences, Machinery and Metal Tech., Çorum, Turkey
	Hilmi YANMAZ	Hitit University, Vocational School of Technical Sciences, Electrical and Energy, Çorum, Turkey
	Emrecan KABATAŞ	Hitit University, Faculty of Engineering, Mechanical Engineering, Undergraduate Student
DESIGN AND ANALYSIS OF SPAN-WISE MORPHING WINGLET	Nandni Sharma	Department of Aerospace Engineering, Punjab Engineering College (Deemed to be University), Chandigarh, India
	Gaurav Chhabra	Department of Aerospace Engineering, Punjab Engineering College (Deemed to be University), Chandigarh, India
	Abha Gupta	Department of Aerospace Engineering, Punjab Engineering College (Deemed to be University), Chandigarh, India
FINITE ELEMENT SHEAR-OUT FRACTURE THROUGH-THICKNESS FRACTURE FAILURE ANALYSIS	Dr. Kazeem Kayode, ADEWOLE	University of Ibadan, Nigeria
SATURATED HYDRAULIC CONDUCTIVITY ESTIMATION OF TERRACE SOIL USING SIMPLIFIED BEERKAN INFILTRATION METHOD	Deniz Yilmaz	Munzur University, Engineering Faculty, Civil Engineering Department, Tunceli, Turkey

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Session-3, Hall-3
18.07.2021
Moderator: Dr. CHAFAI Wissame & Hamza MALAHAKCH
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

Title	Author(s)	Affiliation
PROTECTIVE EFFECT OF GINGER (ZINGIBER OFFICINALE) AGAINST PESTICIDE TOXICITY ON COGNITIVE BEHAVIOR AND THYROID FUNCTION IN FEMALE WISTAR RATS	REFES Ines	Applied Neuroendocrinology Laboratory, Department of Biology, Faculty of Science; University Badji Mokhtar Annaba Algeria
	TAHRAOUI Abdelkrim	Applied Neuroendocrinology Laboratory, Department of Biology, Faculty of Science; University Badji Mokhtar Annaba Algeria
	BOUSSENA Mabrook	Applied Neuroendocrinology Laboratory, Department of Biology, Faculty of Science; University Badji Mokhtar Annaba Algeria
	ROUAG Faiza	Applied Neuroendocrinology Laboratory, Department of Biology, Faculty of Science; University Badji Mokhtar Annaba Algeria
	DJEMLI Samir	Applied Neuroendocrinology Laboratory, Department of Biology, Faculty of Science; University Badji Mokhtar Annaba Algeria
ANALYSE PHYTOCHIMIQUE ET EVALUATION DE L'ACTIVITE DE L'EXTRAIT DE FENUGREC SUR LE MODELE ANIMAL	ROUAG Faiza	Laboratoire de neuroendocrinologie appliquée. Département de biologie, Faculté des sciences, Université Badji Mokhtar Annaba 23000 Algérie
	FERHATI Habiba	Laboratoire de neuroendocrinologie appliquée. Département de biologie, Faculté des sciences, Université Badji Mokhtar Annaba 23000 Algérie
	TAHRAOUI Abdlekrim	Laboratoire de neuroendocrinologie appliquée. Département de biologie, Faculté des sciences, Université Badji Mokhtar Annaba 23000 Algérie
	REFES Ines	Laboratoire de neuroendocrinologie appliquée. Département de biologie, Faculté des sciences, Université Badji Mokhtar Annaba 23000 Algérie
	BOUSSENA Mabrouk	Laboratoire de neuroendocrinologie appliquée. Département de biologie, Faculté des sciences, Université Badji Mokhtar Annaba 23000 Algérie
THE IMPACT OF LONG-TERM CONSUMPTION OF ASPARTAME ON LIVER FUNCTION AND THE HISTOPATHOLOGICAL STUDY ON WISTAR RATS	Mabrouk BOUSSENA	Applied Neuroendocrinology Laboratory. Department of Biology, Faculty of Sciences, y Badji Mokhtar Annaba University 23000 Algeria
	Samir DJEMLI	Applied Neuroendocrinology Laboratory. Department of Biology, Faculty of Sciences, y Badji Mokhtar Annaba University 23000 Algeria
	Ines REFES	Applied Neuroendocrinology Laboratory. Department of Biology, Faculty of Sciences, y Badji Mokhtar Annaba University 23000 Algeria
	Faiza ROUAG	Applied Neuroendocrinology Laboratory. Department of Biology, Faculty of Sciences, y Badji Mokhtar Annaba University 23000 Algeria
	Abdelkrim TAHRAOUI	Applied Neuroendocrinology Laboratory. Department of Biology, Faculty of Sciences, y Badji Mokhtar Annaba University 23000 Algeria
DESCRIPTIVE STUDY OF FISH MARKET, SURAT, GUJARAT, INDIA	Ranjana Bengani	Department of Aquatic Biology, Veer Narmad South Gujarat University, Surat, Gujarat, India
	Kapila Manoj	Department of Aquatic Biology, Veer Narmad South Gujarat University, Surat, Gujarat, India
	Alpa Varsani	Department of Aquatic Biology, Veer Narmad South Gujarat University, Surat, Gujarat, India

	Archan Gavit	Department of Aquatic Biology, Veer Narmad South Gujarat University, Surat, Gujarat, India
DIVERSITY AND MYCORRHIZAL POTENTIAL OF ARBUSCULAR MYCORRHIZAL FUNGI IN TWO NATURAL SOILS IN THE EASTERN REGION OF MOROCCO	Dr. CHAFAI Wissame	Laboratory for the Improvement of Acicultural Production, Biotechnology and Environment. Faculty of Sciences, Mohammed I University, Oujda 60000, Moroccco
	Prof. Dr. KHALID Ahmed	Laboratory for the Improvement of Acicultural Production, Biotechnology and Environment. Faculty of Sciences, Mohammed I University, Oujda 60000, Moroccco
EFFECT OF MESH TYPE ON FINITE ELEMENT MODELING OF A SPREADER: MESHING QUALITY AND STATIC STRESS	Hamza MALAHAKCH	Laboratory of Engineering of Industrial Management and Innovation, Faculty of Sciences and Technics, university Hassan I, Settat, Morocco
	Dr. Aziz HRAIBA	Laboratory of Engineering of Industrial Management and Innovation, Faculty of Sciences and Technics, university Hassan I, Settat, Morocco
	Prof. Moha AROUCH	Laboratory of Engineering of Industrial Management and Innovation Professor at the Faculty of sciences & Technics, university Hassan I, Settat, Morocco Director of the University Incubator, Centre for Research and Innovation, Settat, Morocco
DEVELOPING MOBILE GAME ON INDONESIAN MULTI CULTURE FOR CHILDREN	Hadi Sutopo	Kalbis Institute, Jakarta, Indonesia
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Session-3, Hall-4
18.07.2021
Moderator: Assoc. Prof. Dr. Haddou El Ghazi & Ph.D. Redouane En-nadir
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

Title	Author(s)	Affiliation
MOLECULAR DOCKING AND ADMET STUDIES OF PYRAZOLINE AND PYRAZOLE DERIVATIVES AS ANTIBACTERIAL AGENT	Fatima En-nahli	MCNS Laboratory, Faculty of Science, Moulay Ismail University, Meknes, Morocco
	Halima Hajji	EST Khenifra, Sultane Moulay Sliman University, Khenifra, Morocco
	Abdellah El aissouq	LPME Laboratery of Processes, Materials and Environment, Faculty of Science and Technology, Sidi Mohammed Ben Abdellah University, Fez, Morocco
	Tahar Lakhlifi	MCNS Laboratory, Faculty of Science, Moulay Ismail University, Meknes, Morocco
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COMBINED EFFECT AF SIZE AND TEMPERATURE ON THE LINEAR AND NONLINEAR OPTICAL ABSORPTION COEFFICIENTS OF INGAN/GAN ASYMMETRIC QW	Ph.D. Redouane En-nadir	FSDM, Mohammed Ben Abdellah University, Fes, Morocco
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A STUDY ON WELL FOUNDATIONS: WELL FOUNDATION ANALYZES FOR ATTACHED BUILDINGS	İmran ÖZBEY	Fırat University, Department of Civil Engineering, 23119, Elazığ, Turkey
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THE CONTRIBUTION OF GRAVITY METHOD IN UNDERSTANDING STRUCTURAL SETTING OF THE DEEP AQUIFERS: EXAMPLE OF ISLY BASIN (HORST BELT, NORTHEASTERN MOROCCO)	Soufiane Ziani	Laboratory of Applied Geosciences, Department of Geology, Faculty of Sciences, Mohammed 1st University, Oujda, Morocco
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Session-3, Hall-5
18.07.2021
Moderator: Assist. Prof. Dr. K.R.Padma
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

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TRADITIONAL USES, BIOACTIVE PHYTOCHEMICALS AND PHARMACOLOGICAL ACTIVITIES OF ROCKROSE (CISTUS spp.) SPECIES	Assoc. Prof. Dr. Sevgi Gezici	Department of Molecular Biology and Genetics, Faculty of Science and Literature; Advanced Technology Application and Research Center (ATARC), Kilis 7 Aralik University, 79000, Kilis-Turkey
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Session-3, Hall-6
18.07.2021
Moderator: Assoc. Prof. Dr. Saida SULTANLI
Meeting ID: 899 7656 3547 / Passcode: 868075
Ankara Local Time: 16:00 – 18:30

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NUMERICAL ANALYSIS OF DOUBLE PIPE HEAT EXCHANGER BY USING HYBRID NANOFLUID	ATUL BHATTAD	Associate Professor, Department of Mechanical Engineering, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur, Andhra Pradesh, 522502, India
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TRADE OPENNESS AND ECONOMIC GROWTH IN NIGERIA; A VECTOR ERROR CORRECTION MODEL (VECM) APPROACH	Gwaison Panan Danladi	Economics and Management science Department Nigeria Po lice Academy Wudil-Kano,Nigeria
CLOUD HUMAN RESOURCE INFORMATION SYSTEMS (CHRIS): THREATS AND ADVANTAGES	Elissa MOLLAKUQE	Pjeter Budi College, Kosovo
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INNOVATIVE ENERGY AND ENVIRONMENTAL IMPACT REDUCTION	Assoc. Prof. Dr. Saida SULTANLI	Azerbaycan Devlet Ekonomi Üniversitesi (UNEC),
	Assoc. Prof. Dr. Mehriban ASGAROVA	Azerbaycan Devlet Ekonomi Üniversitesi (UNEC),
ANALYSIS OF DATA BY SECURITY CHECK LIST ON COMPUTERIZED ACCOUNTING INFORMATION SYSTEMS CAIS: AN STUDY CASE ON KOSOVO ORGANIZATIONS	Elissa MOLLAKUQE	Pjeter Budi College, Kosovo
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SPECTRAL ANALYSIS OF AEROMAGNETIC DATA FROM CURIE POINT DEPTH FOR GEOTHERMAL RECONNAISSANCE IN SOME PARTS OF KADUNA NW, NIGERIA	Adamu Abubakar	Federal University Birnin Kebbi, Nigeria
	Abdulganiyu Yunusa	Federal University Birnin Kebbi, Nigeria
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	Amir Hamzeh Aslambakhsh	University of Tehran, Tehran, Iran
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ANODIC TREATMENT OF NICKEL-COPPER ALLOY IN A DEEP EUTECTIC SOLVENT TO PROVIDE ENHANCED ELECTROCATALYTIC ACTIVITY	Vyacheslav PROTSENKO	Ukrainian State University of Chemical Technology, Ukraine
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ETHICAL THEORIES AND USE IN NURSING

ETİK TEORİLER VE HEMŞİRELİKTE KULLANIMI

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ABSTRACT

For the nurse, who is a member of a professional health discipline, priority values that ensure ethical behavior in ethical dilemmas have been determined. These are: Human Dignity: It is the value believed in the value and uniqueness of the human being from creation. Equality: It is the value arising from the belief that every human being has the same rights and freedoms. Justice: It is the value of adherence to moral and legal principles and integrity. Altruism: This value, which is the opposite of egoism, provides concern for the health, well-being and well-being of others. Realism: It is the value of commitment to truth, honesty and faith. The person turns towards the truth with the behaviors that are rational with realism, investigate the truth and document the service. Freedom: It is the value characterized as the ability to choose action and behavior. Aesthetics: Qualitatively, it is the value that satisfies objects, events and people. The common feature of most of the National Nursing Ethics / Codes, as well as the ethical principles and responsibilities for nurses determined by the THD ethics subcommittee in our country, is that the International Council of Nurses is based on the International Council of Nurses Codes of Ethics for Nurses. The ethical obligations of nurses stipulated by ICN are "nurses and people", "nurses and practice", "nurses and profession" and "nurses and collaborators". Nursing services require making decisions on many issues during the presentation of patient care practices. Considering that especially the patient group served in the field of psychiatric nursing is a group that is more specific and needs to be treated more carefully when making decisions about them, some issues seem to be more important for psychiatric nursing practices. One of these issues is ethical codes and standards specific to psychiatric nursing. Therefore, when psychiatric nurses make a decision about the patient, they should do so according to ethical theories, not individual opinions. In this context, it is necessary to know ethical theories and principles in general, to act according to the ethical code and psychiatric nursing rules, and to use scientific knowledge about nursing in the decision-making process.

Keywords: Ethical Theories, Nursing, Ethics

ÖZET

Profesyonel bir sağlık disiplininin üyesi olan hemşire için, etik ikilem durumlarında etik davranışı sağlayan öncelikli değerler belirlenmiştir. Bunlar: İnsan Onuru: Yaradılıştan insanın değerliliği ve eşsizliğine inanılan değerdir. Eşitlik: Her insanın aynı hak ve özgürlüklere sahip olduğu inancından kaynaklanan değerdir. Adalet: Ahlaki ve yasal ilkelere, doğruluğa bağlılık değeridir. Özgecilik: Egoizmin tam tersi olan bu değer başkalarının sağlığı, esenliği ve iyilik durumu ile ilgilenmeyi sağlar. Gerçekçilik: Gerçeğe, dürüstlüğe, inançla bağlı olma değeridir. Kişi gerçekçilikle akılcı, gerçeği araştıran ve hizmeti belgeleyen davranışlarla doğruya yönelir. Özgürlük: Hareket ve davranışı seçme yeteneği olarak nitelenen değerdir. Estetik: Nitel açıdan obje, olay ve kişilerin doyumunu sağlayan değerdir. Ülkemizde THD etik alt komisyonu tarafından belirlenmiş olan hemşireler için etik ilkeler ve sorumluluklarda olduğu gibi Ulusal Hemşirelik Etik Kuralları/Kodlarının çoğunun ortak özelliği, Uluslararası Hemşireler Konseyinin Hemşireler İçin Etik Kodlar (International Council of Nurses Codes of Ethics for Nurses)'ını esas almasıdır. ICN'in öngördüğü hemşirelerin etik yükümlülükleri, "hemşireler ve insanlar", "hemşireler ve uygulama", "hemşireler ve meslek" ve "hemşireler ve iş birliği halinde çalışanlar"dır. Hemşirelik hizmetleri hasta bakımı uygulamalarının sunumu sırasında birçok konuda kararlar vermeyi gerektirmektedir. Özellikle psikiyatri hemşireliği alanında hizmet verilen hasta grubunun daha özel ve onlarla ilgili kararlar alınırken daha özenli davranılması gereken bir grup olduğu düşünülürse psikiyatri hemşireliği uygulamaları için bazı konular daha önemli gibi görünmektedir. Bu konulardan biri psikiyatri hemşireliğine özel etik kodlar ve standartlardır. Bu nedenle psikiyatri hemşireleri hasta ile ilgili bir karar alacağı zaman bunu bireysel görüşlerine göre değil etik teorilere göre yapmalıdır. Bunun içinde genel anlamda etik teorileri ve ilkeleri bilmesi, etik kod ve psikiyatri hemşireliği kurallarına göre hareket etmesi, karar verme sürecinde hemşirelikle ilgili bilimsel bilgiyi kullanması gerekmektedir.

Anahtar Kelimeler: Etik teoriler, Hemşirelik, Etik

ETHICS IN PSYCHOLOGICAL COUNSELING

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ABSTRACT

Psychological counselors are expected to have a tendency to question what will be the best behavior during the counseling process. At this point, many consultants rely on their knowledge and experience of ethics, their beliefs and feelings about what is right. Consultancy cannot serve any useful purpose unless it is ethically based. Clients often seek help when they are problematic or sensitive. Their wish; the first thing is that the consultants help them achieve true autonomy and well-being. This situation requires an ethical relationship with the client, due to the nature of the counseling. When the counseling process begins, one of the first concerns of the client is "How much can I trust this person who is my client". If the consultant appears to have personal integrity, it is anticipated that the ethical standards he applies in all his consultations will be of a similar level. By definition, trust includes completing the information necessary to establish faith in a person or system. At this point, some clients control possible risks by testing the consultant on less serious issues before revealing real issues. At this point, some clients control possible risks by testing the consultant on less serious issues before revealing real issues. Either way, trust; At a time when the client is sensitive and very vulnerable, it turns into action when the consultant uses his / her power for their benefit or disadvantage. This is why it is important to adhere to ethical principles in counseling. The openness of one person to use creates a mutual necessity for another to use professional expertise and power. It is impossible to consult without creating a safe environment. Sufficient confidence should be given to the client to participate frankly and actively in the process. These limits, which should be preserved during and after the therapy process, should be determined and protected by ethical regulations, principles and rules.

Keywords: Consulting, Ethics, Client

ÖZET

Psikolojik danışmanların, danışma sürecinde neyin en doğru davranış olacağını sorgulama eğilimine sahip olması beklenmektedir. Bu noktada birçok danışman, etik konusundaki bilgi ve deneyimine, neyin doğru olduğuna dair inançlarına ve hislerine güvenir. Danışmanlık etik temellere dayanmadığı sürece, yararlı herhangi bir amaca hizmet edemez. Danışanlar genellikle sorunlu ya da hassas olduklarında yardım ararlar. Onların dileği; danışmanların öncelikle gerçek anlamda özerkliğe ve iyilik haline ulaşmalarına yardımcı olmalarını sağlamalarıdır. Bu durum danışmanlığın doğası gereği, danışan ile etik bir ilişki içinde olmayı gerektirir. Danışmanlık süreci başladığında danışanın ilk endişelerinden biri '' Danışanım olan bu kişiye ne ölçüde güvenebilirim'' dir. Danışman, kişisel bütünlüğe sahip görünüyorsa, onun tüm danışmalarında uyguladığı etik standartların benzer bir düzeyde olacağı tahmin edilir. Tanım olarak güven, kişiye ya da sisteme inanç sağlamak amacıyla gerekli olan bilgileri tamamlamayı içerir. Bu noktada bazı danışanlar, gerçek konuları açıklamadan önce daha az ciddi konularda danışmanı test ederek olası riskleri denetler. Bu noktada bazı danışanlar, gerçek konuları açıklamadan önce daha az ciddi konularda danışmanı test ederek olası riskleri denetler. Her iki durumda da güven; danışanın hassas ve incinmeye oldukça açık olduğu bir zamanda danışmanın gücünü onun yararına veya zararına kullanması ile eyleme dönüşür. Danışmanlıkta etik ilkelere bağlı kalmak bu nedenle önemlidir. Bir kişinin yararlanmaya açık oluşu diğerine, mesleki uzmanlık ve gücün kullanılması konusunda karşılıklı bir zorunluluk yaratır. Güvenli bir ortam yaratılmadan danışmanlık yapmak imkansızdır. Danışana açık yüreklilikle ve aktif olarak sürece katılımı için yeteri kadar güven verilmelidir. Terapi sürecinde ve sonrasında korunması gereken bu sınırlar, etik yönetmelik, ilke ve kurallarla belirlenmeye çalışılmalı ve korunmaya çalışılmalıdır.

Anahtar Kelimeler: Danışmanlık, Etik, Danışan

AISI 1040 ORTA KARBON ÇELİĞİNİN YÜZEY PÜRÜZLÜLÜĞÜ ÜZERİNE MMY VE KURU FREZELEME ŞARTLARININ PERFORMANS DEĞERLENDİRMESİ

PERFORMANCE EVALUATION OF MQL AND DRY MILLING CONDITIONS ON SURFACE ROUGHNESS OF AISI 1040 MEDIUM CARBON STEEL

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ÖZET

AISI 1040 orta karbon çeliği endüstriyel uygulamalarda cıvata, somun, kavrama, krank mili, vidalı mil, saplama gibi birçok mühendislik alanında temel teşkil eden makine elemanlarının imalatında kullanılmaktadır. AISI 1040, yüksek mukavemet ve tokluk gerektiren parçalarda tercih edildiği için imalat sürecinde kullanılan yöntemlerin araştırılması malzemenin mekanik ve fiziksel özelliklerini geliştirmek bakımından önem kazanmaktadır. Bir makine elemanının kullanımı süresince performansını belirleyecek önemli kıstaslardan biri yüzey pürüzlülüğüdür. Bu bakımdan yüzey pürüzlülüğünün incelenmesi, mekanik performansın geliştirilmesi bakımından oldukça önemlidir. Son yıllarda, talaşlı imalat işlemlerinde yaygınlaşmakta olan minimum miktarda yağlama (MMY) yöntemi, geleneksel yağlamanın aksine kesme bölgesine pulverize halde basınçlı hava yardımı ile sıvı gönderilmesi prensibine dayalı bir teknolojidir. Bu şekilde hem gereksiz yağ tüketimi azaltılmakta, hem de kullanılan sıvıların yol açtığı çevresel ve insan sağlığı üzerindeki etkiler en aza indirilmektedir. MMY yöntemi kesici takım ve iş parçası arasındaki sürtünme katsayısını azaltarak yüksek kesme sıcaklıklarını ve aşırı miktarda takım aşınmasını önlemeyi amaçlar. Kesici takım aşınması ise iş parçası yüzey pürüzlülüğünü etkileyen önemli faktörlerden birisidir. Bu bilgiler ışığında, bu çalışma kapsamında AISI 1040 malzemenin kuru ve MMY koşullarında frezelenmesi esnasında ortaya çıkan yüzey pürüzlülüğü araştırılmıştır. Bu kapsamda, iki kesme hızı ve ilerleme değeri kullanılmış, talaş derinliği sabit tutulmuştur. Talaş kaldırma işlemi bir CNC freze tezgâhı üzerinde kuru ve MMY ortamlarında gerçekleştirilmiş, işlemin ardından aritmetik ortalama yüzey pürüzlülüğü (Ra) ölçümü yüzey pürüzlülük ölçüm cihazı yardımı ile yapılmıştır. Elde edilen sonuçlar, frezelemede MMY kullanımının, kuru işleme koşullarına kıyasla malzemenin yüzey pürüzlülüğü üzerinde önemli gelişme sağladığını ortaya koymuştur. AISI 1040 malzemenin tornalama esnasında yağlama/soğutma koşullarının etkisinin incelendiği pek çok çalışma olsa da frezeleme üzerine herhangi bir çalışmaya rastlanmamıştır. Bu bakımdan çalışmanın endüstriyel uygulamalar açısından önemli bir rehber olacağı düşünülmektedir.

Anahtar Kelimeler: Yüzey Pürüzlülüğü, Minimum Miktarda Yağlama, Frezeleme

ABSTRACT

AISI 1040 medium carbon steel is used in the manufacture of machine elements that form the basis in many engineering fields such as bolts, nuts, couplings, crankshaft, ball screws, and studs. Since AISI 1040 is preferred in high strength and toughness investigations, the investigation of the methods used gains importance in terms of mechanical and physical aspects of the material. One of the criteria to learn to use a machine element is surface roughness. In this respect, examining the surface roughness is very important in terms of improving the mechanical performance. In recent years, the minimum amount of lubrication (MQL) method, which has become widespread in machining processes, is a technology based on the principle of sending fluid to the cutting zone with the help of compressed air in pulverized form, unlike conventional lubrication. In this way, unnecessary oil consumption is reduced and the environmental and human health impacts caused by the fluids used are minimized. The MQL method aims to prevent high cutting temperatures and excessive tool wear by reducing the coefficient of friction between the cutting tool and the workpiece. Cutting tool wear is one of the important factors affecting the workpiece surface roughness. In the light of this information, the surface roughness of the AISI 1040 material during the milling of dry and MQL conditions was investigated in the scope of this study. In this context, two cutting speeds and feed rates were used and the depth of cut was kept constant. The machining process was carried out on a CNC milling machine in dry and MQL environments, after the process, the arithmetic mean surface roughness (Ra) measurement was carried out with the help of a surface roughness measuring device. The results show that the use of MMY in milling provides a significant improvement in the surface roughness of the material compared to dry machining conditions. Although there are many studies investigating the effect of lubrication / cooling conditions during turning of AISI 1040 material, there are no studies on milling. In this respect, it is thought that the study will be an important guide in terms of industrial applications.

Keywords: Surface Roughness, Minimum Quantity Lubrication, Milling

SA/ZB REINFORCED EPOXY COMPOSITE PRODUCTION AND CHARACTERIZATION

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ABSTRACT

In this research, firstly SA synthesized and characterization processes have been carried out. Later, the new composite material has been improved by reinforcing SA epoxy resin with zinc borate. Synthesis and characterization of 4-[(E)-(5-bromo-2-hydroxybenzylidene)amino]-N-(pyrimidin-2-yl)benzenesulfonamide (SA) has been performed. Zinc borate (ZB)/SA reinforced epoxy composites have been synthesized and optimization processes are carried out. SA formed is characterized by fourier transform infrared spectroscopy (FTIR) and nuclear magnetic resonance spectroscopy (NMR), and the composites formed have been investigated. Thermal conductivity coefficient, Shore D hardness, density, and thermal stability of the synthesized organic reinforcement composites have been evaluated and compared.

It is aimed to produce composite according to the purpose of use by looking at the physical and chemical changes in the structure of the products obtained. According to the results, as the amount of SA by mass have been gone up, the density of the epoxy composite decreased. The thermal conductivity coefficient of the composite has increased considerably compared to the increasing (wt.%) SA ratio. It has been found that the Shore D hardness test values of the composite varied inversely with the ratio of (wt.%) SA. Zinc borate has an improvement effect on the composite as it gives both thermal stability and hardness to pure epoxy resin.

Keywords: Epoxy composite, sulfonamide, zinc borate, characterization

EFFECTS OF ARABINOSE AND NARINGIN ON DOG SEMEN

ARABİNOZ VE NARİNGİN'IN KÖPEK SPERMASI ÜZERİNDEKİ ETKİLERİ

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ABSTRACT

Artificial insemination with frozen semen is applicable to canine semen similar to the semen of other animal species. In the present study, the effects of arabinose and naringin on the freezing of canine semen were evaluated.

The present study was conducted with 4 male shepherd dogs aged 2–3 years. Tris stock solution (TAS) was used as the main sperm extender along with 20% egg yolk and 5% glycerol. Sperms were collected from the dogs through digital manipulation. Semen-rich 2nd fraction of the ejaculate was diluted and poured into 0.25-mL straws, then stored at 5 ℃ for 90 min for equilibration. In order to determine sperm motility (%), a drop of the semen sample was placed over a slide and covered with a coverslip and then observed under a phase-contrast microscope (at 37 ℃; at least five microscopic areas viewed for each sample) at 400x magnification. Acrosomal integrity (FITC-PNA/PI) was evaluated using fluorescence microscopy. Total oxidant status (TOS) was evaluated using ELISA method.

It was observed that the Naringin (10 mM) group, in terms of motility (46.3 ±8.54%) and acrosome integrity (59.28 ±3.37%), presented statistical difference ($p<0.05$) with the control group (32.5 ±6.45% and 47.28 ±2.52%, respectively). The lowest TOS (7.41 ±1.72 mmol/L) level were also achieved in the Naringin (10 mM) group. In addition, these results were statistically different from those in the control group ($p <0.05$).

In conclusion, it was determined that the addition of Naringin (10 mM) to the tris-based diluent during the freezing of canine semen was more beneficial compared to the other additives and doses used in the present study. Naringin (10 mM) preserved the spermatological parameters and presented the most successful values in the biochemical evaluation.

Keywords: Arabinose, cryopreservation, naringin, sperm evaluation

ÖZET

Dondurulmuş sperma ile suni tohumlama, diğer hayvan türlerine benzer şekilde köpek spermasındada uygulanabilmektedir. Bu çalışmada arabinoz ve naringinin köpek spermasının dondurulmasına etkileri değerlendirilmiştir.

Bu çalışma 2-3 yaş arası 4 erkek çoban köpeği ile yapılmıştır. Tris stok solüsyonu (TAS) ana sperma sulandırıcısı olarak % 20 yumurta sarısı ve % 5 gliserol ile birlikte kullanıldı. Köpeklerden dijital manipülasyon yoluyla spermler toplandı. Ejakülatın spermadan zengin 2. fraksiyonu sulandırıldı ve 0.25 mL'lik payetlere dolduruldu sonra ekilibrasyon için 5 °C'de 90 dakika süreyle bekletildi. Sperma motilitesini (%) belirlemek için, sperma numunesinin bir damlası bir lam üzerine damlatıldı ve bir lamel ile kapatıldı ardından faz kontrast mikroskopta 400x büyütmede incelendi (37 °C'de; her numune için en az beş mikroskop sahası). Akrozomal bütünlük (FITC-PNA/PI), floresan mikroskobu kullanılarak değerlendirildi. Toplam oksidan statüsü (TOS), ELISA yöntemi kullanılarak değerlendirildi.

Naringin (10 mM) grubunun motilite (%46,3 ±8,54) ve akrozom bütünlüğü (%59,28 ±3,37) açısından kontrol grubu ile istatistiksel farklılık ($p < 0,05$) oluşturduğu belirlendi. (%32,5 ± 6,45 ve %47,28 ±2,52, sırasıyla). En düşük TOS (7.41 ±1.72 mmol/L) seviyesi Naringin (10 mM) grubunda elde edildi. Ayrıca bu sonuçlar kontrol grubundakilerden istatistiksel olarak farklıydı ($p < 0.05$).

Sonuç olarak, köpek spermasının dondurulması sırasında tris bazlı sulandırıcıya Naringin (10 mM) eklenmesinin, bu çalışmada kullanılan diğer katkı maddeleri ve dozlara göre daha faydalı olduğu tespit edilmiştir. Naringin (10 mM), spermatolojik parametreleri koruduğu ve biyokimyasal değerlendirmede daha başarılı sonuçlara ulaşıldı.

Anahtar kelimeler: Arabinoz, krioprezervasyon, naringin, sperm değerlendirmesi

ON CHARPY IMPACT BEHAVIORS OF BASALT FIBER REINFORCED COMPOSITES ENHANCED BY SILICA NANOPARTICLES

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ABSTRACT

The main aim of this work is to examine the effects of silica nanoparticles (NS) on the Charpy impact response of basalt fiber reinforced polymeric composites (BFRPs). The beam-type samples having $(0^o/90^o)_{6s}$ configuration filled with different silica nanoparticle weight percentages (0%, 1%, 2%, and 3%) have been manufactured through vacuum-assisted resin transfer molding (VARTM). The prepared samples as notched and unnotched have been subjected to impact loading in edgewise and flatwise directions, respectively. Furthermore, damaged areas of the samples have been inspected for analysis of the failure modes using the macro-, micro-and nano-sized microscopic views. The findings demonstrated that NS have significant effects on the impact characteristics of BFRPs. The samples with 2 wt.% NS particles have are seen as the most effective configurations for both notched and unnotched configurations. Maximum improvements for notched and unnotched samples are found as 27.38% and 18.33%, respectively. A higher amount of NS inclusion into the epoxy matrix has led to decreases in impact energy and impact strength values due to the formation of agglomeration and weaker fiber-matrix interface. Additionally, failure modes for all samples have observed as matrix cracking, fiber cracking and fiber pull outs.

Keywords: Basalt FRP, Charpy, Impact Energy, Silica Nanoparticle

BULANIK NORMLU HALKALAR ÜZERİNDE BAZI BULANIK İDEALLER VE BULANIK NORMLU EŞKÜMELER

SOME FUZZY IDEALS AND FUZZY NORMED COSETS ON FUZZY NORMED RINGS

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ÖZET

Bulanık normlu halkalar ve idealleri, yazarlar tarafından yakın zamanda çalışılmış bulanık cebirsel yapılardır. Bu çalışmada, bulanık normlu halkalar üzerinde, seviye kümeleri ve bunların özellikleri üzerine lemmalar verilmiştir. Bulanık ideallerin A_t seviye kümelerinin, normlu bir NR halkasının bulanık idealleri olma koşulları incelenmiş ve ilgili teoremler kanıtlanmıştır. Bu çalışma, normlu bir halka üzerinde bulanık seviye idealleri ve bulanık eşkümeler kavramlarını tanımlamaktadır. Bulanık normlu bir halkanın bir A bulanık ideali tarafından belirlenen bulanık bölüm ideali tanımlanmış ve bir homomorfizma ifade edilmiştir. Ayrıca bulanık yarıasal idealler tanımlanmış ve son olarak bir bulanık normlu halka NR'ye ait A bulanık idealinin bulanık yarıasal olması için gerek ve yeter bir şart verilerek ispatlanmıştır.

Anahtar Kelimeler: Bulanık Normlu Halkalar, Bulanık İdealler, Seviye İdeali, Bulanık Normlu Eşkümeler, Bulanık Yarıasal İdealler

ABSTRACT

Fuzzy normed rings and their ideals are fuzzy algebraic structures recently studied by the authors. In this study, on fuzzy normed rings, lemmas on level sets and their properties are given. The conditions for the level sets of the fuzzy ideals A_t to be the fuzzy ideals of a normed ring NR are examined and corresponding theorems are proved. This study proposes the concepts of fuzzy level ideals and fuzzy cosets on a normed ring. The fuzzy quotient ideal determined by the fuzzy ideal A of a fuzzy normed ring is defined and a homomorphism is stated. We also defined fuzzy semiprime ideals and finally, we gave a necessary and sufficient condition for the fuzzy ideal A of a fuzzy normed ring NR to be fuzzy semiprime.

Keywords: Fuzzy Normed Rings, Fuzzy Ideals, Level Ideal, Fuzzy Normed Cosets, Fuzzy Semiprime Ideals

YAŞLI BİREYLERDE UYUM GÜÇLÜĞÜNÜN DEĞERLENDİRİLMESİ VE ETKİLEYEN FAKTÖRLER

EVALUATION OF ADAPTATION DIFFICULTY IN ELDERLY INDIVIDUALS AND AFFECTING FACTORS

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ÖZET

Bu araştırma, yaşlı bireylerde uyum güçlüğünü ve etkileyen faktörleri incelemek amacıyla yapıldı. Kesitsel tanımlayıcı tipte olan araştırma, 26 Ocak - 26 Mart 2021 tarihleri arasında gerçekleştirildi. Veriler, "Yaşlı Bilgi Formu", "Yaşlılarda Uyum Güçlüğünü Değerlendirme Ölçeği (YUGDÖ)" kullanılarak toplandı. Veri toplama formları yüz yüze görüşme yöntemiyle yaşlı bireylere uygulandı. Belirtilen tarih aralığında ulaşılan 150 yaşlı birey araştırmaya dahil edildi. Araştırmaya katılan yaşlı bireylerin yaş ortalamasının 71.29±6.68 olduğu saptandı. Yaşlı bireylerin %60' ının erkek, %94' ünün evli, %42' sinin ilköğretim mezunu, %71.3' ünün gelir gidere eşit olduğu, %92.7' sinin çalışmadığı, %34' ünün sağlık durumunu orta olarak değerlendirdiği, %12.7' sinin sigara kullandığı, %59.3' ünün bakımına yardım eden bireylerin olduğu, %76.7' sinin kronik hastalığı olduğu belirlendi. Araştırmada, geriatrik bireylerin YUGDÖ toplam puan ortalamasının 0.56±0.37 olduğu belirlendi. YUGDÖ' nin alt boyutları incelendiğinde ise, "*Rol ve Kendini Gerçekleştirme Biçimi"* alt boyutunun 0.93±0.54, "*Karşılıklı Bağlanma"* alt boyutunun 0.11±0.28, "*Fizyolojik Durum"* alt boyutunun 0.27±0.40 ve "*Benlik Tarzı"* alt boyutunun 0.79±0.70 olduğu bulundu. Araştırmada yaşlı bireylerin tanıtıcı özelikleri ile YUGDÖ ve alt boyut puan ortalamaları karşılaştırıldığında; cinsiyete göre YUGDÖ toplam ve "*Rol ve Kendini Gerçekleştirme Biçimi"*; mesleğe göre YUGDÖ toplam, "*Rol ve Kendini Gerçekleştirme Biçimi"*, "*Fizyolojik Durum"* ve "*Benlik Tarzı",* gelir durumuna göre YUGDÖ toplam ve "*Rol ve Kendini Gerçekleştirme Biçimi";* sağlık durumuna göre YUGDÖ toplam, "*Rol ve Kendini Gerçekleştirme Biçimi"*, "*Fizyolojik Durum"* ve "*Benlik Tarzı"*; kronik hastalık varlığına göre YUGDÖ toplam, "*Rol ve Kendini Gerçekleştirme Biçimi"*, "*Karşılıklı Bağlanma"*, "*Fizyolojik Durum"* ve "*Benlik Tarzı"* alt boyut puan

ortalamaları arasında anlamlı bir ilişki olduğu saptandı ($p<0.05$). Yaşlı bireylerin uyum güçlüğü puan ortalamasının düşük olduğu ve bireylerin adaptasyon durumlarının yüksek olduğu belirlendi. Cinsiyet, meslek, gelir durumu, sağlık durumu ve kronik hastalık varlığı gibi demografik özelliklerin yaşlı bireylerde uyum güçlüğünü etkilediği saptandı.

Anahtar kelimler: Yaşlı birey, Uyum güçlüğü, Hemşirelik.

ABSTRACT

This study was conducted to examine adaptation difficulty and the affecting factors in elderly individuals. The cross-sectional descriptive study was conducted between January 26 and March 26 2021. The data were collected by using "Elderly Information Form" and "The Assessment Scale of Adaptation Difficulty for the Elderly (ASADE)". The data collection forms were applied to elderly individuals by using face-to-face interview method. 150 elderly individuals who were reached within the specified dates were included in the study. Mean age of the elderly individuals who participated in the study was found as 71.29±6.68. It was found that 60% of the elderly individuals were male, 94% were married, 42% were primary education graduates, 71.3% had income equal to expenditure, 92.7% were not working, 34% evaluated their health status as moderate, 12.7% were smokers, 59.3% had individuals helping with their care and 76.7% had chronic illness. In the study, ASADE total mean score of the geriatric individuals was found as 0.56±0.37. When the factors of ASADE were examined, it was found that mean scores were 0.93±0.54 for "*Role and Self-realization style",* 0.11±0.28 for "*Mutual attachment",* 0.27±0.40 for "*Physiological style"* and 0.79±0.70 for "*The style of self".* When the descriptive characteristics of elderly individuals and their mean scores of ASADE and its factors were compared, significant associations were found between ASADE total and "*Role and Self-realization style*" in terms of gender; between ASADE total and "*Role and Self-realization style*", "*Physiological style*" and "*The style of self*" in terms of profession; ASADE total and "*Role and Self-realization style*" in terms of income status; between ASADE total and "*Role and Self-realization style*", "*Physiological style*" and "*The style of self*" in terms of health status and between ASADE total and "*Role and Self-realization style*", "*Mutual attachment*", "*Physiological style*" and "*The style of self*" in terms of the presence of chronic illness ($p<0.05$). It was found that elderly individuals had low adaptation difficulty mean score and they had high adaptation states. It was found that demographic characteristics such as gender, profession, income status, health status and presence of chronic illness affected adaptation difficulty in elderly individuals.

Key Words: Elderly individual, Adaptation difficulty, Nursing.

SYMPATHETIC SKIN RESPONSE VARIANTS OBSERVED IN MASTICATORY MUSCLE PAIN PATIENTS

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ABSTRACT

Masticatory muscle pain is the most frequent non-odontogenic orofacial pain, affecting up to 14% of the adult population, mostly females. An important clinical aspect of this condition is its association with autonomic disorders and various mental states (anxiety, stress-related disorders, depression, etc.).

Sympathetic skin response is a non-invasive approach for assessing sympathetic system function, allowing the determination of several autonomic indices (amplitudes), but their clinical interpretation is difficult.

The aim was to differentiate variants of sympathetic skin response (optimal, amplified, diminished) and their correlations with anxiety and pain intensity levels in patients with masticatory muscle pain.

46 patients with masticatory muscle pain have been enrolled in the study. Patients were examined in standardized conditions with the NeuroMEP device (Neurosoft) for assessing sympathetic skin responses (SSR), with the determination of sympathetic amplitude (A2). We have used a series of established cutoffs in order to differentiate SSR variants: 1) V1 – optimal sympathetic (ergotropic) variant: A2 = 3.34-3.5 mV; 2) V2 – amplified sympathetic (ergotropic) variant: A2 ≥ 3.51 mV; 3) V3 – diminished sympathetic (ergotropic) variant: A2 ≤ 3.33 mV. GAD7 questionnaire was used to screen clinical level of anxiety and the GCPS questionnaire for CPI index (Characteristic Pain Intensity).

The results in patients with masticatory muscle pain were: V1 – 16 patients (34,78%); V2 – 25 patients (54,35%); V3 – 5 patients (10.87%). Patients with V2 variant had higher levels of anxiety (mean GAD7 score = 17.1): 1) severe anxiety - 17 patients (68%); 2) moderate anxiety – 7 patients (28%); 3) low anxiety – 1 patient (4%). V2 variant patients also had higher mean CPI values (V2 – mean CPI = 54.1), which corresponds to high intensity pain.

There were observed different variants of sympathetic (ergotropic) response in patients with masticatory muscle pain, the amplified variant correlated with more serious clinical indices (higher anxiety and pain intensity levels).

Keywords: sympathetic skin response, sympathetic nervous system, masticatory muscle pain, anxiety, pain intensity.

PROVIDING OF THE *IN VITRO* ORGANOGENESIS FROM DIFFERENT LEAF EXPLANTS OF CROWN IMPERIAL (*Fritillaria imperialis* L.)

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ABSTRACT

Crown imperial (*Fritillaria imperialis* L.), which belongs to *Fritillaria* genus of Liliaceae family, is grown as semi-endemic in Turkey. Since *F. imperialis* is used both as ornamental and medicinal plants, it has an "economic value" that creates supply and demand in the market. Also, *Fritillaria* are among the natural flower bulbs that are forbidden to be harvested from nature and exported within the scope of both the CITES agreement, to which Turkey is a party, and the 'Export List of Natural Flower Bulbs' by the Turkish Ministry. The aim of this study is the micropropagation of *F. imperialis,* whose traditional vegetative and generative productions have some restrictions, using both green leaf explants and petal explants on the varied *in vitro* nutrient mediums. For the green leaf explants, the maximum callus formation ratio of 59.26% was obtained on B5 medium containing 1.0 mg/L BAP + 0.5 mg/L NAA + 0.4 mg/L IAA and 60 g/L sucrose, while the maximum callus formation ratio was 33.3% for the petal explants on MS medium containing the same growth factor content. The results of the experiments used green leaf explants as starting material showed that the medium supplemented with cytokinin BAP and auxins was more efficient in shoot regeneration, while the medium containing cytokinins Kin or TDZ together with auxins was more effective in callus stimulation. The green leaf explants were subcultured after six weeks and 1.35 shoots per green leaf explant regenerated during this period. On the other hand, 1.89 bulblets were obtained per green leaf explant through the indirect organogenesis when they were maintained without any subculture, while the petal leaves formed no bulblets.

Keywords: Fritilllaria, bulblet regeneration, organogenesis

SIÇANLARDA TİMOKİNONUN VE RAPAMİSİNİN KOMBİNE UYGULANMASININ PENİSİLİNLE İLE OLUŞTURULMUŞ EPİLEPTİFORM AKTİVİTE ÜZERİNE ETKİLERİ: BİR ELEKTROFİZYOLOJİK ÇALIŞMA

THE EFFECTS OF THE COMBINED ADMINISTRATION OF TIMOQUINONE AND RAPAMYCIN ON PENICILLIN INDUCED EPILEPTIFORM ACTIVITY IN RATS: AN ELECTROPHYSIOLOGICAL STUDY

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ÖZET

Epilepsi hastalarında nöbetler, hastaların% 60-70'inde monoterapi,% 30-40'ında politerapi gibi diğer tedavi yöntemleriyle kontrol edilmektedir. Bu çalışmanın amacı antiepileptik etkileri gösterilen timokinon (TQ) ve rapamisin (Rap)'in kombine kullanımının sıçanlarda penisilinle oluşturulmuş deneysel epilepsi modeli üzerindeki etkisini elektrofizyolojik olarak araştırmaktır. Bu çalışmada 28 yetişkin erkek Wistar sıçan kullanıldı. Sıçanlar, Kontrol (sadece penisilin uygulandı), TQ (50 mg/kg TQ ve penisilin uygulandı), Rap (0,4 mg/kg Rap ve penisilin uygulandı) ve TQ+Rap (50 mg/kg TQ, 0.4 mg/kg Rap ve penisilin uygulandı) olmak üzere dört gruba ayrıldı. Penisilin dışındaki tüm maddeler intraperitoneal (i.p.) olarak uygulandı. Sıçanlar 1.25 g/kg üretan anestezisi altındayken beyin sol korteks üzerindeki kemik kaldırıldı ve somatomotor alana iki adet elektrot yerleştirildi. Gruplardaki ratlardan beş dakikalık bazal aktivite kaydı alındıktan sonra TQ, Rap ve kombine TQ+Rap enjekte edildi. Madde uygulanmasının 30. dakikasında penisilin (500 IU) intrakortikal olarak (i.c.) uygulandı. Penisilin sonrası 120 dakika daha ECoG kaydı alındı. Kayıtlardan elde edilen elektrokortikografik verilerle ilk epileptiform aktivitenin başlama latensi, zamana bağlı epileptiform aktivitenin diken dalga sıklığı, zamana bağlı diken dalga genliği ve toplam diken dalga sıklığı analiz edildi. İlk epileptiform aktivite başlama latensi bakımından gruplar karşılaştırıldığında her üç grubun latensinin kontrol grubuna göre daha uzun olduğu saptandı. Her üç grubun toplam diken dalga sayılarının kontrol grubuna göre daha düşük olduğu saptandı. Grupların zamana bağlı epileptiform aktivite diken dalga sıklıkları karşılaştırıldığında, her üç grubun diken dalga sıklığının kontrol grubuna göre daha düşük olduğu belirlendi (bazı zaman periyotları hariç). Zamana bağlı diken dalga genlikleri bakımından gruplar arasında istatistiksel olarak anlamlı fark saptanmadı. Mevcut çalışmanın sonuçları, kombine TQ ve Rap

uygulamasının sıçanlarda penisilin ile oluşturulan epilepsi modelinde antiepileptik etkiye sahip olduğunu ve gelecekte potansiyel bir antiepileptik ilaç olabileceğini göstermektedir.

Anahtar Kelimeler: Timokinon, Rapamisin, Epileptiform Aktivite, Elektrokortikografi, Sıçan

ABSTRACT

Seizures are controlled in epilepsy patients by monotherapy in 60-70% of the patients and by other treatment methods such as polytherapy in 30-40% of the patients. The aim of this study is to investigate electrophysiologically the effect of combined use of thymoquinone (TQ) and rapamycin (Rap), which have shown antiepileptic effects, on the experimental epilepsy model induced with penicillin in rats. 28 adult male Wistar rats were used in this study. Rats were divided into four groups as control (only penicillin administered), TQ (50 mg/kg TQ with penicillin), Rap (0.4 mg/kg Rap with penicillin), and TQ+Rap (50 mg/kg TQ, 0.4 mg/kg Rap with penicillin). All substances except penicillin were administered intraperitoneally (i.p). While the rats were under 1.25 g/kg urethane anesthesia, the bone on the left cortex of the brain was removed, and two electrodes were placed in the somatomotor area. TQ, Rap and combined TQ+Rap were administered after five minutes of basal activity was recorded from the rats in the groups. Penicillin (500 IU) was administered intracortical (i.c) at the 30th minute of substance administration. ECoG recording was taken for another 120 minutes after penicillin administration. With the electrocorticographic data obtained from the recordings, the onset latency of the first epileptiform activity, the spike wave frequency of the time-dependent epileptiform activity, the time-dependent spike wave amplitude and the total spike wave frequency were analyzed. When the groups were compared in terms of the onset of the first epileptiform activity it was found that the latency of all three groups was longer than the control group. It was also found that the total number of spike waves in all three groups was lower than the control group. When the time-dependent spike wave frequencies of the groups were compared, it was found that the spike wave frequency of all three groups was lower than the control group (except for some time periods). There was no statistically significant difference between the groups in terms of spike wave amplitudes depending on time. The results of the present study show that combined TQ and Rap administration has an antiepileptic effect in the penicillin-induced epilepsy model in rats, and could be a potential antiepileptic drug in the future.

Key words: Thymoquinone, Rapamycin, Epileptiform Activity, Electrocorticography, Rat

SENIOR NURSING STUDENT'S PERCEPTIONS OF AN INTERPROFESSIONAL SIMULATION-BASED EDUCATION (IPSE): A QUALITATIVE STUDY

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ABSTRACT

Purpose: The purpose of this study was to explore the perceptions and attitudes toward interprofessional simulation-based education among Lebanese senior nursing students. Methods: The study used an exploratory descriptive qualitative approach and collected data through focus groups. All focus group discussions were audiotaped, transcribed verbatim, and narratives were compared with the recordings to establish accuracy, credibility and reliability of data. Qualitative narratives were translated to English and analyzed through an inductive thematic content analysis. This study was reported according to the Standards for Reporting Qualitative Research (SRQR). Results: Four major themes were identified: understanding roles and responsibilities, enhancing collaboration, improve personal and interpersonal skills, and patient outcomes. Conclusion: The senior nursing students showed a positive perception and attitude toward interprofessional simulation-based education. They found that interprofessional simulation-based education increased their knowledge and understanding of the importance of the roles of other professions, as well as their own role in providing patient care. Furthermore, they perceived that interprofessional simulation-based education improved their personal and interpersonal skills. These positive findings may contribute to their future success in an interprofessional team, which could lead to improved patient outcomes. Therefore, future research is needed to see how the reported benefits of interprofessional simulation-based education training are reflected in clinical practice and related to patient outcomes.

Keywords:Health profession,Nursing,Education,Simulation-based education Interprofessional education.

MOLECULAR DOCKING AND ADMET STUDIES OF PYRAZOLINE AND PYRAZOLE DERIVATIVES AS ANTIBACTERIAL AGENT

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ABSTRACT

Research for new powerful antibacterial and antifungal compounds remains a major target for all involved in the drug industry. In this study, a Molecular Docking and in silico ADMET analysis were performed to identify the possible inhibitory effect of 23 molecules on *Escherichia coli* and to predict the absorption, distribution, metabolism, excretion and toxicity of all compounds. Results showed that all the studied molecules could bind to the active site of this bacterium (PDB: 1FJ4). Out of the 23 studied molecules, only 4 molecules were selected for their inhibitory activity and their ability to bind near to the crucial catalytic residues Thr302, Thr300, Val270 and His298 of the main protease. As well, this study provides valuable information on pyrazoline structure and pyrazole derivatives for potential applications as antibacterial agents due to the high inhibition activity. In addition, the result that we obtained allowed us to predict a new potential inhibitor against a target of interest.

Keywords: Molecular Docking; ADMET; *Escherichia coli.*

TETRAHYMENA THERMOPHILA FOR EXTRACELLULAR HETEROLOGOUS PROTEIN EXPRESSION

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ABSTRACT

Tetrahymena thermophila is a model organism that has been extensively used in studying cellular biology. Its cellular structure and metabolic pathways are well known as well as protein expression mechanism in the protozoan. Reporter proteins such as GFP and mCherry has been used to identify protein addressing in the cell which revealed the Granule lattice protein group (Grl1p-9p) were taking important role in making up the dense core granules of the organism in the cortex. It is also known that the *T. thermophila* can be induced to secrete these proteins in the form of a proteinaceous mucus very quickly as a defense mechanism when it is under stress. This feature can be exploited by expressing heterologous proteins in tandem with one of the Grl proteins as a fusion protein. By including a proteinase recognition site in between the Grl and the heterologous protein, the fusion protein can be separated to reveal the desired protein. The cleaved desired protein can be further separated from the mix by affinity chromatography. Separation and purification has been one of the most challenging parts of a recombinant protein production process. This method has the potential to be extremely efficient especially in the separation and purification processes due to the secretion ability of the organism. The quick and on demand protein secretion mechanism makes *T. thermophila* a potentially valuable heterologous protein expression platform. In this study the current recombinant protein expression studies in *Tetrahymena thermophila* are evaluated.

Keywords: *Tetrahymena thermophila*, protein expression, induced secretion

ACCELERATING PLANT GENOME EDITING BY ELIMINATING TISSUE CULTURE

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ABSTRACT

For agricultural production to keep up with the ever-increasing demand with the increasing world population, it is of great importance to adapt current technologies to plants and to use them for plant breeding. The CRISPR-Cas9 genome editing tool has been tested on a wide variety of organisms, from humans to plants, by allowing targeted mutations in the genome, and the successful results obtained have won the 2020 Nobel Prize in Chemistry to researchers who found the technique. In plants, CRISPR-Cas9 genome editing is carried out by delivery of components such as Cas9 and sgRNAs to cultured plant cells and regeneration of edited plants by using tissue culture techniques. Plant tissue culture techniques are laborious, expensive and time-consuming which limits genome editing in plants. Meristems are plant cells or a group of plant cells which have the ability of cell division and are responsible of plant growth. Differentiation to various cell types can be induced by developmental regulators. Co-delivery of developmental regulators with genome editing components to the somatic cells of a plant can produce new meristems with desired DNA modification. *De novo* induction of edited meristems is very promising for plant genome editing studies. It could also increase the commercial scale plant production. Here, this groundbreaking technique is investigated in all its details and its applications on various plants are summarized.

Keywords: CRISPR/Cas9, genome editing, meristem transformation, developmental regulators

COMPUTATIONAL CHEMISTRY FOR RESEARCH INTO THE IN SILICO DESIGN OF NEW CAMKKII INHIBITORS AGAINST OBESITY USING 3D-QSAR AND MOLECULAR DOCKING

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ABSTRACT

The purpose of this research is to discuss the various methods and computational approaches, which are used in computer- aided drug design. For this reason, pyrimidine and azaindole derivatives have been used to study the inhibitory activity Ca^{++}/calmodulin-dependent protein kinase kinase II (CaMKKII). It is an enzyme which enters the brain so as to greatly reduce food from regulating the production of Ghrelin (the hunger hormone) which synthetized by the stomach and act on the hypothalamus. The obtained Results from different technique such as the quantitative three-dimensional structure-activity relationship (3D-QSAR) and molecular docking were applied to study series of new CaMKKII inhibitors of 23 molecules based on pyrimidine and azaindole derivatives. The comparative molecular field analysis (CoMFA) and comparative molecular similarity indices analysis (CoMSIA) models were used 19 molecules in the training set that give high values of determination coefficient R^2 0.970 and 0.899 respectively, and significant values of Leave-One-Out cross- validation coefficient Q^2 0.614 and 0.582 respectively. The predictive capacity of this model was evaluated by external validation by using a test set of four compounds with a predicted determination coefficient test R^2_{Test} of 0.778 and 0.972 successively. The method of alignment adapted with the appropriate parameters gave credible models. The CoMFA and CoMSIA models produce the contour maps which were used to define a 3D-QSAR model. Based on these results, we proposed new molecules with high predicted activities.

Keywords: 3D-QSAR, Molecular Docking, CAMKKII, Obesity.

DİASETİNİN (E1517) SİTOTOKSİK ETKİSİNİN *ALLIUM CEPA* L. KÖK UCUNDA DEĞERLENDİRİLMESİ

EVALUATION OF THE CYTOTOXIC EFFECT OF DIACETIN (E1517) ON *ALLIUM CEPA* L.

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ÖZET

Araştırmamda, yapay bir gıda katkı maddesi olan diasetinin (E1517) (gliseril diasetat) hücrenin mitotik döngüsündeki bozulmaların gözlemlenmesi için geliştirilen Allium cepa test sistemi kullanılarak *Allium cepa* L. kök ucu hücrelerinde meydana getirebileceği sitotoksik etki araştırılmıştır. EC_{50} değerinin belirlenmesi amacıyla, kök uçları diasetinin farklı dozları ile muamele edilmiştir. Dozların kök ucu uzunluğuna etkisini gözlemlemek amacıyla kök uçları ölçülerek EC_{50} (etkili konsantrasyon) 0,050 ml/l olarak saptanmıştır. Daha sonra $EC_{50}/2$ (0.025 ml/l), EC_{50} (0.050 ml/ l), $2XEC_{50}$ (0.100 ml / l) dozlarında 24, 48, 72 saat boyunca bekletilmiştir. Işık mikroskobu ile mitotik hücreler gözlenmiştir. Kontrol grupları, her bir EC_{50} değeri ve süre kombinasyonu uygulaması için en az 5000 hücre sayılmıştır. İnterfaz, profaz, metafaz, anafaz ve telofaz aşamasındaki hücreler mikroskopta incelenmiştir. Mitotik indeks (MI) saptanmıştır. Mitotik indeks yüzdesi şu formülle belirlenmiştir: MI (%)=bölünen hücre sayısı/toplam hücre sayısı×100. Tekrarlanan ölçümlü ANOVA ve TUKEY çoklu karşılaştırma testi uygulanmıştır. İstatistiki açıdan değerlendirildiğinde, dozlar arasındaki farklılığın uygulanan süreye göre farklılık gösterdiği saptanmıştır. Mitotik indeks bakımından, uygulama sürelerinin hepsinde kontrol uygulaması ortalamasının uygulanan diğer dozlara göre oldukça fazla olduğu ve uygulanan doz konsantrasyonunun artmasıyla mitotik indeksin azaldığı ortaya konmuştur. $EC_{50}X2$ dozu ile üç farklı sürede muamele sonucunda, uygulama süresi artışına bağlı olarak istatistiki bakımdan mitotik indeks değerinde azalma olduğu Diasetinin kontol grubuna kıyasla kök uçlarında hücre bölünmesini azalttığı belirlenmiştir. Böylece diasetinin sitotoksik etkisinin olduğu, uygulama süresi ve uygulanan konsantrasyona bağlı olarak sitotoksik etkinin arttığı saptanmıştır. Bu şekilde de mitotik indeksin azaldığı ortaya konmuştur. Araştırmamın sonucu, diasetinin belirli dozlarda ve muamale sürelerinde uygulanmasının hücre bölünmesini azalttığını ve böylece sitotoksik etkide olabileceği belirlenmiştir. Bu nedenle diasetinin belirli dozlar dışında kullanılmaması gerektiği önerilmektedir. Diasetin gıda katkı maddesinin canlı sistemlerde sitotoksik etkisinin araştırıldığı bir çalışma bulunmaması yönüyle araştırmam özgün değerde olduğu düşünülmektedir. Bundan sonra yapılabilecek olan çalışmalar için de kaynak oluşturabilecektir.

Anahtar Kelimeler: Allium cepa testi, diasetin, sitotoksisite

ABSTRACT

In this study, the cytotoxic effect of diacetin (E1517) (glyceryl diacetate), an artificial food additive, on root cells of *Allium cepa* L. was investigated using the Allium cepa test system developed to observe the disruptions in the mitotic cycle of the cell. In order to determine the EC_{50} value, root tips were applied with different doses. EC_{50} was determined as 0.050 ml / l by measuring root tips. It was then stored for 24, 48, 72 hours at the doses of $EC_{50/2}$ (0.025 ml / l), EC_{50} (0.050 ml / l), $2XEC_{50}$ (0.100 ml / l). Mitotic cells were observed with light microscopy. It was counted at least 5000 cells for each application. Repeated measures ANOVA and TUKEY multiple comparison tests were performed. It was found that the difference between doses differed according to applied time. In terms of mitotic index, it was revealed that the mean of control application was quite higher than the other doses applied at all administration times and mitotic index decreased with the increase of the dose concentration applied. A decrease in mitotic index indicates an inhibition of the cell cycle. Diacetin has been determined to decrease cell division at the root tips compared to control group. So, it has been determined that diacetin has a cytotoxic effect and that the cytotoxic effect increases depending on the application time and the applied concentration. In this way, it has been shown that the mitotic index decreased. For this reason, it is recommended that diacetin should not be used outside of certain doses. Since there is no study investigating the cytotoxic effect of diacetin food additive on living systems, it is thought that my research is of unique value.

Key words: Allium cepa test, diacetin, cytotoxicity

SATURATED HYDRAULIC CONDUCTIVITY ESTIMATION OF TERRACE SOIL USING SIMPLIFIED BEERKAN INFILTRATION METHOD

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ABSTRACT

The constant development of infiltration techniques made easier the characterization of soil hydraulic properties in situ. On the last decade, Beerkan infiltration experiments became very popular due to ease of implementation in the field and very low cost in comparison to techniques. Attractive and simple methods were developed for the treatment of Beerkan infiltration experiments such as BEST (Beerkan Estimation Soil Transfer parameters) methods. To reduce soil erosion and sediment transport, terrace techniques are used to promote stormwater infiltration and reduce runoff on slopes. Such techniques are widely used in dam basins in Turkey. Greening or trees planting on such surfaces are also done to improve the infiltration capacity and avoid soil erosion. Therefore, the characterization of the saturated hydraulic conductivity (Ks) of terrace soils is crucial for watershed management and maintenance operation. Beerkan infiltration experiments are very adequate methods for such purposes. However, BEST methods require the soil textural and structural information for Ks estimations. Therefore, sampling and laboratory measurements are necessary. Because it's time consuming and require complementary costs, the monitoring of infiltration capability of terrace soils is not done. However, for purpose of dry soil condition and Ks estimation, simplified methods can be used with very satisfactory results compared to conventional methods. Beerkan infiltration experiments were performed in a terrace of Munzur University campus in Turkey. Two approaches without sampling procedure were used and compared with BEST methods. The results show that all simplified methods gave satisfactory results for Ks estimations. Therefore, simplified methods and Beerkan infiltration can be used for monitoring purpose of terraces and management techniques.

Keywords: Terrace soil, sorptivity, beerkan infiltration, BEST method

DNA CLASTOGENICITY OF MITOMYCIN C: A MECHANISTIC APPROACH via MOLECULAR DOCKING

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ABSTRACT

It is experimentally known that the anticancer drug Mitomycin C (MMC) binds non-covalently to the DNA molecule and induces single- and double-strand breaks. In this study, the mechanism of induction of DNA breaks by MMC was studied using the molecular docking method and the mode of binding of MMC to DNA as well as its mechanism of action were modelled. In the docking calculation performed using the AutoDock Vina program, the inhibition constant (K_i) of the best binding pose of MMC with DNA was found to be 2.69 micromolar, and it was also determined that MMC interacted with DNA via non-covalent hydrogen bonds through minor groove recognition. MMC formed classical and non-classical hydrogen bonds with G-C-G nucleotides on one strand of DNA and with C-G-A-A on the complementary strand in the minor groove region. Although our results are in agreement with the data in the literature, MMC drug interacts selectively with regions of DNA containing CG nucleotides by forming non-covalent bonds, and this interaction occurs in the minor groove region. It was determined that the groups that play the dominant role in the interaction of MMC with DNA are the primary amine and quinonic carbonyl groups on the MMC molecule. The inhibition constant obtained (2.69 µM) also proves why MMC is a strong inducer of DNA-strand breaks.

Keywords: Mitomycin C, DNA clastogenicity, Strand breaks, Minor groove, Non-covalent bonding

ON THE MULTISTRIP BOUNDARY VALUE PROBLEM OF A BOUNDARY FRACTIONAL DIFFERENTIAL EQUATION

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ABSTRACT

The goal of this work is to establish the existence and uniqueness of solutions for a multi-strip integral and multipoint boundary value problem of a nonlinear Riemann–Liouville fractional differential equations. To obtain our results, we apply the Riemann-Liouville fractional theory and the fixed point theory, precisely the Banach contraction principal and the nonlinear alternative of Leray-Schauder . some examples are given to show the applicability of our obtained results.

Keywords: Riemann-Liouville fractional derivative , Banach contraction principal Multistrip.

BAZI BADEM TÜRLERİNDE YAPILMIŞ ÇALIŞMALAR VE BU TÜRLERİN DOKU KÜLTÜRÜ UYGULAMALARI İLE KURAKLIK VE TUZLULUĞA TOLERANSININ BELİRLENMESİNDE KULLANILABİLECEK YÖNTEM

STUDIES MADE ON GENOTYPES OF SOME ALMOND SPECIES AND METHODS USED TO DETERMINE THE TOLERANCE OF THESE SPECIES TO DROUGHT AND SALTNESS WITH TISSUE CULTURE

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ÖZET

Badem, dünya ve ülkemizde gün geçtikçe popülerliği artan bir ürün olarak kendini saydırmaktadır. Ayrıca ülkemize dış girişli bir ürün olması, bademi ülkemiz için daha önemli ve stratejik bir ürün hüviyeti kazandırır. Türkiye'de çerezlik badem dış ülkelerden temin edildiği gibi badem fidanların da yabancı çeşit ve anaçlardan kullanılmaktadır. Ülke iklim ve yetiştiricilik koşullarına uyumlu anaç geliştirmek önemli bir hedeftir. Ülke topraklarının geneli itibari ile toprak tuzluluğu ve kuraklık üzerine sorunlar bulunmaktadır. Tuza ve kuraklığa dayanımı yüksek olan ülke iklimine uyumlu anaç geliştirmek, bu sorun için önemli bir çözüm olarak görülmektedir. Bu tip anaçların elde edilmesi için ülke badem gen kaynakları bakılması gereken ilk noktadır. Talep edilen özellikler ülke topraklarında mevcut olup, istenilen bu özellikteki anaçların ortaya çıkartılması için gen kaynaklarının taranması ile elde edilecek tipler önemli bir materyal kaynağı olacaktır. Bu derleme ile yakın geçmişte yapılmış olan badem seleksiyon çalışmaları, tuzluluk ve kuraklığa karşı yapılmış olan çalışmalar gözden geçirilerek ileride elde edilecek olan anaçların tuza ve kuraklığa hangi yöntem ile bakılacağı belirlenmeye çalışılmıştır. Bu sayede ileri de yapılacak olan badem anaç seleksiyon çalışmalarında tuza ve kuraklığa tolerans derecesinin belirlenmesi üzerine çalışacak olan araştırmacılara ışık tutacaktır.

Anahtar Kelimeler: Badem, doku kültürü, kuraklık, tuzluluk, anaç

ABSTRACT

Almond is counting itself as a product whose popularity is increasing day by day in the world and in our country. In addition, the fact that it is a product with foreign entry into our country makes almond a more important and strategic product for our country of almond almond saplings as confectionary obtained from foreign countries in Turkey also used by foreign varieties and rootstocks. Developing rootstocks compatible with the country's climate and breeding conditions is an important goal. There are problems regarding soil salinity and drought

in general of the country's soils. Developing rootstocks compatible with the climate of the country with high salt and drought resistance is seen as an important solution to this problem. In order to obtain such rootstocks, the country's almond gene resources are the first point to be looked at. The requested features are available in the territory of this country, and the types to be obtained by screening gene sources will be an important source of material in order to reveal the rootstocks with these desired characteristics. With this review, it has been tried to determine the method to be used for salt and drought in future rootstocks by reviewing recent almond selection studies, studies against salinity and drought. In this way, it will shed light on the determination of salt and drought tolerance in almond rootstock selection studies to be carried out in the future.

Keywords: Almond, tissue culture, drought, salinity, rootstock

EVALUATION OF THE SIMULTANEOUS EFFECTS OF GEMCITABINE, LOVASTATIN AND SIMVASTATIN IN AN IN VITRO GLIOBLASTOMA MODEL

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ABSTRACT

Brain tumors are the most frequent solid tumors in children associated with high cancer-related mortality. The most devastating problem in treating brain tumors is inherent in the unique environment of the brain including the presence of the blood–brain barrier. At this point, chemotherapeutics are exposed in combination with other drugs to increase therapeutic efficiency. On the other hand; cholesterol has received increasing attention considering its involvement in carcinogenesis. The elevated cholesterol levels are related with a higher cancer incidence, and cholesterol-lowering drugs (e.g., statins) exhibit beneficial effects by reducing the risk and mortality of cancer. A reasonable assumption is that suppression of tumor growth can be achieved by restricting the presence of cholesterol or its synthesis. The effects of Lovastatin and Simvastatin, which are cholesterol-regulating drugs, on human glioblastoma cells (U87MG) together with Gemcitabine have not been studied yet in the literature. Therefore, in the present study, the effects of these agents on cell viability were evaluated using the Cell Viability Detection Kit 8 (CVDK-8). When treated U87MG cells with IC20 doses, co-administration of Simvastatin, Lovastatin and Gemcitabine reduced cell viability compared to those compounds alone. As a conclusion, Simvastatin and Lovastatin was found to increase the effectiveness of Gemcitabine in an in vitro glioblastoma model.

Keywords: Brain tumor, cytotoxicity, chemotherapeutic, cholesterol metabolism

SURİYE KRİZİNDE HATAY ORMAN ÜRÜNLERİ İŞLETMELERİNİN ALDIĞI DEVLET YARDIMLARI

GOVERNMENT GRANTS USED BY HATAY FOREST PRODUCTS ENTERPRISES IN SYRIAN CRISIS

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ÖZET

Suriye Krizi, Kuzey Afrika ve Ortadoğu'daki çeşitli ülkelerde meydana gelen protesto ve çatışmaların, Suriye'yi etkisi altına alması ve burada iç savaşa dönüşmesi sonucu yaşanan olaylar bütünüdür. Bu krizle beraber milyonlarca Suriyeli ülkelerini terk etmiş ve birçok ülkeye sığınmak zorunda kalmıştır. Bu ülkelerin başında gelen Türkiye açık kapı politikası uygulayarak milyonlarca Suriyeliyi misafir etmiştir. Suriyeli sığınmacılar için geçici barınma merkezleri inşa edilmiş ancak sığınmacıların büyük kısmı kent merkezlerinde yaşamayı tercih etmiştir. Suriyeli sığınmacılar yaşamlarını sürdürdükleri illeri sosyal, ekonomik, demografik ve kültürel olarak etkilemiştir. Hatay da Suriyeli sığınmacıların yoğun olduğu illerden biridir ve ifade edilen etkiler burada açık bir şekilde görünmektedir.

Bu çalışmada Suriye krizi döneminde Hatay orman ürünleri işletmelerinin kullandıkları devlet yardımları hukuki yapıları bakımından araştırılmıştır. Çalışmada 96 işletme sahibine ve/veya yöneticisine yüz yüze görüşme yöntemiyle anket uygulanmıştır. Toplanan veri çapraz tablolarla gösterilmiştir. Çalışmanın sonuçlarına göre Hatay orman ürünleri işletmeleri Suriye krizi sürecinde devlet yardımlarına pek başvurmamıştır. Şahıs işletmeleri en fazla vergi muafiyeti ve yatırım yeri tahsisi desteklerinden faydalanırken; şirketler KDV istisnası, faiz desteği, proje geliştirme desteği ve personel gideri desteğinden faydalanmışlarıdır.

Anahtar kelimeler: Suriye krizi, Devlet yardımları, Orman ürünleri işletmeleri, Hatay

ABSTRACT

The Syrian Crisis is a set of events that took place as a result of the protests and conflicts in various countries in North Africa and the Middle East took Syria under its influence and turned

into a civil war in this country. With this crisis, millions of Syrians left their countries and had to refuge many countries. Turkey, leading of these countries, has hosted millions of Syrians by applying an open door policy. Temporary accommodation centers were built for the Syrian refugees, but most of the refugees preferred to live in the city centers. Syrian refugees have impacted the provinces where they live socially, economically, demographically and culturally. Hatay is one of the provinces with a high concentration of Syrian refugees and the expressed effects are clearly visible here.

In this study, government grants used by Hatay forest products enterprises during the Syrian crisis were investigated in terms of their legal structures. For this aim, a questionnaire was applied to 96 business owners and/or managers using face-to-face interviews. The collected data are shown with crosstabs. According to the results of the study, Hatay forest products enterprises did not apply for government grants much during the Syrian crisis. While sole proprietorships benefit the most from tax exemption and investment location allowance; companies benefited from VAT exemption, interest support, project development support and personnel expense support.

Keywords: Syrian crisis, Government grants, Forest products enterprises, Hatay

SİNİROTU (*PLANTAGO MAJOR*) YAPRAKLARININ ANTİBAKTERİYEL ETKİSİ

ANTIBACTERIAL EFFECT OF TORTOISESHELL (PLANTAGO MAJOR) LEAVES

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ÖZET

Plantago major halk arasında bağa yaprağı, "sinirli ot, balazağva, damarlıot, damarotu, kırksinirotu, sinirotu" gibi isimlerle tanınmaktadır. *P. major*, Amerika Birleşik Devletleri, Avrupa ve Asya'da ve İran'da yaygın olarak yetişen çok yıllık bir bitkidir. Bu bitki kabızlık, öksürük, yara, enfeksiyon, ateş, iltihaplanma ve kanamalar gibi çeşitli hastalıkların tedavilerinde kullanılan flavonoidler, polisakkaritler, terpenoidler, lipitler, iridoid glikozitler ve kafeik asit türevleri gibi çeşitli farmakolojik bileşikler yönünden zengindir.

Bu çalışmada Kars Yöresinde yaygın olarak yetişen sinirotu (*P. major*) yaprak bölümünün seçilen dokuz bakteriye karşı antibakteriyel etkinliğinin araştırılması amaçlanmaktadır. Çalışmada *Escherichia coli, Bacillus subtilis, Bacillus cereus, Pseudomonas aeruginosa, Serratia marcescens, Klebsiella pneumoniae, Pasteurella multocida, Yersinia enterocolitica* ve *Staphylococcus aureus* standart suşları kullanılmıştır. Sinirotu (*P. major*) yapraklarının metanol, etanol, distile su, petrol eteri ve aseton ile maserasyon yöntemi ile ekstraktı çıkarılmıştır. Elde edilen ekstraktların seçilen bakteriler üzerindeki etkinliği agar kuyucuk difüzyon yöntemi ile tespit edilmiş ve etkin olan ekstraktların Minimum İnhibisyon Konsantrasyonları (MİK) ve Minimum Bakterisidal Konsantrasyonları (MBK) tespit edilmiştir.

Elde edilen ekstraktların *Escherichia coli, Bacillus subtilis, Bacillus cereus* üzerine antibakteriyel etkinliği olmadığı, en yüksek zon çapının ise *Pseudomonas aeruginosa* üzerine aseton ekstresi (28 mm) tarafından oluşturulduğu, su ektraktının bakteriler üzerine herhangi bir etkinliğinin bulunmadığı, petrol eteri ekstraktının ise sadece *Pseudomonas aeruginosa* üzerine 6 mm zon oluşturduğu, en etkili ekstraktın ise metanol ekstraktı olduğu tespit edilmiştir. MİK'in zon çapları ile uyumlu olduğu, *Pseudomonas aeruginosa* üzerine aseton ekstresinin 125 mg/mL konsantrasyonunda inhibisyon 250 mg/mL konsantrasyonunda ise bakterisidal etkisi olduğu görülmüştür. En düşük MİK konsanrasyonu 62,5 mg/mL oranında *Yersinia enterocolitica* üzerine metanol ekstraktı olarak tespit edilmiştir.

Yapılan çalışma sonucunda; sinirotu (*P. major*) yapraklarının bakterilere karşı beklenen düzeyde antibakteriyel etkisi olduğu gözlenmektedir. Bu çalışma doğal olarak yetişen bu bitkinin birçok hastalığın tedavisinde geleneksel olarak kullanımının doğruluğunu desteklemektedir.

Anahtar Kelimeler: Antibakteriyel etki, Agar kuyucuk difüzyon yöntemi, Sinirotu (*Plantago major*).

ABSTRACT

Plantago major is popularly known by names such as tortoiseshell, balazaga, veinygrass, edible grass, veinwort, forty plantain. *P. major* is a perennial herb widely grown in the Asia, United States, and Europe. This plant is rich in various pharmacological compounds such as polysaccharides, lipids, terpenoids, flavonoids, iridoid glycosides and caffeic acid derivatives used in the treatment of various diseases such as cough, wound, constipation, infection, fever, inflammation and bleeding.

This study, it is aimed to investigate the antibacterial activity of the leaf part of tortoiseshell (*P. major*) widely grown in the Kars Region against nine selected bacteria. Standard strains of *Escherichia coli, Bacillus subtilis, Bacillus cereus, Pseudomonas aeruginosa, Serratia marcescens, Klebsiella pneumoniae, Pasteurella multocida, Yersinia enterocolitica,* and *Staphylococcus aureus* were used in this study. Tortoiseshell (*P. major*) leaves were extracted by maceration with methanol, ethanol, distilled water, petroleum ether, and acetone. The effectiveness of the obtained extracts on the selected bacteria was determined by the agar well diffusion method and the Minimum Inhibition Concentrations (MIC) and Minimum Bactericidal Concentrations (MBC) of the active extracts were determined.

The extracts obtained did not have antibacterial activity on *Escherichia coli, Bacillus subtilis, Bacillus cereus,* the highest zone diameter was formed by acetone extract (28 mm) on *Pseudomonas aeruginosa*, the water extract did not have any activity on bacteria, the petroleum ether extracts was determined that it formed a 6 mm zone only on *Pseudomonas aeruginosa*, and the most effective extract was methanol extract. It was observed that MIC was compatible with the zone diameters, inhibition at 125 mg/mL concentration of acetone extract, and bactericidal effect at 250 mg/mL concentration on *Pseudomonas aeruginosa*. The lowest MIC concentration was determined as methanol extract on *Yersinia enterocolitica* at the rate of 62.5 mg/mL.

As a result of the study; It is observed that the leaves of tortoiseshell (*P. major*) have an expected level of antibacterial effect against bacteria. This study supports the traditional use of this naturally grown plant in the treatment of many diseases.

Keywords: Antibacterial effect, Agar well diffusion method, Tortoiseshell (*Plantago major*).

KEÇİ VE KOYUN AĞIZ SÜTÜNDEN İZOLE EDİLEN BAKTERİYOSİN ÜRETİCİSİ *ENTEROCOCCUS FAECIUM* VE *ENTEROCOCCUS MUNDTII* SUŞLARININ ENZİM PROFİLLERİNİN BELİRLENMESİ

DETERMINATION OF ENZYME PROFILES OF BACTERIOCIN PRODUCER *ENTEROCOCCUS FAECIUM* AND *ENTEROCOCCUS MUNDTII* STRAINS ISOLATED FROM GOAT AND SHEEP COLOSTRUM

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ÖZET

Homofermentatif laktik asit bakterisi olan enterokoklar peynir ve sosis gibi çeşitli fermente gıdaların olgunlaşmasında ve lezzetinin arttırılmasında önemli katkı sağlarlar. Enterokokların süt ürünlerinde en önemli rolü, gelişme ve olgunlaşma sürecinde organoleptik özelliklerin geliştirilmesi ve ürettikleri bakteriyosinler ile ürün güvenliğine katkı sağlamalarıdır. Enterokoklar, enzim aktiviteleri ile olgunlaşma sırasında peynirin tadına ve aromasına katkıda bulunurlar.

Bu çalışmada, Isparta ve Antalya illerinde yeni doğum yapmış 189 keçi ve koyundan sağılan ağız sütü örneklerinden izole edilmiş ve moleküler yöntemler ile tanımlanmış 2 *Enterococcus faecium* ve 11 *Enterococcus mundtii* olmak üzere 13 bakteriyosin üreticisi suşun enzim profilleri araştırılmıştır. *Enterococcus* suşlarının enzim profillerinin belirlenmesinde API® ZYM kiti (BioMérieux, Ref. 25 200, Marcy-I'Etoile, Fransa) kullanılmıştır. Enzim profili belirleme denemeleri sonucu *Enterococcus* suşlarının tamamının esteraz (C 4), esteraz lipaz (C 8), lösin arilamidaz, asit fosfataz (*E. mundtii* HC26.1 hariç) ve naftol-AS-Bl-fosfohidrolaz pozitif sonuç verdiği görülmüştür. İzolatların alkalin fosfotaz, lipaz, tripsin, α-kemotripsin (*E.*

faecium HC121.4 hariç), α-galaktozidaz, β-galaktozidaz (*E. mundtii* HC26.1 hariç), β-glukronidaz, α-glukozidaz, β-glukozidaz (*E. mundtii* HC26.1 hariç), N-asetil β-glukozamidaz, α-mannozidaz ve α-fukosidaz aktivitesi ise göstermediği belirlenmiştir. Valin arilamidaz ve sistin arilamidaz enzimlerinin ise izolatlarda farklı düzeylerde üretildiği tespit edilmiştir.

Enzim aktivitesi testi sonucu esteraz, esteraz lipaz, asit fosfataz, fosfohidrolaz ve aminopeptidaz aktivitesine sahip olduğu tespit edilen bakteriyosin üreticisi *E. faecium* ve *E. mundtii* suşlarının peynir üretiminde starter kültür olarak kullanım potansiyeline sahip oldukları belirlenmiştir.

Anahtar Kelimeler: Bakteriyosin, *Enterococcus*, Ağız Sütü, Enzim Aktivitesi

ABSTRACT

Enterococci, which are homofermentative lactic acid bacteria, make an important contribution to the maturation and flavor enhancement of various fermented foods such as cheese and sausage. The most important role of enterococci in dairy products is to improve organoleptic properties during development and maturation and to contribute to product safety with the bacteriocins they produce. Enterococci contribute to the taste and flavor of cheese during ripening with their enzyme activities

In this study, enzyme profiles of 13 bacteriocin producer strains, 2 *Enterococcus faecium* and 11 *Enterococcus mundtii*, isolated from colostrum samples from 189 newly give birth goats and sheep in Isparta and Antalya provinces and defined by molecular methods, were investigated. API® ZYM kit (BioMérieux, Ref. 25 200, Marcy-I'Etoile, France) was used to determine the enzyme profiles of *Enterococcus* strains. As a result of enzyme profiling experiments, it was observed that all *Enterococcus* strains gave positive results for esterase (C 4), esterase lipase (C 8), leucine arylamidase, acid phosphatase (except *E. mundtii* HC26.1) and naphthol-AS-Bl-phosphohydrolase. Alkaline phosphatase, lipase, trypsin, α-chemotrypsin (except *E. faecium* HC121.4), α-galactosidase, β-galactosidase (except *E. mundtii* HC26.1), β-glucuronidase, α-glucosidase, β-glucosidase (except *E. mundtii* HC26.1) *E. mundtii* HC26.1, except N-acetyl β-glucoamidase, α-mannosidase and α-fucosidase activities were determined to be absent. It was determined that valine arylamidase and cystine arylamidase enzymes were produced at different levels in isolates. It was determined that the bacteriocin producer *E. faecium* and *E. mundtii* strains, which were found to have esterase, esterase lipase, acid phosphatase, phosphohydrolase and aminopeptidase activities as a result of the enzyme activity test, have the potential to be used as starter cultures in cheese production.

Keywords: Bacteriocin, *Enterococcus*, Colostrum, Enzyme Activity

*This study was financially supported by the Scientific and Technological Research Council of Turkey (TÜBİTAK) within the scope of the TOVAG 119O104 project. We thank TÜBİTAK for its support.

POLİETİLEN GLİKOL (PEG-300) KATKILI POLİÜRETAN KÖPÜKLERİN NÖTRON SOĞURMA ÖZELLİKLERİNİN İYİLEŞTİRİLMESİ

ENHANCEMENT OF NEUTRON ABSORPTION OF PEG-300 DOPED POLYURETHANE FOAMS

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ÖZET

İyonlaştırıcı radyasyonun çevre ve insan yaşamı için zararlı etkileri mevcuttur. İyonlaştırıcı radyasyonun bu zararlı etkilerinden korunmak için radyasyon zırhı malzemeler en iyi seçim olabilir ve radyasyon zırhı malzemelerin kullanım amacı gelen radyasyon şiddetinin daha güvenilir seviyeye ulaştırılmasıdır. Ağır beton, çelik ve alüminyum nükleer teknolojide kullanılan zırh malzemeleridir ve zamanla oluşan mikro-çatlaklar, korozyon ve düşük termal dayanım gibi bazı dezavantajlara sahiptir. Özellikle, yaygın olarak kullanılan zırh malzemeleri yüksek maliyet ve toksik etkilerinden dolayı uygun değildir. Son yıllarda, nötron soğurucu malzeme olarak yeni nesil polimer kompozit malzemeler üstün mekanik ve termal özelliklerinden dolayı dikkat çekmektedir. Bu çalışmada ilk olarak nötron etkileşimlerinin karmaşıklığından dolayı, farklı PEG-300 konsantrasyonlarına sahip poliüretan köpüklerin nötron soğurma özellikleri incelenmiştir.

Anahtar Kelimeler: Polietilen glikol, Nötron soğurma, Poliüretan köpük

ABSTRACT

It is generally known that the ionizing radiation has a harmful effect on human-being and environmental life. To avoid from the harmful effects of ionizing radiation, the radiation shielding materials may be the best choice and the aim of the radiation shielding materials is to attenuate the radiation flux to a safety level. In nuclear technology, the shielding materials are heavy concrete, steel and aluminum and these have some disadvantages stated as micro-cracks, corrosion and lower thermal resistance. Especially, conventional radiation shielding materials are inconvenient due to its high cost and toxic property. In recent years, novel type of polymer composites gains more attention as a neutron absorber material owing to its superior mechanical and thermal properties. In this study, the neutron absorption capability of polyurethane foams with different PEG-300 concentrations were investigated at first due to the complexity of neutron interactions.

Keywords: Polyethylene glycol, neutron absorption, polyurethane foam

IMPLEMENTATION OF WASTE CLASSIFICATION SYSTEM USING DEEP LEARNING

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ABSTRACT

When waste is not separated correctly, it has negative consequences for the world. These problems can be counted as environmental pollution, lack of recycling, and shortage of raw materials. The low accuracy of the processes performed by man power in the waste separation factories, the amount of waste that can be recovered is less than expected and the separation process takes a long time. Intelligent waste classification system is aimed to increase the amount of waste separated correctly and to decrease the separation time. Thus, it will be beneficial in terms of the amount of recycled products. Waste is classified with the camera system based on deep learning and placed in the appropriate waste bin by the robotic arm. Convolutional Neural Network model is used for classification. 98% accuracy is achieved for the study. A4 TECH PK-910H PC Camera, Braccio Robotic arm, Arduino Uno, and OpenCV are used for the implementation. The designed system classifies the waste and the robotic arm takes the waste to put in an appropriate waste bin.

Keywords: Convolutional Neural Network, Braccio Robotic arm, Image classification

*HELİCHRYSUM PLİCATUM'*UN YAĞ ASİT KOMPOZİSYONLARININ GC/FID İLE BELİRLENMESİ

DETERMINATION OF FATTY ACID COMPOSITIONS OF *HELICHRYSUM PLICATUM* BY GC/FID

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ÖZET

Bitkilerin hastalıkların tedavisinde kullanımı çok eski yıllardan beri süregelmektedir. Günümüzde ise *Helichrysum* türleri halk arasında tedavi amaçlı kullanılmaya devam etmektedir. Anadolu'da genellikle "ölmez çiçek, altın otu ve mantuvar" olarak bilinen *Helichrysum* türleri yara, yanık tedavisinde ve böbrek taşlarının düşürülmesinde kullanılmaktadır. *Helichrysum* türleri, flavonoidler, fenolik asitler, ftalitler, kumarinler, pironlar ve terpenler gibi sekonder metabolitleri içermektedir. Ayrıca birçok çalışmada *Helichrysum* türlerinin antimikrobiyal, antioksidan, antienflamatuar, antidiabetik gibi birçok biyolojik aktiviteye sahip olduğu belirtilmiştir.

Bu çalışmada, Kahramanmaraş ilinde aktardan ticari olarak satın alınan *Helichrysum plicatum* bitkisinin toprak üstü kısımlarının yağ oranı ve yağ asit kompozisyonlarının belirlenmesi amaçlanmıştır. Yapılan çalışmada *H. plicatum* bitkisinden soksalet yöntemiyle yağ elde edilmiştir. Elde edilen bu yağın, yağ oranı (%) tespit edilmiş olup, daha sonra yağ asidi metil esterleri işlemi yapılmıştır. Yağ asidi kompozisyonu ise Alev İyonlaştırıcı Dedektörlü (FID), Shimadzu Gaz Kromatografisi cihazı kullanılarak belirlenmiştir.

Araştırma sonuçlarına göre, *H. plicatum* bitkisinin yağ oranı %2,32 olarak tespit edilmiştir. *H. plicatum* bitkisinde toplam 6 tanesi (% 76.459) doymuş, 4 tanesi (% 23.541) doymamış olmak üzere toplamda 10 adet yağ asidi (% 100) tayin edilmiştir. Bunların başlıcaları; % 23.109 lignoserik asit, %21.955 behenik asit, % 11.978 gama-linolenik asit , % 9.846 palmitik asit, % 9.485 miristik asit, % 9.354 stearik asit, % 4.645 oleik asit ve % 4.742 cis-4,7,10,13,16,19 dokosaheksaenoik'tir.

Analiz sonucunda, doymuş yağ asitlerinin oranının fazla olmasına rağmen, doymamış yağ asitlerinin oranı da yeterli görülmektedir. Doymamış yağ asitlerinin bileşiminde gama-linolenik asit oranın yüksek olması önem arz etmektedir. Gama-linolenik asit, çoklu doymamış yağ asidi olup, güçlü bir nutrasötik maddedir. Özellikle sedef hastalığı ve egzama gibi cilt rahatsızlıklarında ilaç olarak da yararlanılmaktadır.

Bu çalışma ile *H. plicatum*'da tespit edilen çeşitli yağ asitlerinin bu bitkinin endüstri, ilaç, gıda, kozmetik ve sanayi alanlarında kullanımına katkısı olacağı kanatindeyiz.

Anahtar Kelimeler: *Helichrysum plicatum,* Gaz Kromatografisi/Alev İyonlaştırıcı Dedektör, Yağ asit bileşenleri

ABSTRACT

The use of plants in the treatment of diseases has been on for many years. Nowadays, *Helichrysum* species continue to be used for therapeutic purposes among the public. *Helichrysum* species, commonly known as "ölmez çiçek, altın otu and mantuvar" in Anatolia, are used to treatment wounds, burns and removing kidney stones. *Helichrysum* species include secondary metabolites such as flavonoids, phenolic acids, phthalides, coumarins, pyrones, and terpenes. In addition, many studies have indicated that *Helichrysum* species have many biological activities, such as antimicrobial, antioxidant, anti-inflammatory, antidiabetic.

In this study, it was aimed to determine the fat ratio and fatty acid composition aerial parts of *Helichrysum plicatum* plant, which was purchased from the herbalist in Kahramanmaras. In the study, oil was obtained from *H. plicatum* plant by the soxhlet method. The fat ratio (%) of this resulting oil was determined and then the fatty acids were methylated. Fatty acid composition was determined using Shimadzu gas chromatography device with flame ionization detector (FID).

According to research results, the fat ratio of the *H. plicatum* plant was 2.32%. A total of 10 (100%) fatty acids were determined in *H. plicatum* plant, 6 (% 76.459) of which were saturated and 4 (% 23.541) of which were unsaturated. The main ones are 23.109 % lignoceric acid, 21.955 % behenic acid, 11.978 % gamma-linolenic acid, 9.846 % palmitic acid, 9.485 % myristic acid, 9.354% stearic acid, % 4.645 oleic acid and % 4.742 cis-4,7,10,13,16,19-docosahexaenoic acid .

As a result of the analysis, although the ratio of saturated fatty acids is high, the ratio of unsaturated fatty acids is also considered sufficient. It is important that the gamma-linolenic acid ratio is high in the composition of unsaturated fatty acids. Gamma-linolenic acid is a polyunsaturated fatty acid, which is a strong nutraceutical substance. It is also used as a drug, especially for skin conditions such as psoriasis and eczema.

With this study, we believe that various fatty acids detected in *H. plicatum* will contribute to the use of this plant in industrial, pharmaceutical, food, cosmetics and industrial areas.

Keywords: *Helichrysum plicatum*, Gas Chromatography/Flame Ionization Detector, Fatty Acid Composition

RECEPTOR LIKE-KINASES IN PLANT DEFENCE

BİTKİ SAVUNMASINDA RESEPTÖR BENZERİ KİNAZLAR

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ABSTRACT

Abiotic stresses have several effects on plants, resulting in growth retardation and crop production reduction. To cope with abiotic stress, plants have developed different mechanisms to respond and adapt to continuously changing environmental factors. In recent years, research on the Receptor like-kinases (RLKs) have focused on the reveal molecular mechanism of RLKs in response to abiotic stress, disease resistance and signal transduction in plants. RLKs are serine/threonine protein kinases -which include an extracellular domain recognizing specific ligands, a membrane-spanning domain, and a conserved cytoplasmic kinase region- transduce signals from the environment and other cells. Several RLKs have been studied to be involved in response to abiotic stresses, such as drought, salt, cold, toxic metals/metalloids. In this study, recent studies on RLKs involved in plant responses to abiotic stress, including drought, salt, cold, toxic metals/metalloids will be discussed.

Keywords: Receptor like-kinases, Abiotic Stress, Biotic Stress

ÖZET

Abiyotik streslerin bitkiler üzerinde çeşitli etkileri vardır, bu da büyümenin gecikmesine ve mahsul üretiminin azalmasına neden olur. Abiyotik stresle başa çıkmak için bitkiler, sürekli değişen çevresel faktörlere yanıt vermek ve bunlara uyum sağlamak için farklı mekanizmalar geliştirmişlerdir. Son yıllarda, Reseptör benzeri kinazlar (RLK'ler) üzerine yapılan araştırmalar, bitkilerdeki abiyotik stres, hastalık direnci ve sinyal iletimine yanıt olarak RLK'lerin moleküler mekanizmasını ortaya çıkarmaya odaklanmaktadır. RLK'ler, spesifik ligandları tanıyan hücre dışı domaini, membranı/hücre zarını kat eden bir domaini ve korunmuş sitoplazmik kinaz bölgesini içeren, çevreden ve diğer hücrelerden gelen sinyalleri ileten bir serin/treonin protein kinazdır. Kuraklık, tuz, soğuk, toksik metaller/metaloidler gibi abiyotik strese verilen yanıtta rol oynayan RLK'ların bir kısmı çalışılmıştır. Bu çalışmada, kuraklık, tuz, soğuk, toksik metaller/metaloidler dahil olmak üzere bitkilerde abiyotik strese verilen yanıtta yer alan RLK'ler üzerine yapılan son çalışmalar tartışılacaktır.

Anahtar Kelimeler: Reseptör Benzeri Kinazlar, Abiyotik Stres, Biotic Stress

PROTECTIVE EFFECT OF GINGER (ZINGIBER OFFICINALE) AGAINST PESTICIDE TOXICITY ON COGNITIVE BEHAVIOR AND THYROID FUNCTION IN FEMALE WISTAR RATS

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ABSTRACT

Experimental studies indicate that many pesticides are capable of affecting the functioning of the hypothalamic-pituitary-thyroid axis at different levels. In this study, we attempted to evaluate the protective effect of ginger and toxicological effect of pesticide on thyroid function and cognitive behavior by using a T-Maze test in an animal model; The study was conducted in female wistar rats, which received an inhalation dose of Abamectin: 5.04 mg/l/1hr, the main results of this study showed significant disruption of thyroid hormones (TSH, T4, T3) caused by the inhalation of Abamectin and altered cognitive behavior.

In addition, the administration of ginger by gavage had a significant effect on memory and the learning system, indicating an increase in correct choice in female rats and a regulatory effect on thyroid hormones.

Key words: Ginger, pesticide, thyroid hormones, cognitive behavior, T-Maze test

INVESTIGATION OF PF CELLS WITH CULTURING IN DMEM-H AND ALPHA-MEM MEDIA FOR USAGE IN TISSUE ENGINEERING STUDIES

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ÖZET

Perikardiyal sıvı (PF) kalbin etrafını çevreleyerek kalbin dinamik yapısının korunmasında önemlidir. Kalp hastalıklarının teşhis ve tedavisinde PF miktarındaki artış ve içeriğinde meydana gelen değişimler kritik bir rol almaktadır. Bu çalışmada, sığırdan alınan pericardiyal fluid hücreleri (PFc) izole edilerek Dmem-H ve Alpha-Mem besi yerleri ile kültürü yapılmıştır. On gün boyunca PFc ler bu iki besi yerinde kültüre edilerek hücre canlılığı ve farklılaşması karşılaştırılmıştır. Alpha-Mem besi yerinde 3. gün itibari ile hücrelerin kültür kabı tabanına tutunarak koloniler oluşturmaya başladığı gözlenmiştir. Dmem-H besi yeri kullanılarak yapılan kültürde ise 6. günün sonunda hücrelerin kültür kabı tabanına tutunmaya başladığı gözlenmiştir. Kültürün 10. gününde her iki besi yerinde farklı morfolojilerde hücrelere rastlanmıştır. bu çalışmada elde edilen sonuçlara göre, Alpha-Mem besi yerinde hücre çoğalması ve hücre morfolojilerindeki farklılaşmanın daha fazla olduğu sonucuna varılmıştır. Sonuç olarak, PF'nin heretojen hücre topluluğu içermesi ve Dmem-H besi yeri kullanarak kültüre edilen hücrelerin farklı morfolojilere sahip olmasından hücre gruplarından bazıları için Dmem-H besi yeri ile hücrelerin kültüre edilebileceği de öngörülmektedir. Ayrıca bu çalışma, bilinen hücre dizilerine alternatif olarak doku mühendisliği çalışmalarında PF hücrelerinin kullanılabilmesi açısından önemlidir.

Anahtar kelimeler: Perikardiyal sıvı (PF), Perikardiyal sıvı hücreleri (PFc), Kalp, Doku mühendisliği

ABSTRACT

Pericardial fluid (PF) is essential in maintaining the dynamic structure of the heart by surrounding the heart. The increasing PF and the changes in its content play a critical role in diagnosing and treating heart diseases. In this study, pericardial fluid cells (PFc) from cattle were isolated and cultured using Dmem-H and Alpha-Mem media. Cell viability and differentiation were compared by culturing PFcs on these two media for ten days. It was observed that the cells began to form colonies by attaching to the bottom of the culture dish as

of the 3rd day in the Alpha-Mem medium. In culture using Dmem-H medium, it was observed that at the end of the 6th day, the cells began to adhere to the bottom of the culture dish. On the 10th day of culture, cells with different morphologies were found in both media. According to the results obtained in this study, it was concluded that there was more cell proliferation and differentiation in cell morphology in the Alpha-Mem medium. As a result, it is predicted that cells can be cultured with the Dmem-H medium for some of the cell groups. Because PF contains a heterogeneous cell population and cells cultured using the Dmem-H medium have different morphologies. In addition, this study is important in terms of using PF cells in tissue engineering studies as an alternative to known cell lines.

Key words: Pericardial Fluid, Pericardial Fluid cells (PFc), Heart, Tissue engineering

LASIODERMA SERRICORNE'DEN (FABRICIUS, 1792) (COLEOPTERA ANOBIIDAE) TÜRKİYE'DEN BİR NEMATOD PARAZİTİNİN İLK KAYDI

FIRST RECORDS OF A NEMATODE PARASITE FROM LASIODERMA SERRICORNE (FABRICIUS, 1792) (COLEOPTERA ANOBIIDAE) IN TURKEY

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ÖZET

Tarhana, geleneksel bir Türk fermente gıda ürünüdür. Ürünün hazırlanmasında geleneksel bir el yapımı teknik kullanılmaktadır. Üretiminde ağırlıklı olarak buğday unu, yoğurt, çiğ veya pişmiş sebzeler domates, soğan, biber, ekmek mayası, tuz ayrıca Tarhana otu (*Echinophora sibthorpiana*) ve çeşitli baharatlar kullanılmaktadır. Ekonomik bir ürün olarak da kullanılan tarhana, depolanma aşamasında zararlı böcekler tarafından besin kaynağı olarak tüketilmektedir.

Tatlı kurt veya sigara böceği olarak ta bilinen *Lasioderma serricorne* (Fabricius, 1792) (Coleoptera Anobiidae) dünya çapında en yaygın depolanmış ürün zararlılarından biridir. Zararlıları kontrol etmek için kullanılan pestisit veya çeşitli kimyasalların diğer canlılar üzerinde özellikle de insan üzerinde zararlı etkileri vardır. Zararlıların doğal patojenleri ve parazitleri, kimyasal böcek öldürücüler yerine zararlıların alternatif biyolojik kontrol ajanlarıdır.

Bu çalışmada, *L. serricorne* böcekleri, 2020 yılı Eylül-Aralık ayları arasında Trabzon ilinden toplanmıştır. Toplanan örnekler, Ringer solüsyonunda disekte edildi ve ışık mikroskobu altında 100X ila 1000X büyütme oranında incelendi. Tespit edilen nematod parazitleri, ZEISS Axicam ERc 5s dijital kameralı ZEISS AX10 mikroskobu kullanılarak ölçülmüş ve fotoğraflanmıştır.

Nematodlar, hayatlarının belli bir aşamasında konakçı içinde gelişen zorunlu böcek parazitleridir. Etkileri, tamamen öldürmek yerine, yaşam süresinin kısaltılması veya konağın üreme potansiyelinin azaltılması yoluyla gerçekleşir. Türkiye'de *L. serricorne*'un nematod paraziti ile ilgili bir çalışma yoktur, ancak Türkiye'de Coleoptera takımına ait farklı böceklerden nematod parazitinin enfeksiyonu ile ilgili çok sayıda rapor bulunmaktadır. Bu çalışmada Türkiye'nin Karadeniz bölgesinde Trabzon ilinde *L. serricorne* kaynaklı nematod paraziti rapor edilmiştir. Nematod parazitinin juvenil formu silindirik, uzun yapılıyken böceklerin hemolenfinde ve orta bağırsağında gözlenmiştir. İki tip nematod paraziti tespit edildi. 1. Tip nematod juvenil formu 194,6 µm uzunluk ve 11,01 µm (n: 30) genişliğindedir. 2. Tip juvenil form 156,3 µm uzunluk ve 13,4 µm (n: 32) genişliğindedir. 2. tip nematodlar 1. tip nematodlardan daha kısa ve iri yapılıyken pürüzlü bir yüzeye sahiptir. Bu çalışma süresince

316 böcek incelendi ve toplam nematod enfeksiyonu oranı %12'dir. Bu çalışma, Türkiye'den *L. serricorne* kaynaklı nematod parazitinin dünya literatürüne yönelik ilk raporudur.

Anahtar Kelimeler: *Lasioderma serricorne*, nematod, parazit, tarhana, Türkiye

ABSTRACT

Tarhana is a traditional Turkish fermented food product. A traditional handmade technique is used in the preparation of the product. Mainly wheat flour and yoghurt, raw or cooked vegetables, tomato, onion, pepper, bread yeast, salt, Tarhana grass (*Echinophora sibthorpiana*) and various spices are used in its production. Tarhana, which is also used as a financial product, is consumed as a food source by pests during storage.

Cigarette beetle, *Lasioderma serricorne* (F.) (Coleoptera: Anobiidae) is among the most common stored-product beetle species worldwide. The used pesticides or traps to control the pests have harmful effects on other living creatures especially human. The natural pathogens and parasites of pests are alternative biological control agents of pest instead of chemical insecticides.

The insects were collected from Trabzon city of Turkey from September to December 2020. Collected insects are dissected in Ringer's solution and examined under the light microscope at a magnification from 100X to 1000X. Nematode parasites were measured and photographed using ZEISS AX10 microscope with digital camera ZEISS Axicam ERc 5s.

Nematodes are obligate insect parasites that develop inside the host over a period of time. Their effect is realized by shortening the life span or lessening the reproductive potential of the host, rather than killing it outright. There is no study on the nematode parasite of *L. serricorne* in Turkey. Still, several reports about infection of nematode parasite from different insects belonging to the Coleoptera order in Turkey exist.

In this study, we observed the Nematode parasite from *L. serricorne* in Trabzon city in the Black Sea region of Turkey. The juvenile form of the nematode parasite is cylindrical, elongated and observed in the haemocoel and midgut of insects. Two types of nematode parasites were detected. The first type juvenile forms of the nematode parasite are 194.6 µm length and width 11.01 µm (n: 30), Second type juvenile forms parasite are 156.3 µm length and width 13.4 µm (n: 32). Type 2 nematodes have a shorter, coarse and rough surface than Type 1 nematodes. Three hundred sixteen beetles were examined, and the total rate of the nematode parasite is 12 %.

This study is the first report of Nematode parasite from *L. serricorne* from Turkey for world literature. The nematode parasite was observed, but it was not identified.

Keywords: *Lasioderma serricorne*, nematode, parasite, tarhana, Turkey

COMBINED EFFECT AF SIZE AND TEMPERATURE ON THE LINEAR AND NONLINEAR OPTICAL ABSORPTION COEFFICIENTS OF INGAN/GAN ASYMMETRIC QW

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SUMMARY

For two decades, the studies of nanostructures based on III-nitrides semiconductors. Both experimentally and theoretically has attracted a wide interest, in the research of low-dimensional semiconductors hetero-structures due to their intrinsic chemical and physical properties, and their wide and narrow band-gaps such as GaN (3.42 eV) and InN (0.78 eV) respectively and their interesting alloys such as InGaN and AlGaN with a direct band-gaps, make them an excellent candidates for high tech applications in electronic and optoelectronic devices such as high-power, high-temperature optoelectronic devices, such as, laser diodes (LDs), high-brightness blue and green light emitting diodes (LEDs), infrared photo-detectors, infrared lasers, high-speed electro-optical modulators, high electron mobility transistors HTEM, optical memory technology and so on. The deep studies of those low-dimension systems on quantum heterostructures open new fields in fundamental physics, and also offered a wide range of potential applications for optoelectronic and energy technology (Leobandung and team workers). In addition, the advanced of the nanostructure growth techniques, such as the metal organic chemical vapor deposition (MOCVD) and molecular-beam epitaxy (MBE) lead to the accelerated development of research in this area. By changing the characteristic (profile, size, doping concentration, etc) of semiconductor quantum wells (QWs), both the intra/intersubband transitions energy levels and their wave functions vary, so do changes different physical and thermodynamic properties depending on them. Due to a wide range of technological applications. The optical subband transitions have been investigated in different geometrical form such as square simple and multiple quantum wells (SMQWs) cylindrical quantum wells (CQWs), parabolic quantum wells (PQWs) and in spherical quantum dots (SQWs) including external perturbations, such as magnetic, electric fields, intense laser fields, pressure, temperature, coupling effects and distinct doping processes. Linear and third-order nonlinear optical absorption coefficients and the intrasubband optical transitions in low-dimensional semiconductor nanostructures have attracted remarkable attention due to the strong and weak quantum confinement effect depending on the well size, leading to small and high

energy separation between state levels, large value of dipole transition matrix element and possibility of achieving resonance cases.

Keywords: Asymmetric double quantum well; InGaN ; GaN; OACs.

ABSTRACT

In this paper, we provide a theoretical investigation of the temperature and size of the structure on the electron wave functions, the energy levels, the dipole matrix element, the linear, third-order nonlinear, and total optical absorption coefficients (LOAC and NLOAC) of asymmetric GaN/$In_{0.15}Ga_{0.85}N$/GaN quantum wells (ADQWs). We have considered a finite confinement potential profile. The Schrodinger-Poison equation solved, the eigenvalues and their correspondent eigenvectors are obtained using the finite element method (FEM). The results shown that the wave function, the energy levels, and the dipole matrix elements changes by changing temperature and the dimension of the nanostructure. In addition, the resonant peaks of OACs and their associated magnitudes depend essentielly on the size and temperature. Therefore, we hope this contribution provide a significant improvement in (In,Ga)N semiconductors based device applications, for appropriate values of temperature and the size of the QWs as well.

Keywords: Asymmetric double quantum well; InGaN ; GaN; OACs.

LAPAROSKOPİK KASIK FITIĞI ONARIMINDA YENİ BİR HİBRİD TEKNİK: TAPP + PLUG MESH UYGULAMASI(VİDEO SUNUMU)

A NEW HYBRID TECNIQUE IN LAPAROSCOPIC GROIN HERNIA REPAIR: TAPP + PLUG MESH (VIDEO PRESENTATION)

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ÖZET

Giriş: Teknolojik gelişmeler neticesinde kasık fıtığı onarımında açık teknikler sonrasında minimal invaziv tekniklere yönelim artmıştır. Laparoskopik kasık fıtığı onarımında birçok teknik tarif edilmiştir. Yapılan çalışmalarda kasık fıtığı onarımında nüksler bildirilmiştir. Avrupa Herni Derneği nüks kasık fıtıklarında önceki cerrahide posterior yaklaşımla yapıldıysa, anterior yaklaşımı önermektedir. Literatürde kasık fıtığında meshin kaymasına bağlı nüksler bildirilmiştir. Bu çalışmalarda anterior yaklaşımla plug mesh uygulanarak nüks herni tamiri yapılmıştır. Nükslerin ve neticesinde ortaya çıkan komplikasyonların önlenmesi için yeni bir hibrit teknik uyguladık. Direkt kasık fıtığı olan 2 hastaya tamamen laparoskopik olarak TAPP(transabdominal preperitoneal) ve plug meshi kombine ederek uyguladık.

Olgular: Çalışmaya dahil edilen hastalar 64 ve 50 yaşında, 2 erkek hasta idi. Sağ kasıkta ele gelen şişlik nedeniyle başvuran hastaların yapılan fizik muayenesinde sağ kasıkta direkt fıtık saptandı. Her iki hastaya da USG incelemesi yapıldı. Yapılan USG incelemede iki hastada da sağ kasıkta direkt herni olduğu saptandı. Herhangi bir strangülasyon veya inkarserasyon bulgusu yoktu. Hastalara transbadominal preperitoneal yaklaşımla hem plug mesh hem de polipropilen mesh uygulandı.

Genel anestezi altında transabdominal yaklaşımla laparoskopik olarak periton açıldı. Fıtık keseleri total olarak diseke edildi ve batın içerisine çekildi. Klasik TAPP yönteminde uygulanan mesh yayılmadan önce defektlerin içerisine hazırlanan plug mesh yerleştirildi. Emilebilen mesh sabitleyici kullanılarak plug meshler Cooper ligamanına tespit edildi. Sonrasında 12x15 cm lik polipropilen mesh TAPP tekniğine uygun olarak yayıldı ve yine emilebilen mesh sabitleyici kullanılarak birçok noktadan sabitlendi. Periton intrakorporal sütüre edilerek kapatıldı.

Hastalar ameliyat sonrası 1. gününde komplikasyonsuz olarak taburcu edildi. Hastaların ameliyat sonrası 10.gün, 6. ve 12. ayda yapılan kontrollerinde herhangi bir nüks veya komplikasyona rastlanmadı.

Sonuç: Kasık fıtığı onarımlarından sonra nüksler görülebilmektedir. Laparoskopik yaklaşımlarda kullanılan meshin kaymasına bağlı nüksler olabilmektedir. Daha önce tarif edilen plug mesh uygulamasını TAPP kasık fıtığı tamiri ile kombine ederek 2 hastada uyguladık.

Laparoskopik olarak mesh kaymasına bağlı ortaya çıkan nükslerin önlenmesinde bu tekniğin faydalı olabileceği kanaatindeyiz.

Anahtar kelimeler: TAPP, plug mesh, nüks

ABSTRACT

Introduction: As a result of technological developments, the tendency to minimally invasive techniques has increased after open techniques in inguinal hernia repair. Many techniques have been described in laparoscopic inguinal hernia repair. Recurrences have been reported in inguinal hernia repair in studies. The European Hernia Society recommends the anterior approach in recurrent inguinal hernias if the posterior approach was performed in previous surgery. In the literature, recurrences due to slippage of the inguinal hernia have been reported. In these studies, recurrent hernia repair was performed by applying plug mesh with anterior approach. We applied a new hybrid technique to prevent recurrences and consequent complications. We applied totally laparoscopically to 2 patients with direct inguinal hernia by combining TAPP(transabdominal preperitoneal) repair and plug mesh.

Patients and Method: The patients included in the study were 64 and 50 years old, 2 male patients. A direct hernia was found in the right groin in the physical examination of the patients who presented with a palpable swelling in the right groin. USG examination was performed in both patients. In the USG examination, direct hernia in the right groin was detected in both patients. There were no signs of strangulation or incarceration. Both plug mesh and polypropylene mesh were applied to the patients with the transbadominal preperitoneal approach.

The peritoneum was opened laparoscopically with a transabdominal approach under general anesthesia. Hernia sacs were totally dissected and pulled into the abdomen. Before the mesh applied in the classical TAPP method was spread, the prepared plug mesh was placed into the defects. Plug meshes were fixed to Cooper's ligament using absorbable mesh fixer. Afterwards, 12x15 cm polypropylene mesh was spread in accordance with the TAPP technique and fixed at many points using absorbable mesh fixer. The peritoneum was closed with intracorporeal suturing.

The patients were discharged on the 1st postoperative day without any complications. No recurrence or complication was observed in the follow-ups of the patients at the 10th day, 6th **and 12th months after surgery.**

Conclusion: After inguinal hernia repairs, recurrences can be seen. There may be recurrences due to slippage of the mesh used in laparoscopic approaches. We combined the previously described plug mesh application with TAPP inguinal hernia repair in 2 patients. We believe that this technique can be useful in preventing recurrences due to laparoscopic mesh slippage.

Keywords: TAPP, plug mesh, reccurence

ANALYSE PHYTOCHIMIQUE ET EVALUATION DE L'ACTIVITE DE L'EXTRAIT DE FENUGREC SUR LE MODELE ANIMAL

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Résumé

Description du sujet : Les graines de fenugrec sont des graines d'herbes bien connues utilisées par l'Homme dans différents pays comme épices. En plus, les graines sèches sont utilisées dans de nombreux pays, à des fins médicales comme anti-tussif, analgésique, galactagogue, emménagogue et comme agents antimicrobiens[1,2,3] .La plante de fenugrec est cultivée dans la région méditerranéenne, Afrique, Asie centrale et Australie[4,5] . Elle est liée à la famille des légumineuses et son nom scientifique est Trigonella Foenum - graceum[1,5].

Objectifs : L'objectif de cette recherche consiste à renforcer les données scientifiques sur l'intérêt d'utilisation de l'extrait aqueux des graines de fenugrec dans le domaine médical.

Méthodes : 21 rats mâles ont été utilisés dans cette étude, réparties en trois groupes dont un groupe témoin (T) et un groupe traité par l'extrait aqueux du fenugrec (F) pendent 30 jours par voie orale.

Résultats : Nos résultats montrent une baisse remarquable du taux de glycémie chez les rats traités par rapport aux témoins ainsi qu'une diminution du cholestérol total, de LDL et une augmentation significative de HDL, une stimulation de l'appétit et un gain de poids.

Conclusion : Les résultats trouvés montrent que l'extrait aqueux des graines du fenugrec améliore des paramètres biochimiques et augmente le poids chez le rat wistar.

Mots clés: Fenugrec ; Rats wistar ; glycémie ; poids.

LİNYİTTEN ALKALİ LİÇ İLE ELDE EDİLEN HÜMİNİN ORGANİK MADDE İÇERİĞİNE KARIŞTIRMA VE BOYUTLANDIRMANIN ETKİSİ

EFFECT OF MIXING AND SIZING ON THE ORGANIC SUBSTANCE OF HUMINE OBTAINED BY ALKALINE LEACHING FROM LIGNITE

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ÖZET

Tarımsal alanda verimi ve ürün kalitesini arttırmak amacıyla, uzun yıllardır kimyasal gübreleme yapıldığı bilinmektedir. Toprağa karıştırılan kimyasal gübrenin bitki tarafından kullanılmayan kısmı, yeraltı ve yerüstü sularına karışarak çeşitli sorunlara yol açmaktadır. Kimyasal gübre yerine organik gübre kullanılması ile bunun önlemek mümkündür. En önemli toprak organik maddeleri hümik asit ve fulvik asittir. Bu hümik maddeler sadece toprak, turba ve kompostlarda değil, aynı zamanda linyit, bitümlü kömür, leonardit ve gitya (organik çamur) içerisinde bulunan doğal maddelerdir. Türkiye'deki kömür yataklarının çoğunun genç linyit olması nedeniyle kalorifik değerleri düşük ve mineral madde içerikleri yüksek olduğundan, doğrudan yakılıp enerji üretiminde kullanılması ekonomik olmamaktadır. Hümik maddelerce zengin olan bu linyitlerden alkali liç yöntemiyle hümik madde elde edilmesiyle, çevre ve canlı sağlığına zarar vermeden tarımsal verimi arttırmak mümkündür. Bu çalışmada, Ermenek-Konya linyitinden NaOH ve KOH kullanılarak alkali liç ile hümin elde edilmiştir. Elde edilen hüminin organik madde içeriğine, mekanik karıştırma süresinin ve tane boyutlandırmanın etkisi araştırılmıştır. Deneylerde 10, 20 ve 30 dk olmak üzere üç farklı karıştırma süresi ve -1,15+0,85 ; -0,85+0,5 ve -0,5+0,3 mm olmak üzere üç farklı tane boyutu kullanılmıştır. Tüm bu deneylerin sonucunda optimum organik madde içerikleri 20 dakika karıştırma süresi ve -0,85+0,5 mm tane boyutunda elde edilmiştir. Ayrıca, NaOH ile elde edilen hüminlerde organik madde içeriğinin daha yüksek olduğu belirlenmiştir. Çalışmanın sonucunda, Ermenek linyitinden alkali liç yöntemiyle elde edilen hüminin organik madde içeriğinin arttırılabileceği ve toprakta organo-mineral gübre olarak kullanılabileceği önerilmiştir.

Anahtar kelimeler: Linyit, Alkali liç, Organik gübre, Hümin.

ABSTRACT

It is known that chemical fertilization has been used for many years to increase the yield and product quality in the agricultural field. The part of the chemical fertilizer mixed with the soil, which is not used by the plant, mixes with the underground and surface waters, causing various problems. It is possible to prevent this by using organic fertilizers instead of chemical fertilizers.

The most important soil organic substances are humic acid and fulvic acid. These humic substances are natural substances found not only in soil, peat and compost but also in lignite, bituminous coal, leonardite and gyttja (organic mud). Since most of the coal deposits in Turkey are young lignite, their calorific value is low and their mineral content is high, it is not economical to directly burn them and use them in energy production. It is possible to increase agricultural productivity without harming the environment and living health by obtaining humic substances from these lignites, which are rich in humic substances, by alkali leaching method. In this study, humine was obtained from Ermenek-Konya lignite by alkaline leaching using NaOH and KOH. The effects of mechanical mixing time and grain sizing on the organic matter content of the obtained humine were investigated. Three different mixing times of 10, 20 and 30 minutes and three different particle sizes of -1.15+0.85, -0.85+0.5 and -0.5+0.3 mm were used in the experiments. As a result of all these experiments, optimum organic matter contents were obtained with 20 minutes of mixing time and -0.85+0.5 mm particle size. In addition, it was determined that the organic matter content was higher in humines obtained with NaOH. As a result of the study, it has been suggested that the organic matter content of humine obtained from Ermenek lignite by alkaline leaching method can be increased and it can be used as an organo-mineral fertilizer in the soil.

Keywords: Lignite, Alkaline leaching, Organic fertilizer, Humine.

NUTRITIONAL QUALITY OF CORN (*ZEA MAYS*) OIL

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ABSTRACT

Corn (*Zea mays*) oil is considered as one of the oldest edible oil that is extracted from the germ of corn. It is known as highly versatile cooking oil that is safe and healthy for human beings. Corn oil is good for deep frying due to presence of ferulic acid and its derivatives. Therefore, corn oil is widely used in snack industry because it produces perfect crispness and flavors which has tendency to improve without loss of shelf life. It is good source of essential fatty acids and omega-3 fatty acids. Corn oil contained 45% to 50%polyunsaturated fatty acid, 30% to 40% monounsaturated fatty acids and 10% to 15% saturated fatty acids. This fatty acid composition depends upon the variety, cultivar type, growing conditions, storage environment, extraction methods and history of the seeds. Furthermore, it is composed of triacylglycerol, tocopherol and phytosterol molecules. That's because it is highly beneficial for heart, eyes, and skin health. It also contained significant amount of vitamin E that is a power full antioxidant. Therefore, corn oil can reduce free radical activity, reduce oxidative stress, reduce inflammation, reduce headache, reduce allergic reactivity, prevent skin infections, and reduce blood pressure in the body and biological system. Thus, corn oil is considered as one of the healthiest oils amongst cooking oils and should be recommended for regular consumptions.

Keywords: Corn oil, Edible Oil, Fatty Acid Profile, Color Compounds, Antioxidant Activity

DEVELOPING MOBILE GAME ON INDONESIAN MULTI CULTURE FOR CHILDREN

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ABSTRACT

Multicultural education is an idea, an educational reform movement, and a process to create equal educational opportunities for all students, including those from different racial, ethnic, and social-class groups. The multicultural teaching materials with the Indonesian heritage theme are important by students, since they have to understand the cultural aspect of the nation. Teaching materials with the theme of the archipelago should be developed by teachers based on books or another resources. This paper aims to develop a mobile game application to support learning resources for children. In developing the application, the researchers conduct qualitative approaches Edugame Development consists of 5 stages: concept, design, production, lunch, maintenance. It is hoped that the mobile game application would be easier, more fun, and interesting especially for children. This research is still ongoing and is aimed at ensuring that the mobile game application is an effective and feasible model to inform students about the Indonesian culture.

Keywords: multucultural education; game; educational game; mobile devices

PEPINO'DA (*SOLANUM MURICATUM* AIT.) AŞILAMA TUZLUK TOLERANSINI İYİLEŞTİRİR Mİ?

DOES GRAFTING IMPROVE SALINITY TOLERANCE IN PEPINO (*SOLANUM MURICATUM* AIT.)?

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ÖZET

Türkiye'ye en son tanıtılan sebzelerden biri olan aşılı pepino bitkilerinin kök morfolojik gelişimine 1 veya 4 $dS \cdot m^{-1}$ klorür iyonu ile tuz stresinin etkisi, iklim odası koşullarında sürekli havalandırmalı besin çözeltisinde incelenmiştir. Pepino, Solanaceae familyasına ait az bilinen bir sebze ürünüdür. Meyveleri aromatik, sulu, kokulu, hafif tatlıdır ve çeşidine göre boyut, şekil ve renk bakımından farklılık gösterir. Lezzeti ve çekici görünümü, besin değeri ve tıbbi kullanımları nedeniyle Türkiye'de pepinoya olan ihtiyaç artmaktadır. Bu amaçla pepino ile domates anacı aşılanarak Mart – Nisan 2017 tarihleri arasında iki farklı tuz seviyesinde beş hafta süreyle incelenmiştir. Aşısız pepino bitkileri control bitkisi olarak değerlendirilmiştir. Deneme üç tekerrürlü olarak tesadüf parselleri deneme desenine göre kurulmuştur. Aşılı ve aşısız pepino bitkilerinin kök taze ve kuru ağırlıkları, toplam kök uzunluğu, kök hacmi ve kök çapı gibi kök morfolojik parametreleri analiz edilmiştir. Tuz stresi altındaki pepino bitkilerinin kök yaş ve kuru ağırlıklarında, toplam kök uzunluğunda ve toplam kök çapında aşılamadan bağımsız olarak önemli derecede azalmalar tespit edilmiştir. Aşılı ve aşısız bitkilerin çoğu kök taze ve kuru ağırlığı, toplam kök uzunluğu, kök hacmi ve çapı bakımından tuz uygulamalarına önemli seviyede farklılıklar göstermiştir. Besin çözeltisindeki klorür konsantrasyonunun artmasıyla aşılı ve aşısız bitkilerde kök taze ve kuru ağırlığı, toplam kök uzunluğu ve kök çapı kontrole kıyasla önemli ölçüde azalmıştır. Bununla birlikte, tuz stresi koşulları altında kök hacmi önemli ölçüde artmıştır. Aşılı bitkiler, aşısız bitkilere kıyasla önemli ölçüde daha yüksek kök taze ve kuru ağırlığı, toplam kök uzunluğu, kök hacmi ve çapı değerleri sergilemişlerdir. Bu çalışma ile birlikte aşılı pepino üretimi için gelecek vaat eden tuza dayanıklı domates anaç genotiplerinin kullanılması tavsiye edilmektedir.

Anahtar Kelimeler: *Solanum muricatum*, tuzluluk, kök morfolojisi, pepino, aşılama.

ABSTRACT

The effect of salt stress with 1, or 4 $dS \cdot m^{-1}$ chloride ions on root morphological development of grafted pepino plants which is one of the latest introduced vegetables to Turkey was studied in continuously aerated nutrient solution under climate chamber conditions. Pepino (*Solanum*

muricatum Aiton) is a little known vegetable crop which belongs to the family Solanaceae. Its fruits are aromatic, juicy, scented, mild sweet, and vary in size, shape and colour depending on the cultivar. The requirement for pepino is rising in Turkey owing to its flavor and attractive appearance, nutritional value, and medicinal uses. For this purpose, pepino seedlings were grafted on to tomato rootstocks and examined under two different salt levels within March – April 2017 for five weeks. Non-grafted pepino seedlings were kept as controls under both salt levels. The experimental model was a completely randomized block design (CRBD) with three replications. Root morphological parameters such as root fresh and dry biomass, total root length, root volume and root diameter of grafted and non-grafted pepino plants were analyzed. Regardless of grafting, significant declines were detected in root fresh and dry weight, total root length, and total root diameter of pepino plants under salt stress. Grafted and non-grafted plants varied considerably in their response to salt treatments in most root fresh and dry biomass, total root length, root volume and diameter. Increasing chloride concentration in the nutrient solution reduced root fresh and dry biomass, total root length and root diameter of grafted and non-grafted plants significantly relative to the control. Though, root volume was significantly enhanced under salt stress conditions. Grafted plants produced significantly higher root fresh and dry biomass, total root length, root volume and diameter as compared to non-grafted plants. It would highly recommend use of promising salt tolerant tomato rootstock genotypes for grafted pepino production.

Keywords: *Solanum muricatum*, salinity, root morphology, pepino, grafting.

THE IMPACT OF LONG-TERM CONSUMPTION OF ASPARTAME ON LIVER FUNCTION AND THE HISTOPATHOLOGICAL STUDY ON WISTAR RATS

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ABSTRACT

Studied back and forth for over 50 years, aspartame is arguably the most controversial artificial sweetener of all. Even today, it raises suspicion and yet it is still present in many foods and drinks. Under the international code Sin 951, with an authorized daily dose (ADI) of 40 mg / kg, maximum authorized per day. Some studies carried out in recent years in humans or animals have concluded that there is a link between the dose of aspartame received and adverse effects.

The present study aims to evaluate the long-term effect of aspartame with different doses (ASP 1:40; ASP2:60, ASP3:1000 mg/kg body weight) for 90 days orally (gastric feeding), on liver (liver function parameters with histopathological studies in Wistar rats.

Our results show a dose-dependent disturbance of liver function: a non-significant decrease of Alanine aminotransferase (GPT) (ALT) levels, a significant increase of Glutamo-oxaloacetic transaminase (GOT)/(AST) levels in the 40 mg and 60 mg/kg bw groups, and a highly significant increase in the third group treated with 1000 mg/kg bw of aspartame compared to the control groups.

The histology examination shows us the administration of aspartame increases hepatocellular damage, inducing leukocyte infiltration, reduction of the nuclear zone and degeneration of hepatocytes with an increase in the diameter of hepatic sinusoids in different areas of the liver.

Keywords: Aspartame, Gastric feeding, Liver functions, Hispathology, Wistar.

JAPON BILDIRCINLARINDA (COTURNİX COTURNİX JAPONİCA) ARCUS AORTA VE DALLARI

THE AORTIC ARCH AND BRANCHES ABOUT JAPANESE QUAILS (COTURNIX JAPONICA)

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ÖZET

Çalışma Japon bıldırcınlarında arcus aortadan çıkan damarların belirlenmesi amacıyla yapıldı. Araştırmada 10 adet Japon bıldırcını kullanıldı. Latex enjeksiyon metodu uygulanarak damarların seyri ve dallanmaları belirlendi. Aorta ascendens orjininden hemen sonra truncus brachiocephalicus sinister ve dexteri verdi. Bu damarlarda a. carotis communis'leri verdikten sonra damarın devamı olan a. subclavia olarak seyrine devam etti. Sağ ve sol a. brachiocephalica'lardan orijin alan a. subclavia dexter ve sinister'in göğüs ve kanatların vaskularizasyonunun sağlandığı saptandı. Esas kanatların beslenmesini sağlayan A. axillaris; a.subclavia'nın bir dalı olup memelilerdeki gibi devamı değildi. Damarın, a. axillaris'i vermeden hemen önce truncus pectoralis ve a. sternoclavicularis'i (a. coracoidea) verdiği tespit edildi.

Anahtar kelimeler: Arcus aorta, Anatomi, Bıldırcın.

ABSTRACT

The goal of this study is to determine the vessels emerging from the aortic arch in Japanese quails. 10 Japanese quails were used in the study. By applying the latex injection method; the way the veins move in the body and the branching of the vessels were determined/defined.

Right after the origin of the ascending aorta gave brachiocephalic trunk sinister and dexter. In these veins after giving the common carotid arteries, the veins flow in the body and continues as the subclavian artery. The right and left brachiocephalic artery is originated from the subclavian artery dexter and sinister. The veins inside the chest and wings, subclavian artery dexter and sinister is found to be provided in vascularization. The axillary artery is supplied with nutrition for the wings; subclavian artery was a branch and not a continuation branch in

mammals. Just before giving the axillary artery the thoracoacromial artery and sternoclavicular joint (anterior choroidal artery) was detected.

Keywords: Arcus aorta, Anatomy, Coturnix coturnix japonica

FIRST PRINCIPLES INVESTIGATION OF INFLUENCE OF VARIED Cr ATOM ON BAND STRUCTURE AND MAGNETIC MOMENT OF RUTILE SnO_2

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ABSTRACT

The electronic and magnetic properties of SnO_2 doped with various compositions of chromium atom are reported. Studies on magnetic property of $Cr_xSn_{1-x}O_2$ compounds features possible room temperature ferromagnetism which increased nonlinearly as Sn atom is replaced with Cr atom, at x = 0.25(1.9976 μB), x = 0.50 (3.9309 μB), x = 0.75(5.8831 μB) and x = 1.00 (7.821 μB). The magnetic moment and band gap energy of undiluted SnO_2 were compared at x = 0. Addition of Cr atom into SnO_2 enhanced the shift from pure binary nonmetallic system to ternary metallic compound. The direct energy gaps decrease from x = 0 to 0.5, and increase from x = 0.75 to 1.00.

Keywords: Rutile, First-principles, Generalized Gradient Approximation, Magnetic moment, magnetic dipole moment.

BAZI BULANIK DÖNÜŞÜM YARIGRUPLARI ÜZERİNE

ON SOME FUZZY TRANSFORMATION SEMIGROUPS

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ÖZET

Bu çalışmada, bulanık bağıntılar yarıgrubu ile ilgili bazı tanımlar ve örnekler verilmiştir. Bulanık bağıntılar için yeni bir gösterim şekli önerilmiştir. Kısmi bulanık dönüşüm yarıgrubu, tam bulanık dönüşüm yarıgrubu, birebir kısmi bulanık dönüşümler ve tekil bulanık dönüşümler kavramları ortaya atılmıştır. Konuyla ilgili örnekler verilmiş ve çeşitli lemmalar ve sonuçlar ifade ve ispat edilmiştir

Anahtar Kelimeler: Bulanık kümeler; Bulanık bağıntılar; Bulanık dönüşüm yarıgrubu; Tekil bulanık dönüşüm yarıgrubu

ABSTRACT

In this paper, some definitions and examples are given on the fuzzy relations semigroup. A new notation is proposed for fuzzy relations. The concepts of partial fuzzy transformation semigroup, full fuzzy transformation semigroup, one-to-one partial fuzzy transformations and singular fuzzy transformations are introduced. Regarding examples are given and several lemmas and results are proposed and proved.

Keywords: Fuzzy sets; Fuzzy relations; Fuzzy transformation semigroup; Singular fuzzy transformation semigroup

FARKLI GIDALARDAN İZOLE EDİLEN VANKOMİSİN DİRENÇLİ LAKTOBASİLLERİN ANTİBİYOTİK DİRENÇ PROFİLLERİNİN VE DİRENÇ GENLERİNİN BELİRLENMESİ

DETERMINATION OF ANTIBIOTIC RESISTANCE PROFILES AND RESISTANCE GENES OF VANCOMYCIN-RESISTANT *LACTOBACILLUS* ISOLATED FROM DIFFERENT FOODS

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ÖZET

Laktik asit bakterileri (LAB), fermente ürünlere istenen tat, aroma ve tekstürel özellikleri kazandırmalarının yanı sıra ürettikleri metabolitler aracılığıyla patojen bakterilerin inhibisyonunu ve ürünün raf ömrünün arttırılmasını sağlamaktadır. Bununla birlikte bazı LAB sağlık üzerine olumlu etkileri bakımından da önem taşımaktadır. GRAS statüsünde yer alan *Lactobacillus* spp. insan ve hayvan uygulamaları için güvenli kabul edilmektedir. Bununla birlikte düşük oranda da olsa bazı *Lactobacillus* türlerine ait klinik vakalar tanımlanmıştır. Laktobasil kaynaklı enfeksiyonlar düşük seviyelerde gözlense de bu bakterilerin sahip oldukları antibiyotik direnç genlerini patojen bakterilere aktarma olasılığı büyük tehdit oluşturmaktadır.

Bu çalışma kapsamında farklı gıdalardan izole edilen vankomisin dirençli laktobasillerin tür düzeyinde tanısı gerçekleştirilmiş, izolatların antibiyotik direnci fenotipik ve genotipik metotlarla incelenmiştir. Bu amaçla daha önce farklı hayvansal gıdalardan izole edilen 30 adet laktobasil izolatının genomik DNA'sı elde edilmiş, örneklerin 16S rDNA bölgesi polimeraz zincir reaksiyonu (PZR) ile çoğaltılmıştır. PZR ürünlerinin DNA dizi analizi sonuçlarına göre izolatların 22 adedi *Lactobacillus plantarum*, 3 adedi *L. paracasei* subsp. *tolerans*, 2 adedi *L. sakei* subsp. *sakei*, 1 adedi *L. rhamnosus*, 1 adedi *L. fermentum*, 1 adedi *L. curvatus* olarak tanımlanmıştır.

İzolatların antibiyotik direnç profilleri disk difüzyon yöntemi kullanılarak 18 adet antibiyotiğe karşı belirlenmiştir. Antibiyotik disk difüzyon testi sonuçlarına göre izolatların %90'ının vankomisin, %86.67'sinin sefoksitin, %66.67'sinin norfloksasin antibiyotiklerine karşı direnç gösterdiği tespit edilmiştir. Diğer taraftan izolatların yüksek oranda klindamisin, kloramfenikol, streptomisin, gentamisin, tetrasiklin, ampisilin, eritromisin, rifampin, kanamisin ve sefalotin antibiyotiklerine karşı duyarlı olduğu gözlenmiştir. Çalışma kapsamında incelenen izolatların tamamının en az bir antibiyotiğe karşı direnç gösterdiği belirlenirken, %90'ının 2 ile 8 arasında değişen sayıda antibiyotiğe karşı çoklu direnç gösterdiği tespit edilmiştir. İzolatlar arasında gözlenen en yaygın (%93.33) antibiyotik direnç geninin *vanX* olduğu tespit edilmiş olmakla birlikte, çalışma kapsamında incelenen diğer antibiyotik direnç genlerinin varlığına hiçbir izolatta rastlanılmamıştır.

Anahtar Kelimeler: Laktobasil, Vankomisin, Antibiyotik direnç, Antibiyotik direnç geni

ABSTRACT

Lactic acid bacteria (LAB) provide the desired taste, aroma and textural properties to fermented products, as well as inhibit pathogenic bacteria and increase the shelf life of the product through the metabolites they produce. At the same time some LAB are also important of their positive health effects. *Lactobacillus* spp., which has GRAS status, is considered safe for human and animal applications. However, clinical cases of some *Lactobacillus* species have been described, albeit at a low rate. Although infections caused by lactobacilli are observed at low levels, the possibility of transferring their antibiotic resistance genes to pathogenic bacteria poses a great threat.

In this study genotypic identification of vancomycin-resistant lactobacilli at species level were done and antibiotic resistance of isolates were investigated by phenotypic and genotypic methods. For this reason, genomic DNA of 30 *Lactobacillus* isolates, isolated from different animal foods were obtained, and the 16S rDNA region of the samples was amplified by polymerase chain reaction (PCR). According to the DNA sequencing results of PCR products, isolates were identified as 22 *Lactobacillus plantarum*, 3 *L. paracasei* subsp. *tolerance*, 2 *L. sakei* subsp. *sakei*, 1 *L. rhamnosus*, 1 *L. fermentum*, 1 *L. curvatus.*

The antibiotic resistance profiles of the isolates were determined against 18 antibiotics using the disk diffusion method. According to the antibiotic disc diffusion test results, 90% of the isolates were resistant to vancomycin, 86.67% to cefoxitin, and 66.67% to norfloxacin antibiotics. On the other hand, it was observed that the isolates were highly sensitive to clindamycin, chloramphenicol, streptomycin, gentamicin, tetracycline, ampicillin, erythromycin, rifampin, kanamycin and cephalothin antibiotics. While it was determined that all of the isolates examined in this study showed resistance to at least one antibiotic, it was determined that 90% showed multiple resistance to 2 to 8 antibiotics. Although *vanX* was found

to be the most common (93.33%) antibiotic resistance gene observed among isolates, the presence of other antibiotic resistance genes examined in the study was not found in any isolate.

Keywords: *Lactobacillus*, Vancomycin, Antibiotic resistance, Antibiotic resistance gene

KEDİ VE KÖPEKLERDE ANORMAL DAVRANIŞLAR

ABNORMAL BEHAVIORS IN CAT AND DOGS

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ÖZET

Son yıllarda pet hayvanlarının sayısı her geçen gün artmaktadır. Bu durum evcil hayvanlar ve sahipleri arasındaki ilişkinin ve artık ailenin bir üyesi olarak kabul edilen kedi ve köpeklerin davranışlarının değerlendirilmesi, incelenmesi ve bazı durumlarda sağaltılması gerekliliğini ortaya koymuştur. Hayvan sahibi ve pet hayvanlar arasındaki ilişkilerde, hayvan davranışları büyük rol oynamaktadır. Özellikle hayvan sahiplenme durumlarında, sahiplenilecek kedi ve köpeğin davranışlarının kişi için öncelikli önem arz ettiği bilinmektedir. Arzu edilmeyen davranışlara sahip kedi ve köpeklerin sahiplendirilmesinde zorluklar yaşandığı ise üzücü bir gerçektir. Şiddetli anormal davranışlara sahip pet hayvanlarında, son çare olarak ötenazi seçeneği değerlendirilmektedir. Hayvan davranışları kısa bir süre öncesine kadar gözden kaçırılan ve ihmal edilen bir konu olmasına rağmen; bir takım sağlık problemlerini yansıtabileceğinin fark edilmesiyle birlikte davranış problemlerinin anlaşılması ve tedavisi hakkında son yıllarda çok fazla gelişme kaydedilmiştir.

Hayvanlarda anormal davranışları tanımlamak ve anlamak, iyi bir gözlem ve doğru bir yaklaşımla mümkündür. Kedi ve köpeklerde davranış bozuklukları incelenirken, dikkat edilmesi gereken en önemli nokta; yaşa, türe ve ırka göre değerlendirme yaparak, davranışları bu faktörlere göre normal veya anormal olarak sınıflandırmaktır. İnsanların kedi ve köpeklerle etkileşiminin giderek artması sonucu, evcil hayvanların psikolojileri daha tanımlanabilir ve anlaşılabilir bir hal almaya başlamıştır. İlk olarak problemin etiyolojisini anlamak, uyarıcıları tespit etmek ve çevresel faktörleri belirlemek gereklidir. Tedavide ise ilk adım, uyarıcılara yönelik olmalıdır. Bu amaçla genelde karşıt koşullandırma ve sistematik duyarsızlaştırma yöntemleri kullanılır. Olumsuz çevresel faktörleri iyileştirilmeye çalışılır. Hasta sahipleri, teşhis ve tedavi süreçlerinde etkin rol oynarlar.

Bu çalışmada kedi ve köpeklerde sıklıkla görülen davranış bozukluklarını sınıflandırarak, bu davranışlar hakkında bilgi vermek amaçlanmıştır.

Anahtar Kelimeler: Kedi, köpek, davranış.

ABSTRACT

In recent years, the number of pet animals has been increasing day by day. This situation has revealed the necessity of evaluating, examining and, in some cases, treating the relationship between pets and their owners, and the behavior of cats and dogs, which are now accepted as members of the family. Animal behavior plays a major role in the relationship between owner and pet animals. It is known that the behavior of the cat and dog to be adopted is of primary importance for the person, especially in animal adoption situations. It is a sad fact that there are difficulties in adopting cats and dogs with undesirable behaviors. In pets with severe abnormal behavior, euthanasia is considered as a last resort. Although animal behavior is a subject that has been overlooked and neglected until a short time ago; Much progress has been made in the understanding and treatment of behavior problems in recent years, with the realization that they can reflect a number of health problems.

Identifying and understanding abnormal behavior in animals is possible with good observation and a correct approach. When examining behavioral disorders in cats and dogs, the most important point to consider is; It is to classify behaviors as normal or abnormal according to these factors by evaluating according to age, species and race. As a result of the increasing interaction of people with cats and dogs, the psychology of pets has started to become more definable and understandable. First, it is necessary to understand the etiology of the problem, to identify the stimuli and to determine the environmental factors. The first step in treatment should be directed towards stimulants. For this purpose, counterconditioning and systematic desensitization methods are generally used. Negative environmental factors are tried to be improved. Patient owners play an active role in diagnosis and treatment processes.

In this study, it is aimed to give information about these behaviors by classifying the behavioral disorders frequently seen in cats and dogs.

Keywords: Cat, dog, behaviour.

IĞDIR İLİNDE TARLA BİTKİLERİ İÇERİSİNDE TAHILLARIN DURUMU VE SORUNLARI

STATUS AND PROBLEMS OF GRAINS IN FIELD CROPS IN IĞDIR

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ÖZET

İlimiz coğrafi konumu itibari ile bir çok ürünün yetiştirildiği bir mikro klima özelliğine sahiptir. Iğdır il'inde başta buğday, arpa ve mısır olmak üzere toplam 534 427 da alanda tahıl ekilişi yapılmaktadır. Tahıllar içerisinde buğdaydan 185 320 da alandan 39 247 ton üretim elde edilmektedir. Ülkemizde elde edilen dekara buğday verimine göre İlimiz ortalaması 247 kg/da ile daha yüksek verim alınabilmektedir. Arpa'da ise 72 836 da alanda 164 kg/da verim ve toplam 11 948 ton üretim gerçekleşmektedir. Dane mısır ise 28 534 da alanda 855 kg/da verim ve 24 383 ton üretim ile önemli bir yere sahiptir. İlimizde tarla tarımı içerisinde tahıl üretiminin düşük olmasının başlıca temel sebepleri bulunmaktadır. Bölgede ve ilimizde verim düşüklüğünün en önemli nedeni yüksek verimli ve kaliteli tescilli çeşitlerin yerine genel olarak yöresel çeşitlerin kullanılmasıdır. Bu temel soruna ilave olarak sulama gibi alt yapı eksikliği, çok parçalı ve küçük ölçekli işletme yapısı, traktör ve ekipman yetersizliği, nadas alanlarının çokluğu, yetiştiricilikte teknik bilgi ve materyal eksikliği gibi sorunlar tespit edilmiştir. Bu sorunların çözümüne yönelik atılacak adımların başta buğday, arpa ve mısır olmak üzere tahıllarda sektörü memnun edecek bir sonuç ortaya çıkaracaktır. Sonuç olarak Ülkemiz ve bölgemize önemli bir katma değer oluşturacağı düşünülmektedir.

Anahtar Kelimeler: Tarla Bitkileri, Tahıllar, Sorunlar ve Çözüm yolları

ABSTRACT

Due to its geographical location, our province has a microclimate feature where many products are grown. In Iğdır province, cereals are cultivated in a total of 534 427 da, mainly wheat, barley and corn. Among the cereals, a production of 39 247 tons is obtained from wheat in an area of 185 320 da. According to the wheat yield per decare in our country, higher yield can be obtained with an average of 247 kg^{-1}da in our province. In barley, a yield of 164 kg^{-1}da and a total

production of 11 948 tons are realized in an area of 72 836 decares. Grain corn has an important place in an area of 28 534 decares with a yield of 855 kg^{-1}da and a production of 24 383 tons. There are the main reasons for the low grain production in field agriculture in our province. The most important reason for the low yield in the region and in our province is the use of local varieties in general instead of high yielding and quality registered varieties. In addition to this basic problem, problems such as lack of infrastructure such as irrigation, multi-part and small-scale enterprise structure, lack of tractor and equipment, abundance of fallow fields, lack of technical knowledge and materials in aquaculture were identified. The steps to be taken towards the solution of these problems will produce a result that will please the sector in grains, especially wheat, barley and corn. As a result, it is thought that it will create an important added value for our country and region.

Keywords: Field Crops, Cereals, Problems and Solutions

STEPS TO REDUCE THE WATER FOOTPRINT IN AGRICULTURE

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ABSTRACT

The water is the most critical resource to sustain life activities. The falling short water resources because of increasing population are the major factor that threatens plant production around the world. In arid and semi-arid regions, the agricultural sector accounting for 70-80% is the primary user of water resources across the world. The Conservation and sustainability of the water resources is the guarantee of future water security. It is thought that the water foot print as concept emerged to use none homogeneously distributed water resources all over the world more efficiently will play an effective role in reducing water scarcity and using water more efficiently. The water footprint is the sum of the clean water consumed by individuals or society and the amount of clean water used to produce the goods and services they use.

Turkey is not a water-rich country as thought. The agriculture constitutes the major share in water foot print with 89%, followed by domestic water use and industrial production with the share of 7% and 4% respectively. The plant production constitutes 92% of water foot print. The cereals have the largest share with 38% followed by forages, fruits, oil plant, vegetables and legumes with share of 31%, 13%, 5% and 2% in water foot print.

The green water constitutes more than 66% of water used for plant production which is a crucial part of agriculture. The water foot print of grazing form from green water largely. The higher green water rate states the importance of precipitation and underlines sensibility against climatic conditions. The blue water constitutes 20% of water used in plant production. So it makes important sustainability of water resources by drawing attention to irrigation applications. The water footprints of domestic and industrial water use consist of grey water almost all.

The risk on water resources should be revealed and the regulation should be introduced to reduce water foot print in agriculture in Turkey. The problems related with water resources, allocation between sectors and appropriate water management should evaluated in global scale. Especially the farmers with agricultural water users should be made aware and technical support should be provided.

Keywords: Agricultural water consumption, Efficient irrigation, Drought

WOMEN WHO HAD PRETERM LABOR DURING PREGNANCY BUT DELIVERED THEIR BABIES AT TERM; POSTPARTUM 6TH WEEK EXPERIENCES

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ABSTRACT

In our study, 51 women who had late preterm pregnancies between 34 weeks and 1 day and 36 weeks and 6 days, but gave birth at term were included. These 51 participants were evaluated when they came to the outpatient clinic at 6 weeks postpartum. At the same time, interviews were conducted with 42 women who were at 6 weeks postpartum and had not experienced preterm labor during their pregnancy. Emotional reactions of women at risk of preterm labor; We aimed to compare the babies with those of mothers who were born at term and never experienced preterm labor. Our study was carried out with puerperal women who came to the Obstetrics and Gynecology outpatient clinic of Trakya University Faculty of Medicine at the 6th week postpartum for control. Mother's measures of emotional distress (standard anxiety, postpartum depression, and infant health concern) were evaluated. Interviews were conducted with the mothers who came to the obstetrics outpatient clinic of the hospital for routine control 6 weeks after the birth. Mothers of late preterm infants experienced significantly greater emotional distress immediately after birth, and distress levels continued to be higher at one month postpartum in each of the standard measures. Mothers of late preterm infants also viewed changing trajectories in their birth and postpartum experiences and feeling unprepared for these unexpected events as an ongoing source of emotional distress. Mothers of late preterm infants were observed to experience more emotional distress during the six weeks after birth than mothers of term infants. Our findings suggest that it is not a single event that causes different levels of distress in mothers of late preterm and term infants, but rather an interaction of multiple changes in labor and delivery, and worse-than-expected infant health. Our work; It draws attention to the need to examine how and when mothers' emotional responses change over time and how their responses are related to parenting and infant health and development.

Keywords: Preterm Labor, Women's Health, pregnancy

EDDY-CURRENT CHARACTERIZATION OF AERONAUTICAL METAL SHEETS: A COMPARISON OF OPTIMIZATION METHODS

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ABSTRACT

The study of eddy current nondestructive testing systems for characterization using the finite element method requires a high amount of computing time and memory space. Therefore, the optimization of the inversion technique associated with finite element method permits to reduce the time of characterization.

The main goal of this paper is the optimization of aeronautical metal sheets largely used in the aeronautical industry such as Al, Ti, and 304L stainless steel by optimization inversion methods. This procedure consists of associating the finite element method implemented in Matlab software with three optimization algorithms (harmony search algorithm (HSA), simulated annealing (SA), and Particle swarm optimization (PSO)) to determine simultaneously electric conductivity, magnetic permeability, and thickness. Indeed, the simulation results have shown the performance of each inversion algorithm, a qualitative and quantitative comparison between three optimization algorithms shown the capability of the proposed optimization algorithms to predict and evaluate the physical and geometrical parameters of metals with very fast optimization time to aeronautical applications testing.

Keywords: Eddy Current Sensor, Inverse Problem, Harmony Search, PSO, SA, Characterization.

TITANYUM DIOKSIDIN BUĞDAYIN EMBRIYO KÜLTÜRÜ ÜZERINDEKI SÜRGÜN VE KÖK GELIŞIMINE ETKISININ İNCELENMESI

INVESTIGATION OF THE EFFECT OF TITANIUM DIOXIDE ON SHOOT AND ROOT DEVELOPMENT OF WHEAT EMBRYO CULTURE

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ÖZET

Buğday, temel besin maddelerinin hammaddesini oluşturmaktadır. Dünyada ve ülkemizde en ekimi en fazla olan bitkilerden biridir. Bu sebeple, buğdayın kalite ve veriminin arttırılmasını amaçlayan birçok çalışma yapılmaktadır. Nanoteknolojinin gelişmesiyle beraber bu teknolojinin tarım alanında kullanımı giderek artmaktadır. Son yıllarda buğdayın verimini ve kalitesini arttırmak için yapılan nanopartikül uygulamaları, ıslah çalışmaların bir alternatifi olarak görünmektedir. Bu uygulamalar, ürün kalitesini ve verimini yükseltmenin yanında, bitki üzerindeki stresin etkilerini azaltmayı ve artan besin ihtiyacını en verimli şekilde karşılamayı amaçlamaktadır. Günümüzde birçok çalışmada nanopartiküllerin kullanımının buğdayın çimlenmesi ve büyümesi üzerinde olumlu sonuçlar verdiği bildirilmiştir. Endüstride yaygın olarak kullanılan ve kararlı bir yapıya sahip nanopartiküllerden biri olan Titanyum dioksitin (TiO_2), kolayca sentezlenebilmesi, biyouyumluluk gibi avantajları birçok alanda kullanıma olanak sunmaktadır. Bitki doku kültürü ıslah çalışmalarına hız kazandıran bir teknolojidir ve bu teknolojinin nanoteknoloji ile birlikte kullanılması, tohum çimlenmesi, bitki genetik

modifikasyonu, bitki büyümesinin iyileştirilmesi gibi araştırmalara fayda sağlamaktadır. Bu amaçla bu çalışmada TiO_2 nanopartiküllerinin buğdayın (*Triticum aestivum L.*) embriyo kültüründe kök ve sürgün uzunluğu üzerindeki etkileri araştırılmıştır. Çalışmada TiO_2'nin üç farklı konsantrasyonu (10, 30 ve 60 mg/L) kullanılarak kültüre alınan Adana 99 ekmeklik buğday çeşidinin kök ve sürgün gelişimi incelenmiştir. Elde edilen sonuçlara göre bu çalışmada uygulanan konsantrasyonlarda kullanılan TiO_2 nanopartiküllerinin buğdayın kök ve sürgün gelişimi üzerinde olumlu bir etki gösterdiği belirlenmiştir. Aynı zamanda en yüksek kök ve sürgün uzunluğu oranı 60 mg/L'de elde edilmiştir. Bu kapsamda TiO_2 nanopariküllerinin incelenen doz miktraları bakımından Adana 99 ekmeklik buğday çeşidinin büyümesi ve gelişmesi üzerinde olumlu etkileri olduğu belirlenmiştir. Bu sonuçların TiO_2'nin ıslah alanında kullanımına dair yapılacak olan kapsamlı çalışmalara ön veri sunarak katkı sağlaması hedeflenmektedir.

Anahtar Kelimeler: Buğday, embriyo kültürü, titanyum dioksit (TiO_2), *Triticum aestivum L.*

ABSTRACT

Wheat is the raw material of basic nutrients. It is one of the most cultivated plants in the world and in our country. Therefore, many studies are carried out to increase the quality and yield of wheat. With the progress of nanotechnology, the use of this technology in agriculture is increasing. In recent years, ,nanoparticle applications aimed at increasing wheat yield and quality appear to be an alternative to breeding studies. These applications aim to reduce the effects of stress on the plant and to meet the increasing nutritional need in the most efficient way, as well as increasing the product quality and yield. Nowadays, many studies have reported that the use of nanoparticles gives positive results on the germination and growth of wheat. Titanium dioxide (TiO_2), which is one of the nanoparticles that is widely used in industry and has a stable structure, offers advantages such as easy synthesis and biocompatibility. Plant tissue culture is a technology that accelerates breeding studies and the use of this technology together with nanotechnology provides benefits for research such as seed germination, plant genetic modification, and improvement of plant growth. Plant tissue culture is a technology that accelerates breeding studies. Therefore, studies in this field have increased recently. For this purpose, the effects of TiO_2 nanoparticles on root and shoot length of wheat (*Triticum aestivum L.)* in embryo culture were investigated in this study. In this study, root and shoot development of Adana 99 bread wheat cultivars were investigated by using three different concentrations of TiO_2 (10, 30 and 60 mg/L). According to the obtained results, it was determined that the TiO_2 nanoparticles at applied concentrations in this study had a positive effect on the root and shoot development of wheat. At the same time, the highest root and shoot length ratio was obtained at 60 mg/L. In this context, it was determined that TiO_2 nanoparticles had positive effects on the growth and development of Adana 99 bread wheat varietyies in terms of dose amounts. It is aimed that these results will contribute to the comprehensive studies on the use of TiO_2 in the breeding field improvement by providing preliminary data.

Keywords: Wheat, embryo culture, titanium dioxide (TiO_2), *Triticum aestivum L.*

EĞRİSEL GEOMETRİLİ YÜZEYLERİN YAPIŞTIRILMASI VE MEKANİK ÖZELLİKLERİNİN ARAŞTIRILMASI

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ÖZET

Geçmişte olduğu gibi, günümüzde de malzemeleri birbirine eklemek, birleştirmek ve bu malzemeleri bir bütün olarak ömürleri boyunca bir arada tutmak amacıyla birçok malzeme ve teknik kullanılmaktadır. Yapıştırma yöntemi ile birleştirme işlemi son yıllarda yaygın olarak kullanılan ve üzerinde çalışılan bir yöntemdir. Bu yöntem, cıvata, perçin, kaynak ve lehim gibi mekanik birleştirme metotlarından birisi olmakla beraber, bu yöntemler ile karşılaştırıldığında, yapıştırma yöntemi ile birleştirme işlemi parçaların ergime ısılarının altında olması, kaynak, lehim ve başka bağlantı şekillerinde ergime neticesinde kristal yapıda farklılığa sebep olmamasından ve gerilme yığılmaları oluşturmamasından dolayı yaygın olarak kullanılmaktadır. Bu çalışmada, 45 derece, evolvent, sikloid ve episikloid olmak üzere farklı eğriler matematiksel bağıntılar yardımı ile SOLİDWORKS programında modellenmiş ve daha sonra bu eğriler kullanılarak eğri yüzey geometrisine sahip parçalar yine SOLIDWORKS paket programı kullanılarak modellenmiştir. Oluşturulmuş olan eğri yüzeye sahip modeller kullanılarak ANSYS paket programında eğri yüzey geometrisine sahip modeller için mesh işlemi yapılmıştır. Daha sonra modelin bir bölümü sabit tutularak diğer kısmına kuvvet uygulanarak deney numunelerinin çekme sonlu eleman analizleri yapılmıştır. Analizler yapılırken deney numuneleri St52 yapı çeliği olarak alınmış ve malzeme özellikleri tanımlanmıştır. Analiz yapılırken 45 derece eğri yüzeye sahip parçanın hasar yükü bulunmuş ve daha sonra bu hasar yükü referans alınarak diğer eğri yüzeye sahip parçalara da sırasıyla uygulanmıştır. Analizler esnasında sonlu eleman nokta sayısı 60697 ve eleman sayısı 13200 olarak kullanılmış ve yapıştırıcı kalınlığı ise 0,2 mm olarak alınmıştır. Yapılan analizler sonucunda maksimum çekme dayanımına sahip olan eğri yüzeyin, 45 derece eğri yüzey olduğu belirlenmiştir.

Anahtar Kelimeler : Eğri yüzey, yapıştırıcı, sonlu elemanlar, hasar yükü

ABSTRACT

As in the past, many materials and techniques are used today to add and combine materials and to keep these materials together throughout their lifetime. Joining with the bonding method is a method that has been widely used and studied in recent years. Although this method is one of the mechanical joining methods such as bolts, rivets, welding and solder, when compared with these methods, the bonding process with the bonding method is below the melting temperatures of the parts, does not cause a difference in the crystal structure as a result of melting in welding, solder and other connection forms and the stress It is widely used because it does not form agglomerations. In this study, different curves such as 45 degrees, involute, cycloid and epicycloid were modeled in SOLIDWORKS program with the help of mathematical relations, and then parts with curved surface geometry were modeled using the SOLIDWORKS package program using these curves. By using the created models with curved surfaces, meshing was performed for models with curved surface geometry in the ANSYS package program. Then, tensile finite element analyzes of the test samples were made by keeping one part of the model fixed and applying force to the other part. While making the analysis, the test samples were taken as St52 structural steel and the material properties were defined. During the analysis, the damage load of the piece with 45 degree curved surface was found and then this damage load was applied to the other pieces with curved surfaces respectively. During the analysis, the finite element number of points was used as 60697 and the number of elements as 13200, and the adhesive thickness was taken as 0.2 mm. As a result of the analysis, it was determined that the curved surface with the maximum tensile strength was a 45 degree curved surface.

Keywords: Curved surface, adhesive, finite lements, damage load

SACCHAROMYCES CEREVISIAE'DA GEMİFLOKSASİN İNDÜKLÜ TOKSİSİTE

THE TOXICITY INDUCED BY GEMIFLOXACIN IN *SACCHAROMYCES CEREVISIAE*

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ÖZET

Hücre içerisine girebilme ve çoğalabilme yeteneğine sahip patojenik bakteriler ile mücadelede çeşitli etki mekanizmalarına sahip antibiyotiklerden verimli sonuçlar alınmaktadır. Bu amaçla; bir nitrofuran türevi olan ve etki mekanizması tam olarak anlaşılamamış 'Nifuroksazid', bakteri hücre duvarı sentezini inhibe ederek etki gösteren 'Sefiksim', folik asit metabolizmasını bozan 'Sülfametoksazol/Trimetoprim' kombinasyonları ve bakteriyel çoğalma süreci için gerekli olan DNA giraz ile topoizomeraz IV enzimlerini inhibe ederek DNA sentezini engelleyen 'Gemifloksasin' etken maddelerine sahip antibiyotikler yaygın olarak kullanılmaktadır. Bu çalışmada, belirtilen 4 antibiyotik etken maddesinin ökaryotik model *Saccharomyces cerevisiae* mayası üzerindeki anti-proliferatif ve olası apoptotik etkileri incelenmiştir. Elde edilen sonuçlara göre, çalışılan etken maddeler arasından sadece gemifloksasinin maya proliferasyonunu istatistiksel olarak anlamlı şekilde inhibe ettiği belirlenmiştir. 35, 175 ve 437,5 ppm gemifloksasin ile 24 saatlik inkubasyon sonucunda maya hücre canlılığının kontrol grubuna kıyasla sırasıyla yaklaşık %95, 53 ve 30 değerlerine düştüğü tespit edilmiştir. Araştırmada ayrıca gemifloksasin etken maddesi tarafından indüklenen hücre ölümünün türü, Annexin V-PI flow sitometrik testi ile karakterize edilmiştir. Bulgular, ajanın çalışılan en yüksek derişimi için canlı maya hücre popülasyon yüzdesinin yaklaşık 30'lara azaldığını diğer yandan toplam apoptotik hücre popülasyonunun yaklaşık %23'lere ve nekrotik popülasyonun ise %47'lere ulaştığını göstermektedir. Sonuç olarak, bakteriler üzerinde bakterisid etki gösterdiği bilinen bu etken maddenin *S. cerevisiae* mayası üzerinde de toksik etki gösterdiği ve hücreyi ağırlıklı olarak nekrotik yoldan ölüme götürdüğü ortaya konulmuştur.

Anahtar Kelimeler: *S. cerevisiae*, Gemifloksasin, Toksisite, Hücre Ölüm Türü.

ABSTRACT

Effective results are obtained from antibiotics with various mechanisms of action in the fight against pathogenic bacteria that have the ability to enter and proliferate inside the cell. For this

purpose; antibiotics whose active ingredients are 'Nifuroxazid', a nitrofuran derivative whose mechanism of action is not fully understood, 'Cefixime' acting by the inhibition of bacterial cell wall synthesis, the combination of 'Sulphamethoxazole/Trimethoprim' that impair folic acid metabolism, and 'Gemifloxacin' that inhibits DNA gyrase and topoisomerase IV enzymes which are necessary for bacterial cell proliferation are widely used. In this study, the anti-proliferative and possible apoptotic effects of the mentioned four antibiotic agents on the eukaryotic model *Saccharomyces cerevisiae* yeast were investigated. According to the obtained results, it was determined that only gemifloxacin statistically significantly inhibited yeast cell proliferation among the investigated active ingredients. As a result of treatment with 35, 175 and 437.5 ppm gemifloxacin for 24 hours, yeast cell viability decreased to approximately 95%, 53 and 30 compared to the control group, respectively. In the study, the type of cell death induced by the active substance gemifloxacin was also characterized by the Annexin V-PI flow cytometric test. The findings show that for the highest concentration of the studied agent, the percentage of live yeast cell population decreased to approximately 30%, on the other hand, the total apoptotic and necrotic cell populations reached approximately 23% and 47, respectively. As a result, it has been revealed that this active substance, which is known to have a bactericidal effect on bacteria, also has a toxic effect on *S. cerevisiae* yeast and causes the cell to die predominantly by necrotic way.

Keywords: *S. cerevisiae*, Gemifloxacin, Toxicity, Cell Death Type.

GEMİLERDE KULLANILAN ELEKTRİK ENERJİSİ DEPOLAMA TEKNOLOJİLERİNİN ANALİZİ

ANALYSIS OF ELECTRIC ENERGY STORAGE TECHNOLOGIES USED ON SHIPS

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ÖZET

Deniz taşımacılığı hâlâ büyük oranda fosil yakıtlara bağlıdır. Gemi yakıtları özellikle daha az rafine edilmiş mazot, ağır akaryakıt ve sıvılaştırılmış doğal gaz yakıtlarının ucuz karışımından oluşmaktadır. Gemi kaynaklı sera gazı emisyonlarının payı her ne kadar kara yolu ve hava yolu taşımacılığından daha düşük olsa da Uluslararası Denizcilik Örgütü (IMO), konu ile ilgili olarak bir an evvel harekete geçilmesi gerektiğini belirtmektedir. Örgüt, harekete geçilmemesi durumunda gemi taşımacılığından kaynaklı sera gazı emisyonlarının 2050'ye kadar %250 artacağını ve bunun da küresel emisyonların %17'sini temsil edeceğini öngörmektedir. Bu bağlamda deniz taşımacılığında elektriğin kullanıldığı sistemler, petrol ve dizel yakıtlara alternatif olabilecek seçeneklerin başında gelmektedir.

Bu çalışmada gemilerde kullanılan elektrikli batarya-pil teknolojileri incelenerek 2050 yılına kadar olan süreçte daha fazla uygulama alanına sahip olabilecek teknolojiler üzerine odaklanılmıştır. Bu bakımdan yapılan incelemeler, gemilerde elektrik enerjisi kullanımının iki ana kategoriye ayrıldığını göstermiştir. Bunlar, tamamen elektrikli gemiler ile diğer yakıt sistemlerinin entegre edilen hibrit gemi sistemleridir. Her iki sistemde kullanılan elektrikli batarya-pil teknolojileri içerisinde en önde gelen enerji taşıyıcısının "lityum" olduğu varsayılmıştır. Elektrik enerjisi depolama teknolojileri içerisinde en çok kullanılan malzemenin Nikel Mangan Kobalt Oksit (NMCO) olduğu tespit edilirken onu ikinci sırada Lityum Kobalt Oksit (LCO) batarya teknolojisinin takip ettiği görülmüştür. Gemilerde elektrik enerjisini cazip hale getiren sebepler ise; bu sistemlerde kullanılan elemanların hafif olması, hacim bakımından daha az yer kaplamaları ve meydana gelen gürültü seviyesinin daha düşük olmasıdır.

Anahtar Kelimeler: Deniz Taşımacılığı, Elektrikli Gemiler, Gemi Enerji Sistemleri, Batarya

ABSTRACT

Shipping is still heavily dependent on fossil fuels. Ship fuels consist of cheap blends of less refined diesel, heavy fuel oil and liquefied natural gas fuels. Although the share of greenhouse gas emissions originating from ships is lower than road and air transport, the International Maritime Organization (IMO) states that action should be taken as soon as possible. The Organization predicts that, without action, greenhouse gas emissions from shipping will

increase by 250% by 2050, representing 17% of global emissions. In this context, systems in which electricity is used in maritime transportation are among the options that can be alternatives to petroleum and diesel fuels.

In this study, the electric battery-battery technologies used in ships were examined and focused on technologies that could have more application areas in the process until 2050. In this regard, studies have shown that the use of electrical energy on ships is divided into two main categories. These are hybrid ship systems in which fully electric ships and other fuel systems are integrated. It is assumed that "lithium" is the leading energy carrier among the electric battery-battery technologies used in both systems. Nickel Manganese Cobalt Oxide (NMCO) was found to be the most used material among electrical energy storage technologies, followed by Lithium Cobalt Oxide (LCO) battery technology. The reasons that make electrical energy attractive on ships are; The elements used in these systems are light, they take up less space in terms of volume and the noise level is lower.

Keywords: Marine Transportation, Electric Ships, Ship Energy Systems, Battery

COMPREHENSIVE RESEARCH AND COMPARISON ON REQUIREMENTS, MAIN PARTS, AND AVAILABLE PRODUCTS OF ONBOARD BATTERY CHARGER FOR ELECTRIC VEHICLES

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ABSTRACT

Onboard battery chargers (OBCs) employed in electric vehicles (EVs) fed from three-phase mains charge battery stacks of Plug-in hybrid electric vehicles (PHEVs) and EVs. The performance of high energy density batteries used as the main or auxiliary energy source in vehicles depends not only on the design of the battery cells but also on how the cells are used and charged. Therefore, battery chargers play a critical role in the use and development of EVs and PHEVs. Many academic and practical studies have been conducted on OBCs in parallel with the spread of EVs. In this study, comprehensive researches about OBCs have been performed. The study reveals the design standards and the key features of OBCs at first. Protection, filtering, power factor correction (AC-DC), and DC-DC converter stages included in OBCs have been examined and the most commonly used topologies have been summarized. Finally, the existing products in the market have been examined and a detailed comparison has been performed in terms of efficiency, power, power factor, power density, modularity, size, and communication.

Keywords: Onboard Battery Charger, Electric Vehicle, Hybrid Electric Vehicle, Charger Structure, Standards

PERFORMANCE COMPARISON OF DIFFERENT HEAT SINKS FOR VOLTAGE REGULATORS

VOLTAJ REGÜLATÖRLERİ İÇİN FARKLI ISI EMİCİLERİNİN PERFORMANS KARŞILAŞTIRMASI

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ABSTRACT

A voltage regulator works by taking an input voltage and converting it to the specified rated output voltage. The voltage regulator needs a heat sink when there is too much power that can overheat it. A heat sink dissipates excess power as heat and thus, preventing excessive voltage from destroying the voltage regulator and overheating it. This study presents a comparative study on the heat dissipation of two different main models and vertically mounted heat sinks derived from main models. In this study, eight different new designs were compared with two different commercial aluminum products. These are; Model-A1 (Heat sink with rounded corners + extra back-fins), Model-A2 (Heat sink with rounded corners + extra back-fins + serrations), Model-A3 (Heat sink with rounded corners + serrations), Model-A4 (Front-side cross-cut fin heat sink with rounded corners + serrations), Model-A5 (Cross-cut fin heat sink with rounded corners + serrations), Model-B1 (Heat sink with curved fins), Model-B2 (Heat sink with serrated splayed fins) and Model-B3 (Cross-cut fin heat sink with serrated splayed fins). Each model was tested at 5W heat power. Among the Model-A designs, the lowest base temperature was obtained in Model-A3. Among the Model-B designs, the lowest base temperature was obtained in Model-B1. In general, it was observed that the base temperatures decreased with the increase in mass and surface area. Despite increasing mass, rear fins have

been found to have a negative effect on performance. It has been determined that the serration geometry increases the mass, but also provides a performance improvement. It has been found that curved fins created without changing mass perform better by increasing the surface area compared to standard fins. Minor modifications to the models did not result in major changes, therefore, major geometric changes must be made for better performance.

Keywords: Heat sink, plate-fin, pin-fin, numerical analysis, heat dissipation

ACKNOWLEDGMENTS

This study is financially supported within the scope of the "2209-B - Industry Oriented Research Project Support Programme for Undergraduate Students (1st Term 2020)", carried out by The Scientific and Technological Research Council of Turkey (TÜBİTAK) Scientists Support Department (BİDEB).

ÖZET

Bir voltaj regülatörü, bir giriş voltajı alarak ve bunu belirtilen nominal çıkış voltajına dönüştürerek çalışır. Voltaj regülatörü, aşırı ısınmasına neden olabilecek çok fazla güç olduğunda bir ısı emiciye ihtiyaç duyar. Bir ısı emici, fazla gücü ısı olarak dağıtır ve böylece aşırı voltajın voltaj regülatörünü tahrip etmesini ve aşırı ısınmasını önler. Bu çalışma iki farklı ana model ve ana modellerden türetilmiş farklı dizayn dikey monte ısı emicilerinin ısı yayma etkinliği üzerine karşılaştırmalı bir çalışma sunar. Bu çalışmada, sekiz farklı yeni tasarım, iki farklı ticari alüminyum ürün ile karşılaştırılmıştır. Bunlar; Model-A1 (Köşeleri yuvarlatılmış + ekstra arka kanatçıklı ısı emici), Model-A2 (Köşeleri yuvarlatılmış + ekstra arka kanatlar + tırtıklı ısı emici), Model-A3 (Köşeleri yuvarlatılmış + tırtıklı ısı emici), Model-A4 (Köşeleri yuvarlatılmış + tırtıklı ön taraf çapraz kesim kanatlı ısı emici), Model-A5 (Köşeleri yuvarlatılmış + tırtıklı çapraz kesim kanatlı ısı emici), Model-B1 (Kavisli kanatlı ısı emici), Model-B2 (Tırtıklı yayılmış kanatçıklı ısı emici) ve Model-B3 (Tırtıklı yayılmış kanatlı çapraz kesimli kanatlı ısı emici). Her bir model 5W ısı gücünde test edilmiştir. Model-A dizaynları arasından en düşük taban sıcaklığı Model-A3'te elde edilmiştir. Model-B dizaynları arasından en düşük taban sıcaklığı Model-B1'de elde edilmiştir. Genel olarak kütle ve yüzey alanı artışıyla birlikte taban sıcaklıklarının düştüğü görülmüştür. Kütleyi artırmasına rağmen arka kanatların performans üzerinde olumsuz bir etki yarattığı görülmüştür. Tırtık geometrisinin kütleyi artığı buna karşın performansta da bir iyileşme sağladığı tespit edilmiştir. Kütleyi değiştirmeden oluşturulan kavisli kanatların standard kanatlara kıyasla yüzey alanını artırarak daha iyi performans gösterdiği bulunmuştur. Modeller üzerinde yapılan küçük değişiklikler büyük değişimlere neden olmamıştır, bu nedenle, daha iyi performans için büyük geometrik değişiklikler yapılmalıdır.

Anahtar Kelimeler: Isı emici, plaka-kanat, pim-kanat, sayısal analiz, ısı dağıtımı

DEVELOPMENT OF A GROUP DECISION-MAKING SUPPORT SYSTEM FOR THE CREDIT RISKS ASSESSMENT

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ABSTRACT

Credit risk assessment involves determining whether it is possible to lend to a borrower, hence a proper risk assessment is the basis for making an optimal decision. Credit risk assessment is a problem of group expert decision because the borrower's application is reviewed by a group of credit experts and a final decision is made.

The credit risk assessment holds great relevance today, so the paper deals with the development of a group decision support system for the credit risk assessment, which includes the development of the credit risk assessment model and algorithm, the system database and the user's interface. The credit risk assessment is a multi-criteria task because the assessment is done on the basis of several criteria, thus, the credit risk assessment algorithm has been developed using the multi-criteria decision analysis methods.

Keywords: Credit Risk, Assessment, Expert, Group Decision

POLYPENOLS CONTENT IN ROOTS OF *TARAXACUM OFFICINALE*

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ABSTRACT

Background. Anti-oxidants protect cells against a chemical process called oxidation. The last can affect different molecules, including DNA, proteins and lipids, which are responsible for vital processes in the body. Many articles have been published about anti-oxidants and their significance in the prevention of oxidative stress and related cell damage. A lot of plants offer a variety of bioactive compounds, especially polyphenols that stimulates researchers' interest for their beneficial properties in various health concerns, and in oxidative stress too. The *Taraxacum officinale (TO*) has many benefits for human body. Due to a high content of biologically active substances it exercises anti-hypertensive, anti-tumor, anti-atherogenic, anti-diabetic, anti-inflammatory, anti-oxidant and hepatoprotective effects.

Aim of the study: Determination of the total content of polyphenols in *Taraxacum offici*nale roots (TOR).

Materials and methods: The fresh roots of *Taraxacum officinale F. H. Wigg* were harvested in May, from a natural habitat of Moldova, dried in laboratory conditions at room temperature and grinded (by Scarlett Coffee grinder SC-4145) to a fine powder. The determination of the total polyphenols content was performed (Folin-Ciocalteu method) in the dry matter (DM) and in the hydro–ethanolic extracts of 80%, 50% and 20% by the UV/VIS spectrophotometer "*Perkin Elmer" Lambda 25* at 765 nm.

Results: The highest content of polyphenols was determined in the DM (15.60 mg/g) expressed in µg gallic acid equivalent (GAE) per/g, according to calibration curve (build in range of 0.02-0.10 mg gallic acid). In the ethanolic extracts of 80%, 50% and 20%, the polyphenols content was evaluated as 2.76, 8.35 and 5.82 µg/ml, respectively.

Conclusions: *TOR* represents an important source of polyphenols, whose content depends of alcohol concentration and method of evaluation. The highest amount was established in DM and ethanolic extracts of 50%.

Key words: *Taraxacum offici*nale roots, polyphenols, anti-oxidants, spectrophotometric method.

ANALYSIS OF DATA BY SECURITY CHECK LIST ON COMPUTERIZED ACCOUNTING INFORMATION SYSTEMS CAIS: AN STUDY CASE ON KOSOVO ORGANIZATIONS

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ABSTRACT

The current COVID 19 pandemic has changed the way we live and think. Things are not going so well without the physical presence of people, therefore and often times seem more difficult and stressful. But with the support of the internet our activities are faster and less costly starting from buying items online, ordering various services etc. Realistically, the Internet represents a global network of computers that functions much like the postal system. The Internet enables computers to send small packets of digital data to each other. In general we can say: The internet is the place where you can find many things because what you are looking for is all in the search engines. The Internet is a global network of billions of computers and other electronic devices. With the internet, it is possible to access almost any information, communicate with anyone else in the world and do much more. The internet is an increasingly important part of daily life for people all over the world.

Significant changes have also occurred with Computerized Accounting Information Systems. In order to analyze such systems in the corner of threats, a questionnaire was distributed to local organizations operating these services in order to obtain a more accurate analysis of the threats that are present in these information systems.

Keywords: CAIS, internet, threats, security and pandemic.

ANODIC TREATMENT OF NICKEL-COPPER ALLOY IN A DEEP EUTECTIC SOLVENT TO PROVIDE ENHANCED ELECTROCATALYTIC ACTIVITY

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ABSTRACT

Objectives: This work was aimed at investigating the effects of anodic electrochemical treatment of Ni–Cu alloys in a deep eutectic solvents (DES) containing a liquid mixture of ethylene glycol and choline chloride. DES are considered as a new and promising kind of ionic liquids exhibiting a great number of ecological, technological and commercial advantages. The work was focused on improving the electrocatalytic activity towards the hydrogen evolution reaction for further development of hydrogen technology and hydrogen economy.

Methods: To treat the nickel-copper surface and study the chemical content, surface morphology and electrocatalytic performance, the following methods were used: potentiostatic electrolysis, scanning electron microscopy, energy-dispersive X-ray analysis, cyclic voltammetry and electrochemical impedance spectroscopy.

Results: We showed that the anodic treatment of Ni-Cu alloys in DES at proper electrode potentials ensures selective dissolution of copper component. This results in the formation of a highly porous surface layer enriched in nickel (like Raney nickel). The surface treatment leads to a marked improvement in electrocatalytic activity towards the reaction of hydrogen evolution in an alkaline solution, which was confirmed by both the results of Tafel analysis of the recorded polarization curves and the data of electrochemical impedance spectroscopy.

"Common" water electrolytes cannot provide such effects due to passivation processes in the course of electrochemical processing.

Conclusions: The anodic treatment of the nickel-copper alloy in a DES allows increasing the electrocatalytic activity towards the hydrogen evolution. These findings can be used to develop novel hydrogen-based renewable energy sources.

CLOUD HUMAN RESOURCE INFORMATION SYSTEMS (CHRIS): THREATS AND ADVANTAGES

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ABSTRACT

Cloud is one of the most attractive technologies of the time. It is based on the internet through which information is stored on the virtual server and is offered as a service to customers on demand. This technology has reached its peak due to the current situation of COVID 19 when a lot of work is done online and the continuous development of virtual platforms, such as platforms for Human Resource Management which have offered advantages such as optimization, flexibility and reliability; advantages which have shown the superiority of these platforms over the physical ones. This pandemic and the development of these systems was also the motive of this study which aims to find the advantages and threats we encounter in these systems. For this purpose, the analysis was developed through questionnaires in various companies that use Human Resource Management Systems. The main advantages of these systems have been found as well as the link between the implementation of a system for managing human resources and current threats. Current studies therefore recommend updates to safety procedures and ongoing staff training.

Keywords: CHRIS, cloud, threats, security and pandemic.

YENILIKÇI ENERJI VE ÇEVRESEL ETKI AZALTMA

INNOVATIVE ENERGY AND ENVIRONMENTAL IMPACT REDUCTION

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ÖZET

Modern dünyada enerji, endüstrilerin gelişmesinin temelidir. Tüm gelişmiş sanayi ülkelerinde, enerjinin büyüme hızı diğer endüstrilerin büyüme oranını aşıyor. Enerji aynı zamanda çevre ve insanlar üzerindeki olumsuz etkilerin kaynaklarından biridir. Atmosfer (oksijen tüketimi, gaz emisyonları, nem ve katılar), hidrosfer (su kullanımı, yapay rezervuarların oluşturulması, kirli su ve sıvı atıkların deşarjı) ve litosfer (fosil yakıtların kullanımı, peyzaj değişikliği, toksik emisyonlar).

Küresel ısınma, bununla savaşmak için küresel çabaları gerektirir - her şeyden önce, nedenlerini, sonuçlarını bulmak, ani iklim değişikliğiyle mücadele etmek ve ona uyum sağlamak. Hidrokarbon kaynakları elektrik üretiminin ana kaynağı olmaya devam ederse, gezegen büyük iklim değişiklikleriyle karşı karşıya kalacak. Bu durumda, dünya enerji sistemi 2050 yılına kadar atmosfere 400 Gt karbon salacak ve içeriğini 750'den 1000 Gt'ye çıkaracak. Bugün, sera etkisinin yaratılmasında antropojenik kaynaklı sera gazları - CO_2, hakimdir.

Küresel ısınmayla mücadele için birçok öneri var. Önerilerden bazıları yalnızca Birleşmiş Milletler yürütme mekanizmalarına odaklanmıştır. Bazı durumlarda bölgesel veya sektörel bir yaklaşım gereklidir. Ani iklim değişikliğine adaptasyonla bağdaşmayan katı gereksinimleri azaltmak için öneriler var.

Son yıllarda küçük nehirlerin rüzgar, güneş, dalga, gelgit, hidrolojik enerjisi gibi geleneksel olmayan enerji kaynakları dünyanın yeni enerji kaynakları arasında özel bir yere sahiptir. Bu tür yenilenebilir enerji kaynaklarının çevre dostu olması, gelecekte daha geniş kullanımlarının temelini oluşturur. Yüzyılın başından bu yana, yenilenebilir enerji üretimi on kat arttı (hidroelektrik hariç). Şu anda, yenilenebilir enerji dünyadaki elektrik üretim kapasitesinin 1/3'ünden fazlasını ve dünya üretiminin % 26'sını oluşturmaktadır. Bu ve diğer veriler, bu endüstrinin gelişiminin sadece birkaç ülkeye bağlı olmayacağını göstermektedir. Elektrik enerjisi sektöründeki yatırımların toplam hacmi içinde yenilenebilir enerjinin payı 2/3 oldu. Yenilenebilir enerjinin gelişimi ve enerji verimliliği hızlandırılmalıdır.

Yenilenebilir enerjinin hızlanan gelişimine rağmen, dünya bir iklim kriziyle karşı karşıyadır. İklimin korunması sadece yenilenebilir enerjinin rolünün geliştirilmesini ve genişlemesini değil, aynı zamanda fosil yakıtların yaygın kullanımının azaltılmasını da gerektirir. Birçok alternatif enerji kaynağı türü, çeşitli iklim özellikleri ve koşulları için en iyi seçenekleri seçmenize izin verir.

Anahtar Kelimeler: yenilenebilir enerji, iklim değişikliği, çevre, kalkınma, kaynaklar.

ABSTRACT

In the modern world, energy is the basis for the development of industries. In all developed industrial countries, the growth rate of energy exceeds the growth rate of other industries. At the same time, energy is one of the sources of negative impact on the environment and people. Atmosphere (oxygen consumption, gas emissions, moisture and solids), hydrosphere (water use, creation of artificial reservoirs, discharge of polluted water and liquid waste) and lithosphere (use of fossil fuels, landscape change, toxic emissions).

Global warming requires global efforts to combat it - to find out the causes, consequences, to combat abrupt climate change and adapt to it. If hydrocarbon resources remain the main source of electricity production, then the planet will face huge climatic changes. In this case, the world energy system will emit 400 Gt of carbon into the atmosphere by 2050 and increase its content from 750 to 1000 Gt. Today, greenhouse gases of anthropogenic origin - CO_2, prevail in the creation of the greenhouse effect.

There are many proposals to combat global warming. Some of the proposals focused exclusively on the UN executive mechanisms. In some cases, a regional or section approach is required. There are proposals to mitigate stringent requirements, which is incompatible with adaptation to abrupt climate change.

In recent years, non-traditional energy sources such as wind, solar, wave, tidal, hydrological energy of small rivers have a special place among the world's new energy sources. The environmental friendliness of this type of renewable energy sources creates the basis for their wider use in the future. Since the turn of the century, renewable energy generation has increased tenfold (excluding hydropower). Currently, renewable energy accounts for more than 1/3 of the power generation capacity and 26% of world production in the world. These and other data suggest that the development of this industry will not rely only on a few countries. In the total volume of investments in the electric power industry, the share of renewable energy amounted to 2/3. The development of renewable energy and its energy efficiency accelerated.

Despite the accelerated development of renewable energy, the world is facing a climate crisis. Preservation of the climate requires not only the development and expansion of the role of renewable energy, but also a reduction in the widespread use of fossil fuels. Many types of

alternative energy sources allow you to choose the best options for various climatic features and conditions.

Keywords: renewable energy, climate change, environment, development, sources.

NUMERICAL ANALYSIS OF DOUBLE PIPE HEAT EXCHANGER BY USING HYBRID NANOFLUID

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ABSTRACT

In this study, numerical analysis of double pipe heat exchanger is carried out by using water, Al_2O_3 (nanofluid), Al_2O_3+SiC (hybrid nanofluid) as a coolant which flows through annulus side with constant inlet temperature of 30°C and water is used as hot fluid which flows through inner pipe of heat exchanger by varying inlet temperature of 50°C ,60°C,70°C. Nanofluid is prepared by nanoparticle volume ratio of (5:0) with 0.1% volume concentration and Hybrid nanofluid with nanoparticles volume ratio (4:1) with 0.1% volume concentration are suspended in De-ionized water. Effect of using water, nanofluid, hybrid nanofluid as a coolant by varying hot fluid(water) inlet temperature on different parameters like heat transfer rate, pressure drop ratio, cold fluid outlet, Nusselt number, friction factor temperature, pump work and different parameters are analyzed. Results shows that maximum enhancement in heat transfer rate is around 5.2% for hybrid nanofluid with negligible increase of 0.17% in pump work while compared with water, and Nusselt number is increased by increases in Reynolds number and enhancing volume concentration of nanofluid and hybrid nanofluid, further friction factor decreases while increase in Reynolds number. Therefore, by this study it is observed that using hybrid nanofluid there will be definite increment in heat transfer rate.

Key words Double pipe heat exchanger · Nanofluid · Hybrid nanofluid · Heat transfer rate · Friction factor · Nusselt number

OPTIMIZATION OF SODIUM LAURYL SURFACTANT CONCENTRATION FOR NANOPARTICLE PRODUCTION

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ABSTRACT

Sodium lauryl surfactant concentration optimization for nanoparticle production provided the platform for advanced research studies. Different concentrations (0.05 %, 0.1 %, and 0.2 %) of sodium lauryl surfactant were added to snail shells powder during milling processes for producing $CaCO_3$ at smaller particle size. Epoxy nanocomposites prepared at filler content 2 wt.% synthesized with different volumes of sodium lauryl surfactant were fabricated using a conventional resin casting method. Mechanical properties such as tensile strength, stiffness, and hardness of prepared nanocomposites were investigated to determine the effect of sodium lauryl surfactant concentration on nanocomposite properties. It was observed that loading of the synthesized nano-calcium carbonate improved the mechanical properties of neat epoxy at lower concentrations of sodium lauryl surfactant 0.05 %. Meaningfully, loading of achatina fulica snail shell nanoparticles produced, with small concentrations of sodium lauryl surfactant 0.05 %, increased the neat epoxy tensile strength by 26%, stiffness by 55%, and hardness by 38%. Homogeneous dispersion facilitated by the addition of sodium lauryl surfactant during milling processes improved mechanical properties. Research evidence suggests that nano-CaCO3, synthesized from achatina fulica snail shell, possesses suitable reinforcement properties that can be used for nanocomposite fabrication. The evidence showed that the addition of small concentrations of sodium lauryl surfactant 0.05 % improved dispersion of nanoparticles in a polymeric material that provided mechanical properties improvement.

Keywords: *Achatina Fulica* Shell, Nano-$CaCO_3$, Nanocomposite, Sodium lauryl surfactant, Mechanical properties

SPECTRAL ANALYSIS OF AEROMAGNETIC DATA FROM CURIE POINT DEPTH FOR GEOTHERMAL RECONNAISSANCE IN SOME PARTS OF KADUNA NW, NIGERIA

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ABSTRACT

In this work, a reconnaissance study is presented to delineate the subsurface and lithological inferences of the Study of aeromagnetic data. To achieve this goal, several transformation techniques and filtering processes are accomplished on these maps. At first, the total intensity aeromagnetic map is processed through the application of reduction to the magnetic north pole technique. These maps were digitized on a TMI grid. An analysis of the total magnetic field over the area of study was carried out using the aeromagnetic data sets. The following dedication were made: (1) the interpreted lineaments follow a predominantly EW- and NSW-trending orientation, while (2) other orientations in the survey area include NW-, ENE- and, more rarely E-trending structures (3) the existence of several high short wavelength magnetic closures with steep gradients near the geologic boundary is a strong indication that the basin may not be as large as depicted by the geologic map. The residual magnetic field values were employed to obtain the two dimensional Fourier transforms from which the radial spectrum was extracted. The slopes of the graph of spectral energy against frequency of nine sections were obtained and used to estimate the depth values. The result suggested that the deeper depth of the study area ranges from 1.99 km – 2.83 km while the shallow depth ranges from 0.78 km – 1.25 km. Delineation of favourable lithological units between cretaceous meta-sediments and Eocene boundary. Final, the study reveals that structural interpretation based on aeromagnetic data is an efficient tool for frontier exploration for hydrocarbon accumulation and/or mineralization.

Keywords: Spectral Analysis; Curie Point Depth; Geothermal; Aeromagnetic Data and Kaduna State

THERMO-ECONOMIC OPTIMIZATION ON A MINI-LNG PLANT

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ABSTRACT

Cryogenic natural gas liquefaction plant has huge capital and operating expenses corresponding to operating equipment and energy utilization. However, the total cost of a small-scale LNG plant has not been fully investigated, yet. Therefore, it is necessary to thoroughly discuss the costs of all the main and utility units of the process integrated.

In this study, a real LNG plant including 16 units has been simulated and optimized. Since Mini-LNG plants are not economical, therefore, in this study was tried to optimize these plants by optimizing operating conditions. So operational variables are extracted considering technical and economic criteria and the break-even point of the plant is chosen as the main objective function. In this study, for the first time, break-even point optimization was performed for the whole LNG supply chain. In the following, the effect of 34 initial variables on the objective function is studied using a sensitivity analysis method. The simulated LNG plant in HYSYS software is optimized based on real constraints and conditions by using the Genetic Algorithm method. After optimization, the total energy consumption of the 50 tons/day plant has decreased from 1.63 kWh/kg LNG to 1.48 kWh/kg LNG meaning 2.9% saving in total energy consumption. The results showed that the break-even point of the plant with a production scale of 50 tons/day is 20 years and 11 months. Consequently, the break-even point is reduced by 19 years and 7 months.

Keywords: Liquefaction, Natural gas, Optimization, Break-even point, Economical, Genetic Algorithm

TRADE OPENNESS AND ECONOMIC GROWTH IN NIGERIA; A VECTOR ERROR CORRECTION MODEL (VECM) APPROACH

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ABSTRACT

Objectives: Trade openness is based on the principle of non-interference by the government involving the exchange of capital goods and services across international borders and territories. This study investigated the relationship between trade openness and economic growth in Nigeria from1981 to 2019.

Methods: Causal comparative or ex-post facto research design was adopted in the study. The study make used of a quantitative method of analysis by employing the Vector Error Correction Model (VECM) using the econometrics software, Eviews-10 as the tool of analysis. Secondary data on trade openness (TOP), exchange rate (EXR), foreign direct investment (FDI), and real gross domestic product (RGDP) were source from central bank of Nigeria (CBN) statistical bulletins of 2020. RGDP was the dependent variable while TOP, FDI, and EXR were the independent variable.

Results: The result indicated that in the short-run but TOP and FDI has positive and insignificant relationship with RGDP. While in the long-run TOP has negative but significant relationship with RGDP. FDI has a positive but insignificant relationship with RGDP.

Conclusion: the study concludes that trade openness can be considered as a vital instrument that can be used in boosting the economic growth in Nigeria if properly managed. The study recommended that, The Nigerian government also needs to moderate its trade liberalization policy as the economy seems too weak to absorb the negative shocks from trade openness and FDI should be encouraged as it was seen to have positive impact on economic growth among other recommendations were made

Keywords: Economic growth, Trade Openness, Foreign Direct Investment, Vector Error Correction Model (VECM)

POTASYUM HİDROKSİT'İN COVİD-19 TEDAVİSİNDE POTANSİYEL ETKİNLİĞİ

POTENTIAL EFFECT OF POTASSIUM HYDROXIDE IN THE TREATMENT OF COVID-19

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ÖZET

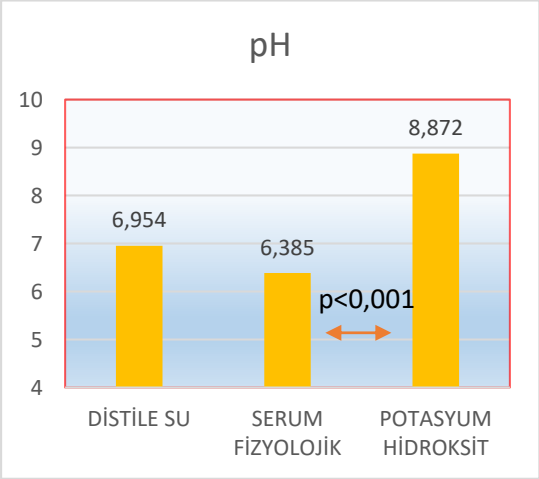
Kül yüzyıllardır temizlik maddesi olarak kullanılmıştır. Kül yoğun miktarda potasyum hidroksit(KOH) içerir(1,2). Bu sebeptendir ki kül içeriğindeki KOH daha sonraları sabun ve deterjan yapımında kostik olarak kullanılmaya başlanmıştır. Ancak KOH'un kostik özelliği nedeni ile insanlarda yanlışlıkla kullanımı ölümle sonuçlanabilen ciddi yaralanmalara yol açmıştır.

Covid-19 tüm dünyada korkulan etkisini devam ettirmektedir. Dünya sağlık örgütünden yapılan açıklamada sabun ile el temizliğinin Covid-19 korunmasında önemi sık sık vurgulanmaktadır.

Coronavirüsün lipid zar yapıda olması ve bu yapının bozulması ile virüsün canlılığını kaybetmesi, virüsün akciğer hücrelerinde füzyonu için asidik bir ortam istemesi, Covid-19 progresyon ile mukus tıkaçlarının ilişkisi dikkatimin KOH üzerinde yoğunlaşmasına sebep olmuştur. Çünkü KOH saponifikasyon yapıcı, alkalen ve adhesive özelliklere sahiptir.

Bu sebeple KOH'in distile su ve saline solüsyonu üzerindeki pH etkilerini inceledim.

Hazırlanan KOH solüsyonunun distile su ve saline solüsyonundan daha alkalen olduğu tespit edildi($p<0.001$)(Grafik-1).



Grafik-1: Distile su, saline ve KOH solüsyonu pH değerleri

Koronovirüsün bir insan hücresi ile füzyonunun tetikleyici koşullarından birisi, hücrenin yüzeyindeki asitleştirilmiş endozomdur. Başka bir deyişle, virüsün düşük pH ortamına ihtiyacı vardır. Covid-19 hastalığının hızlı progresyonu bilinmektedir. Hızlı ilerleyen inflamasyon ise metabolik olarak ortamı asitleştirir. Gerek metabolik, gerekse de respiratuar asidozisin virüs hücre içerisine girişini arttırdığı bilinmektedir. Bu ise akciğerlerin daha kısa sürede kötüleşeceği anlamına gelmektedir. Covid-19 hastalığının bu klinik durumunda güncel tedavide $NaHCO_3$ verilmekle birlikte klorokin gibi ilaçlar ile de hücre içi pH dengeleri düzenlenilmeye çalışılmaktadır.

KOH solüsyonunun ortamı alkalen hale getirmesinin virüsün hücreye girmesini engelleyebileceği düşünülebilir.

Bu çalışma sonucuna göre KOH, Covid-19 hastalığında alkalinite edici özelliği ile oral, nasal sprey ya da inhaler uygulama ile tedavi edici ajan olarak kullanılabilir. Ayrıca KOH'in potansiyel saponifikasyon etkisi ile lipid zarfını parçalaması, adhesiv etki ile mukus tıkaçlarını engellemesi tedaviye katkı sağlayacaktır. Bu çalışma KOH'un Covid-19 üzerinde potansiyel terapötik bir ajan olarak kullanılabilmesi için kurgulanmıştır.

Anahtar Kelimeler: Covid-19, Potasyum Hidroksit, Saponifikasyon, Alkalinite

ABSTRACT

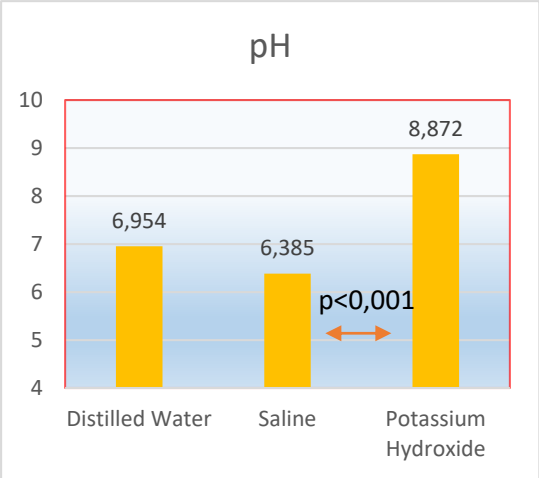
Ash has been used as a cleaning agent for centuries. Ash contains a large amount of potassium hydroxide (KOH). It is for this reason that KOH in the ash content has been used as a caustic in soap and detergent production. However, due to the caustic property of KOH, accidental use in humans has led to serious injuries that may result in death.

Covid-19 continues its feared effect all over the world. In the statement made by the World Health Organization, the importance of hand cleaning with soap in the protection of Covid-19 is often emphasized.

The fact that the coronavirus has a lipid membrane structure and this structure is destroyed, the virus loses its vitality, the virus requires an acidic environment for fusion in the lung cells, the relationship between Covid-19 progression and mucus plugs caused my attention to focus on KOH. Because KOH has saponification and alkaline properties.

For this reason, I studied the pH effects of KOH on distilled water and saline solution.

It was determined that the prepared KOH solution was more alkaline than the distilled water and saline solution ($p<0.001$) (Graph-1).



Graphic-1: pH values of distilled water, saline and KOH solution

One of the triggering conditions for the fusion of the coronovirus with a human cell is the acidified endosome on the surface of the cell. In other words, the virus needs a low pH environment. Rapid progression of Covid-19 disease is known. Rapidly progressive inflammation metabolically acidifies the environment. It is known that both metabolic and respiratory acidosis increase virus entry into the cell. This means that the lungs will get worse in a shorter time. In this clinical case of Covid-19 disease, NaHCO3 is given in the current treatment, and intracellular pH balances are tried to be regulated with drugs such as chloroquine.

It can be thought that making the environment alkaline with KOH solution at doses suitable for human use may prevent the virus from entering the cell.

According to the results of this study, KOH can be used as a therapeutic agent in Covid-19 disease with its alkalinizing feature by oral, nasal spray or inhaler application at doses suitable for human use. In addition, KOH's decomposition of the lipid envelope with its potential saponification effect, and the prevention of mucus plugs with its adhesive effect will contribute to the treatment. This study was designed to use KOH as a potential therapeutic agent on Covid-19.

Keywords: Covid-19, Potassium Hydroxide, Saponification, Alkalinity

COVİD-19'UN NÖROLOJİK ETKİLERİ

NEUROLOGICAL EFFECTS OF COVID-19

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ÖZET

İlk olarak 2019 yılının Aralık ayında Çin'in Wuhan kentinde ortaya çıkan zarflı, 29903 nükleotidli RNA genomuna sahip korona virüs (Covid-19) çok kısa bir zaman içerisinde tüm dünyaya yayılarak pandemik bir covid-19 salgınına neden olmuştur. Esas olarak solunum sistemini hedefleyen covid-19 'un enfekte ettiği kişilerdeki tat ve koku kaybı, baş ağrısı, bilinç kaybı gibi semptomlar ile santral (SSS) ve periferik (PSS) sinir sistemi üzerinde de etkili olduğu düşünülmüştür. Aynı beta alt grup ailesinden olan 2002'de SARS-Cov ve 2012'de MERS-Cov virüslerinin de solunum sisteminin yanında çeşitli nörolojik semptomlara ve birçok kronik hastalık ile ilişkili olması ile dünya sağlığını tehdit ettikleri için covid-19 enfeksiyonu üzerine çok sayıda çalışma yapılmaya başlanmıştır. Yapılan birçok covid-19 çalışmasında hastalarda SSS ve PSS tutulumu ile iskelet kası hasarı sonucu çeşitli nörolojik belirtilerin olduğu bildirilmiştir. SARS ve MERS salgınları ile ilgili yapılan çalışmalarda da hastaların beyin omurilik sıvısında (BOS) ve ölen hastaların beyin dokusunda virüslerin mRNA'larının tespit edilmesi üzerine korona virüslerde nöroinvaziv eğilim özelliğinin ortak özellik olduğu belirtilmiştir. Bu bilgiler doğrultusunda bizlerde covid-19'un nörolojik etkilerinin daha iyi anlaşılması üzerine covid-19 enfeksiyonu geçirmiş kişilere online bir anket çalışması uyguladık. Uygulanan bu anket çalışmasının sonuçlarının değerlendirilmesine göre SSS (baş ağrısı, ataksi, bilinç değişikliği) ve PSS (tat ve koku kaybı, görme bozukluğu)'nin semptomlarının yanında iskelet kas sistemi (kas ağrısı, güçsüzlük) semptomlarının da enfeksiyon süresince ve enfeksiyon sonrasında enfekte kişilerde görülmesi sonucu covid-19'un nörolojik etkilerinin bulunduğu belirlenmiştir.

Anahtar Sözcükler: Korona Virüs, Santral Sinir Sistemi, Periferik Sinir Sistemi, ACE-2 Reseptörü, Sitokin Fırtınası.

ABSTRACT

Coronavirus which is an enveloped, RNA virus with 29,903 nucleotides has appeared in Wuhan city of China in December, 2019 and caused a Covid-19 pandemic by spreading all over the world within a short period. Although covid-19 infection targets the respiratory system, symptoms such as loss of taste and odor, headache and loss of consciousness suggested the

effect of the virus on the central (CNS) and peripheral (PBS) Nervous System. Since viruses of SARS-Cov in 2002 and MERS-Cov in 2012 from same beta subgroup have threatened the world health in association with different neurological symptoms and several chronic diseases along with the respiratory system, many studies have been conducted on Covid-19 infection. Furthermore, different neurological symptoms were reported as a result of CNS and PNS involvement as well as skeleton muscle injury in the patients. Studies conducted about SARS and MERS pandemics detected mRNAs of the viruses in the cerebrospinal fluid (CSF) of the patients and in the cerebral tissue of deceased patients; therefore, it was stated that neuroinvasive tendency is a common characteristics in coronaviruses. In the light of such information, we performed an online questionnaire study on individuals who had covid-19 infection in order to understand neurological effects of covid-19 better. Evaluation of this questionnaire study revealed that covid-19 has neurological effects due to CNS (headache, ataxia, change in consciousness) and PNS (loss of taste and odor, visual disorders) as well as skeletal muscle system (muscle pain, exhaustion)on infected individuals during and after the infection.

Key Words: Corona Virus, Central Nervous System, Peripheral Nervous System, ACE-2 Receptor, Cytokine Storm

FİTOBEZOARIN SEBEP OLDUĞU İLEUS HASTALARININ TEDAVİSİ

TREATMENT OF PATIENTS WITH ILEUS CAUSED BY PHYTOBEZOAR

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ÖZET

Amaç

Sorbus Domestica aşırı tüketimi sonucu oluşan fitobezoar nedeniyle ileus gelişen ve tedavi ettiğimiz hastalara yaklaşımımızı paylaşmak ve literatür eşliğinde tartışmak.

Araç ve Yöntemler

2012 ve 2020 yılları arasında Genel Cerrahi Kliniğinde fitobezoar nedeniyle ileus tanısı alan ve tedavi edilen hastalardan elde edilen veriler retrospektif olarak toplandı ve değerlendirildi.

Sonuçlar

Erbaa Devlet hastanesinde Fitobezoar nedeniyle ileus tanısı alan takip ve tedavisi yapılan 25 hasta çalışmaya dahil edildi. İleusa neden olan fitobezoarların Sorbicus Domestica meyvesinin aşırı olarak tüketilmesi sonucu olduğu anamnezden alınan bilgiyle belirlendi. Yirmi hasta konservatif tedavi ile başarı sağlanamayınca opere edildi. Tüm hastlarda başlangıçta minimal invaziv cerrahi tercih edildi. Altı hastada laparatomiye geçilmesi uygun görüldü. Üç hastada morbidite gelişti. Mortalite izlenmedi.

Sonuç

Özellikle Türkiye'nin Karadeniz bölgesinde ileus ile gelen hastalarda ffitobezoarın bu bölgelerde sık tüketilen Sorbus Domestica meyvesi nedeniyle olabileceği akla getirilmelidir. Konservatif tedaviden fayda görmeyen hastalarda ilk tercih minimal invaziv cerrahi olmalıdır.

Anahtar Kelimeler: Sorbus Domestica, Fitobezoar, ileus, Minimal invaziv cerrahi

ABSTRACT

Objective

To share our approach to patients who develop ileus due to phytobezoar caused by excessive consumption of Sorbus Domestica and whom we treat, and to discuss in the light of the literature.

Materials and Methods

Data obtained from patients diagnosed and treated with ileus due to phytobezoars in the General Surgery Clinic between 2012 and 2020 were collected and evaluated retrospectively.

Results

25 patients who were diagnosed with ileus due to Phytobezoar in Erbaa State Hospital, followed up and treated, were included in the study. Phytobezoars causing ileus were determined by the information obtained from anamnesis as a result of excessive consumption of Sorbicus Domestica fruit. Twenty patients were operated when conservative treatment failed to achieve success. Minimally invasive surgery was initially preferred in all patients. Conversion to laparotomy was deemed appropriate in six patients. Morbidity developed in three patients. Mortality was not observed.

Conclusions

It should be kept in mind that phytobezoars may be due to the fruit of Sorbus Domestica, which is frequently consumed in these regions, especially in patients presenting with ileus in the Black Sea region of Turkey. Minimally invasive surgery should be the first choice for patients who do not benefit from conservative treatment.

Keywords: Sorbus Domestica, Phytobezoar, ileus, Minimally invasive surgery

DIVERSITY AND MYCORRHIZAL POTENTIAL OF ARBUSCULAR MYCORRHIZAL FUNGI IN TWO NATURAL SOILS IN THE EASTERN REGION OF MOROCCO

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ABSTRACT

Previous studies have shown that arbuscular mycorrhizal fungi (AMF) play a significant role in agriculture, by improving hydromineral nutrition and resistance to biotic and abiotic stresses to plants. Their use in agriculture makes it possible to limit the contribution of chemical inputs. The present study aimed to assess the species composition and diversity of AMF in two soil samples from two sites in the eastern region of Morocco; Guercif and Zaïo. Our results showed that spore densities of these sites were very high (279 and 386 spores/10 g of soil in Zaïo and Guercif sites, respectively). The provisional identification test of isolated AMF revealed the presence of 57 AMF species, belonging to five families (Glomeraceae, Gigasporaceae, Acaulosporaceae, Entrophosporaceae and Archaesporaceae). *Glomus*, *Rhizophagus, Funneliformis*, *Endogone* and *Acaulospora* were the dominant genera. In addition, we assessed mycorrhizal potential of both soils using the "Most Probable Number" (MPN) method. Our results revealed that the number of mycorrhizal propagules in Guercif soil were higher than that in Zaïo soil. we also showed that the frequency and the intensity of root mycorrhization of leeks transplanted in Guercif soil were higher (90% and 74%, respectively) compared to those transplanted in Zaïo soil (56% and 31%, respectively). These results show that both soils are generally rich in mycorrhizal fungal propagules and have great mycorrhizogenic power, so it would be interesting to isolate and purify fungal strains and to select those that perform well for a given parameter.

Keywords: Arbuscular mycorrhizal fungi, Diversity, "Most Probable Number" (MPN), Frequency and intensity of mycorrhization.

FINITE ELEMENT SHEAR-OUT FRACTURE THROUGH-THICKNESS FRACTURE FAILURE ANALYSIS

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ABSTRACT

Identifying the fracture initiation location and the fracture propagation sequence are essential to successful fracture failure analyses. The shear-out fracture (SOF) failure analysis in the published literature focused on the analysis of the SOF initiation and propagation on the surface of the connected plate without conducting the SOF through-thickness analysis. The SOF through-thickness analysis conducted in this work reveals the following: The SOF initiation begins with a mid-thickness fracture initiation and not surface fracture initiation as reported in the literature. The SOF through-thickness fracture propagation begins with a mid-thickness-to-surface fracture propagation, which occurs over the portion of the shear plane next to the bolthole, followed by the transition from the mid-thickness-to-surface fracture propagation to the surface-to-mid-thickness fracture propagation at the portion of the shear plane between the portion next to the bolthole and the end of the connected plate. The SOF through-thickness fracture propagation ends with the surface-to-mid-thickness fracture propagation at the outer portion of the connected plate. This work thus provides the understanding of the SOF through-thickness fracture propagation needed for the accurate and complete SOF failure analysis.

Key words: Finite element, Fracture Failure analysis, Shear connection, Shear-out fracture, through-thickness fracture propagation.

DESIGN AND ANALYSIS OF SPAN-WISE MORPHING WINGLET

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ABSTRACT

In today's aviation world, winglets are widely used to lessen the aerodynamic drag related to vortices that are created at the wingtips as the plane travels through the air. This paper presents a study of the design and development of a Medium Altitude Unmanned Aerial Vehicles wing mounted with a morphing winglet, along with its aerodynamic and structural analysis. The concept of span-wise morphing of winglets is proposed in this study as it is an effective technology for enhancing aerodynamic efficiency and has the potential to replace conventional control surfaces. Further, the main advantages of variable span morphing winglets are the drag reduction that leads to an increase in range and endurance of the flight. As an extension of span results in an increase in aspect ratio leading to reduce the lift induced drag. It also increases maneuverability during contraction. Sharklet blended winglet is chosen for preliminary design as it is most efficient and has a maximum lift-to-drag ratio in comparison to other winglets. Honeycomb core is used in between the skin of the winglet where span-wise morphing occurs. It gives strength to the winglet when it is morphing as the honeycomb sandwich panel is a structural element with very low density and relatively high strength to weight ratio. Two actuators are used which are fixed at the rib of the winglet to carry out the span-wise morphing of the winglet. The extension in span of the winglet is 25% of the total span of the winglet. The design has been computationally analyzed before and after extending the span of the winglet using ANSYS R18.1. For aerodynamic analysis, ANSYS Fluent solver is used to investigate a flow field in a three-dimensional wing structure and to obtain lift/drag variations. Static structural analysis has been performed on ANSYS Mechanical solver to obtain the maximum deformation, stress, and strain variation to inspect the structural integrity of the morphing wing design. Frequency analysis has also been performed to obtain natural occurrences and mode forms of the design. It was observed that 25% extension in span leads to 4% increase in overall L/D. This shows that morphing in winglets can be a profound way to increase the aerodynamic efficiency of aerial vehicles.

Keywords: Morphing winglet, Honeycomb structure, Span-wise morphing, Aerodynamic efficiency

PROTOTYPE FOR A HYBRID AI AND ML BASED MODEL FOR EFFICIENT PREDICTION OF A MICROWAVE ABSORBER

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ABSTRACT

Implementation of AI (Artificial Neural Network) and ML (Machine Learning) based models for the analysis of microwave absorbers is done to predict the best optimum design for a Microwave Absorber using the maximum Reflection Loss Criteria. But the lack of in-depth knowledge about the effects of the different filler and matrix materials for a Microwave Absorber can widen the gap between the predictive and the experimental results. In this work we suggest an idea for a hybrid model using Artificial Neural Networks(ANN) and ML based classifier models, which can include the effects of the filler and matrix materials along with the overall design aspect of the absorber. The model will look into the electrical and magnetic properties of the filler and matrix materials by analyzing their permittivity and permeability, which will form the base for the classifier model. This will be then fed to the ANN based layers where all the material and design aspects will be combined to suggest the best optimal design for a specific filler-matrix material combination. The hybrid model can provide a better predictive model with diversified results. It will be beneficial in not only selecting the optimum thickness for the absorber but can also help in picking up the right materials for the given thickness that can provide the best Reflection Loss.

Keywords: Microwave Absorber, Reflection Loss, Artificial Neural Networks, ML, Classifier Model

BURUN ESTETİĞİNDE YENİ UFUKLAR

NEW HORIZONS IN RHINOPLASTY

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ÖZET

Plastik cerrahların en sık yaptığı ve neredeyse plastik cerrahinin simgesi haline gelen estetik cerrahi operasyonu; hiç şüphesiz burun estetiği yani rinoplastidir. Burun estetiği konusunda bu kadar yoğun ameliyatlar yapılması, plastik cerrahları daha yeni teknikler üretme arayışına itmiştir. Bu yeni yöntemlerden birisi de "closed rhinoplasty-kapalı teknik burun estetiği"dir. Burun yüzün tam ortasında bir yapı olması nedeniyle, yüz görünümünde oldukça önemlidir. Burun estetiği milimetrik bir hatanın bile dikkat çektiği bir operasyon olduğundan, operasyonların çok özenli yapılması gerekmektedir. Bu nedenle potansiyel hastalar; ameliyat sonrası kesi ya da iz olmamasını talep edebilir. Özellikle görünüm gibi gereklilikler kapalı burun estetiğinin popüler hale gelmesine yol açmıştır. Son yıllarda görüntüleme tekniklerindeki ilerlemeler, kapalı tekniğin değişik varyasyonlarının ortaya çıkmasını sağlamıştır. Kapalı burun estetiğinin; daha az kesi gerektirmesi ve iyileşmenin oldukça hızlı olması gibi avantajları tekniğin son yıllardaki kullanımının artmasına yol açmıştır. Kapalı burun estetiği hasta açısında avantajlı olduğu halde cerrah açısında zor bir operasyondur. Bu yöntemde cerrahi gelişim daha uzun sürer. Teknikte görüş açısı kısıtlı olduğundan cerrah el yordamı ile ilerler. Günümüzde pek çok plastik cerrah tarafından başarı ile uygulanan bir teknik olmasına karşın, bazı cerrahlar daha fazla oranda açık burun estetiğini tercih etmektedir. Açık burun estetiği; ameliyat sırasında daha fazla görüş alanı sağlanması, cerrah açısından öğrenme sürecinin daha kısa olması ve bir grup hastada kapalı tekniğin kullanılamaması nedeniyle tercih edilebilir. Tabi ki bu seçim ameliyat öncesinden hastanın durumunu en ayrıntılı şekilde analiz eden plastik cerrah tarafından yapılır.

Anahtar Kelimeler: Burun Estetiği, Yeni Ufuklar, Cerrahi Operasyon

ABSTRACT

The most frequently performed aesthetic surgery operation by plastic surgeons, which has almost become the symbol of plastic surgery, is undoubtedly rhinoplasty. Performing such intensive surgeries on rhinoplasty has led plastic surgeons to seek newer techniques. One of these new methods is "closed rhinoplasty" Since the nose is in the middle of the face, it is very important in facial appearance. Rhinoplasty is such a sensitive operation that even a millimetric error is highly important. Therefore the operations must be done very carefully. Potential

patients may request no incisions or scars after surgery. In particular, requirements such as appearance have led to the popularization of closed rhinoplasty.Advances in imaging techniques in recent years have led to the emergence of different variations of the closed technique. The advantages of closed rhinoplasty, such as less incision and rapid recovery, have led to an increase in the use of the technique in recent years. Although closed rhinoplasty is advantageous for the patient, it is a difficult operation for the surgeon. In this method, surgical development takes longer. Since the angle of view is limited in the technique, the surgeon proceeds by hand. Although the technique is applied by many plastic surgeons successfully, some surgeons prefer open rhinoplasty. Open rhinoplasty can be preferred because it provides more field of view during surgery, shorter learning process for the surgeon. Also, closed technique cannot be used in some patients. Surely, this decision is taken by the plastic surgeon who analyzes the patient's condition in a detailed way before the operation.

Keywords: Rhinoplasty, New Horizons, Surgery Operation

ENHANCEMENT OF THE PHOTOCATALYTIC PROPERTIES OF BISMUTH-BASED PHOSPHATES FOR THE DEGRADATION OF ORGANIC POLLUTANTS

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ABSTRACT

Organic pollutants and especially non-biodegradable substances are more difficult to degrade. Despite the operation of conventional methods, these harmful substances are not fully mineralized. While advanced oxidation processes could permanently degrade these substances. In this work, bismuth-based phosphate particles were successfully prepared by a facile soft chemistry approach after adjusting various processing factors. The prepared materials were then characterized by different structural, morphological, and spectroscopic techniques such as XRD, SEM, EDXS and FTIR. All the analytical findings of these techniques demonstrated the formation of the synthesized powder.

Subsequently, photocatalytic properties were studied for the degradation of a non-biodegradable dye, Rhodamine B. Photocatalytic tests were performed under UV irradiation and monitored by UV-visible spectrometry to follow the degradation rate and kinetics over time against the Rhodamine dye.

All the above results revealed that bismuth-based phosphates are efficient in degrading RhB dye effectively during 12 minutes of UV illumination.

Keywords: Phosphate, photocatalyst, Rhodamine, Degradation

This work financially supported by cotutelle fellowship of the university of Toulon - France and PBER program of CNRST – Morocco.

A SCALABLE ARCHITECTURE FOR THE BIG DATA PROJECT

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ABSTRACT

Today, big data is going the most relevant technology used in different fields, industrial firms and government, to capture value from the data it is critical to understand what approaches is suitable for the project. This big data is defined by three principal proprieties (3V's) are; Volume, Velocity, and Variety. Data volume is the data transfer from Terabyte to Zettabyte or more, when data velocity is a measure of the creation speed from batch processing to streaming data or real time, and the data variety represents the data formats (Structured, Unstructured, and Semi-structured), there are more data characteristics like data complexity and veracity. Those characteristics can be a challenge for organizations if they don't have the right skills and sophisticated technologies in big data projects, and the big data management is more crucial for the project success. In this context, a scalable architecture for big data is required to take a whole control of the data process and better decision making with more agility and adapted to any change with real-time response. The call of a wide range of advanced technology is mandatory in the big data architecture project workflow like Machine Learning (ML) is useful for data collection, analytics and data integration, the Hadoop ecosystem provides scalable big data analytics, reasonable cost for storage, captures more data at scale, and so more advantages. The aims of this work are to create a process model for big data project management and a scalable architecture based on the reviewed work and projects in this field.

Keywords: Big Data Management, Data Architecture, ML, Scalable Model.

FABRICATION AND CHARACTERIZATION OF Mg-DOPED ZnO ($Zn_{1-x}Mg_xO$) SEMICONDUCTORS PREPARED BY ELECTRODEPOSITION TECHNIQUE FOR PHOTOVOLTAIC APPLICATIONS

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ABSTRACT

Highly transparent and conductive materials are required for photovoltaic applications [1]. One of the interesting features of zinc oxide (ZnO) is the possibility to dope it using different elements, hence improving its conductivity and optical transparency [2, 3]. Results concerning ZnO electrodeposited in zinc nitrate medium containing different amounts of magnesium (Mg) dopants precursor are presented in this work. Doping ZnO with Mg leads to significant effects on the morphology and crystalline structure as well as an evolution of the optical properties of the material. Varying the Mg dopant percentages (at.%) in ZnO from 1% to 5% strongly improves the compactness and surface flatness of the deposit and increases the bandgap from 3.30 to 3.41 eV. Investigations were also conducted to estimate and determine the influence of Mg doping on the electrical properties of the ZnO. As a result, an increase in the charges carrier density and the electrical conductivity was noted with the increase of the Mg doping. Finally, ZnO deposited in Mg rich electrolyte was tested as window layer of Cu_2O based solar cell. A rectification factor of 1200 at ± 1V was measured with a quite high photoresponsivity of 300% which confirms the high conductivity of the ZnO.

Keywords: Electrodeposition, Doping, Magnesium, Photovoltaic, ZnO.

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ERKEK RATLARDA LİPOPOLİSAKKARİTE (LPS) BAĞLI TESTİS HASARINA KARŞI VİTAMİN E VE SODYUM SELENİT'İN KORUYUCU ROLÜNÜN BELİRLENMESİ

DETERMINATION OF THE PROTECTIVE ROLE OF VITAMIN E AND SODIUM SELENITE AGAINST LIPOPOLYSACHARIDE (LPS) INDUCED TESTICULAR DAMAGE IN MALE RATS

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ÖZET

Erkek üreme sistemine ait bir yapı olan testiste sertoli hücreleri, leydig hücreleri ve spermatojenik hücreler gibi pek çok hücre vardır. Bu hücreler kendi salgıları ile aktive olur ve testisler normal şartlarında bulunur. Ancak enfeksiyon ve kronik inflamasyon testiste dengeyi bozarak erkek üreme sistemi üzerinde olumsuz etki yaratır.

Toksik bir bileşen olan LPS, bağışıklık sistemi tarafından tanınabilen bir doğal bakteriyel ürün olup testislerde inflamasyon ve oksidatif strese neden olur. Oksidatif stres, erkek üreme sistemini olumsuz etkileyen bir diğer önemli faktördür. Oksidatif stres, hücresel metabolizma sırasında oluşan reaktif oksijen türlerinin artışı ile onları detoksifiye eden antioksidanların yetersizliği sonucu oksidatif dengenin bozulmasına neden olan bir durumdur.

Vücutta bulunan antioksidan savunma sistemleri, serbest radikalleri etkisiz hale getirmeye çalışır. Endojen kaynaklı antioksidanlar yeterli olmadığında, oksidatif hasarı azaltabilecek diyet sadece dışarıdan alınacak vitamin E (VE) ve sodyum selenit (SS) gibi antioksidanlardır.

Çalışmamızda, LPS ile muamele edilmiş rat modelleri oluşturarak testiste meydana gelecek olası hasarları ve bu hasarlara karşı koruyucu olabilecek VE ve SS'nin etkisini araştırmayı amaçladık. Ratlar sekiz gruba ayrıldı: kontrol grubu, VE uygulanan grup, SS uygulanan grup, VE + SS uygulanan grup, LPS uygulanan grup, LPS + VE uygulanan grup, LPS + SS uygulanan grup ve LPS + SS + VE uygulanan grup. Testis dokusunda serbest radikallerin etkileri ile makromoleküllerin oksidatif hasarı sonucunda açığa çıkan MDA miktarı, antioksidan enzim aktiviteleri, komet testi ile DNA hasarı ve ışık mikroskobu altında histokimyasal incelemeler yapıldı. LPS+SS+VE uygulanan grup LPS, LPS+SS ve LPS+VE uygulanan gruplarla kıyaslandığında MDA seviyesinde istatistiksel olarak anlamlı bir azalma, antioksidan enzim aktivitelerinde artma ve DNA hasarında azalma olduğu tespit edildi. LPS+VE ve LPS+SS uygulanan gruplar sadece LPS uygulanan grupla karşılaştırıldığında daha az patolojik durum

meydana geldiği görüldü. SS ve VE'nin birlikte uygulanması, ayrı uygulanmalarına göre patolojik etkiyi daha da azalttı.

Anahtar Kelimeler: Lipopolisakkarit, Oksidatif Stres, Vitamin E, Sodyum Selenit

ABSTRACT

In the testis, which is a structure belonging to the male reproductive system, there are many cells such as Sertoli cells, Leydig cells and spermatogenic cells. These cells are activated by their own secretions and the testes are found in their normal conditions. However, infection and chronic inflammation disrupt the balance in the testis and have a negative effect on the male reproductive system.

LPS, a toxic component, is a natural bacterial product that can be recognized by the immune system and causes inflammation and oxidative stress in the testicles. Oxidative stress is another important factor affecting the male reproductive system. Oxidative stress is a condition that causes deterioration of oxidative balance as a result of the increase of reactive oxygen species formed during cellular metabolism and the insufficiency of antioxidants that detoxify them.

Antioxidant defense systems in the body try to neutralize free radicals. When endogenous antioxidants are not sufficient, the only dietary sources that can reduce oxidative damage are antioxidants such as vitamin E (VE) and sodium selenite (SS).

In our study, we aimed to investigate possible damage to the testis and the effect of VE and SS, which may be protective against these damages, by creating rat models treated with LPS. Male rats were divided into eight groups: control group, vitamin E (VE) administered group (200 mg/kg), sodium selenite (SS) administered (0.35 mg/kg), VE + SS administered group (200 + 0.35 mg/kg). LPS treated group (10 mg/kg), LPS + VE treated group (10 + 200 mg/kg), LPS + SS administered group (10 + 0.35 mg/kg), and LPS + SS + VE administered group (10 + 0.35 + 200 mg/kg). The amount of MDA released as a result of the effects of free radicals and oxidative damage of macromolecules in testicular tissue, antioxidant enzyme activities, DNA damage with the comet test and histochemical examinations under light microscope were performed. When the LPS+SS+VE group was compared to the LPS, LPS+SS and LPS+VE groups, there was a statistically significant decrease in MDA levels, an increase in antioxidant enzyme activities and a decrease in DNA damage. LPS+VE and LPS+SS applied groups were observed to have less pathological conditions when compared to the LPS applied group alone. Co-administration of SS and VE further reduced the pathological effect compared to their separate administration.

Keywords: Lipopolysaccharide, Oxidative Stress, Vitamin E, Sodium Selenite

A STUDY ON WELL FOUNDATIONS: WELL FOUNDATION ANALYZES FOR ATTACHED BUILDINGS

KUYU TEMELLER ÜZERİNE BİR ÇALIŞMA: BİTİŞİK NİZAM YAPILAR İÇİN KUYU TEMEL ANALİZLERİ

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ABSTRACT

The main purpose of foundations is the transfer of the loads that occur due to structures to be built on foundations safely to the soil. Soil profiles under foundations must have engineering properties to carry these loads. Constructions that to be built attached to existing ones must be designed by considering the interaction between soil-structure, also design should not damage neighboring structures either. The methods that can be applied at this point are limited due to the deficiency of the work area. Well foundation method is one of the most suitable methods that can be applied in attached buildings or strengthening/restoration works. The structure to be built with this method is made independent from the neighboring structures by a reinforced concrete wall, so foundation excavation and construction of foundation can be performed.

The well foundation can be considered as a reinforced concrete retaining wall. Well foundations are divided into pieces along to the adjacent building. The length and width of these parts are generally 3.0 meters and 1.5-2.0 meters, respectively. The construction process is started from the first part, and it is continued by leaving one by a one-part blank. Excavation, reinforcing bar, and concreting operations are carried out for each part. The excavation process is supported by horizontal and vertical supports on average every meter. After the construction of the all well foundations according to the project is completed, the foundation excavation and construction of the foundation can be conducted.

In this study, the analysis of well foundation (bearing capacity of the soil, overturn check, and sliding control) of a structure to be built that is attached from two sides to neighboring structures are performed. The analyses are achieved by using both the traditional method and ideCAD that a program widely used in building systems modeling in Turkey. It has been seen that the data obtained using both analyzes are compatible at a rate of between 85-95%.

Keywords: Well Foundation, Soil-Structure Interaction, Excavation, ideCAD

ÖZET

Temellerin esas amacı üzerlerine inşa edilecek yapılardan dolayı meydana gelecek yüklerin güvenli bir şekilde zemine aktarılmasıdır. Temellerin altındaki zemin profili bu yükleri taşıyabilecek mühendislik özelliklerine sahip olmalıdır. Bitişik nizam olarak inşa edilecek yapılarda yapı-zemin etkileşiminin dikkate alınmasının yanında komşu yapılara da zarar vermeyecek şekilde tasarımlar yapılmalıdır. Bu noktada uygulanabilecek yöntemler çalışma alanı yetersizliğinden dolayı kısıtlıdır. Kuyu temel yöntemi bitişik nizam olarak inşa edilecek yapılarda veya güçlendirme/restorasyon çalışmalarında kullanılabilecek en uygun yöntemlerden bir tanesidir. Bu yöntem ile inşa edilecek yapı, betonarme bir duvar vasıtası ile komşu yapılardan bağımsız hale getirilerek temel kazısı ve temel inşası yapılabilir.

Kuyu temeller betonarme bir istinat duvarı olarak düşünülebilir. Kuyu temeller inşa edilecek cephe uzunluğu boyunca genellikle 3.0 metre uzunluğunda ve 1.5-2.0 metre genişliğinde anolara bölünür. İlk anodan yapıma başlanılarak, birer ano boş bırakılarak inşa süreci devam eder. Her anoda sırasıyla kazı, demir ve betonlama işlemleri yapılır. Kazı işlemi ortalama her bir metrede yatay ve düşey desteklerle desteklenir. Projesine göre tüm kuyu temellerin inşası bittikten sonra temel kazısı ve ardından temelin inşası yapılır.

Yapılan bu çalışmada, iki cephesinde bitişik nizam yapılar bulunarak inşa edilecek bir yapının kuyu temel analizleri (zemin taşıma gücü hesabı, devrilme tahkiki, kayma kontrolü) yapılmıştır. Bu analizler, hem geleneksel yöntemlerle hem de Türkiye'de yapı sistemleri modellemelerinde yaygın olarak kullanılan bir program olan ideCAD ile yapılmıştır. Her iki yöntem ile yapılan analizler sonucunda elde edilen verilerin birbiri ile %85-95 oranında uyumlu olduğu görülmüştür.

Anahtar Kelimeler: Kuyu Temel, Zemin-Yapı Etkileşimi, Kazı, ideCAD

PROFITABILITY OF COCOA MARKETING IN OSUN STATE, NIGERIA

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ABSTRACT

This research work revealed an economic analysis of Cocoa marketers in Osun state, Nigeria. The purposive objectives of this research work includes; socio-economic characteristics of Cocoa markerters, markerting activities of the target group, analysing the cost and returns associated with marketing of Cocoa and identifying challenges associated with marketing activities of the respondents. Purposive Sampling Technique was used to select 100 cocoa marketers in the study area. Descriptive and Budgetary analysiswere adopted to analyze the data collected. The outcome of the analysis revealed that 82% of the respondents were male while 18% were female. The result also showed that all markerters were married with average household of 6.02 and 58% of the respondents had tertiary education. The average age of the respondents was 45.5 years and claimed 13.5 years(mean) of experience in marketing of Cocoa. Budgetary analysis obtained from the data collected revealed that cocoa marketing is profitable in the study area with the Gross Margin of #2,587.24 per tonne sold with Benefit Cost Ratio of 1.102. Cocoa marketing was found to be profitable in the study area but there was room for improving cocoa marketing efficiency. The analysis also revealed fluctuation in price since the price for cocoa bean can be determined by international market, inadequate capital, lack of security, high transportation cost, unattractive value added to cocoa beans and unfavorable government policy were major difficulties against cocoa markerting in the study area. Cocoa markerting was found to be perfectly competitivesince the regression analysis revealed that number of Cocoa tonnes sold per season, storage cost,, rent, age and educational background of the marketers were found to be significantly related to Net Return of Cocoa markerting.

This study recommend that government should create social amenities such as road rehabilitation to ease transportation and formulate policy that will favour cocoa marketing. The marketers should initiate a registered co-operative society that can enhance them financial support.

Key words: Cocoa, Cocoa Markerting, Profitability, Analysis

PYRROLIDINE DITHIOCARBAMATE AS AN ANTIVIRAL COMPOUND AGAINST COVID-19 VIRUS

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ABSTRACT

Since the outbreak of COVID-19 virus in December 2019 in China, more than 181,221,327 people were affected, and 39,26090 people worldwide died as of 26 June 2021. Pyrrolidine dithiocarbamate (PDTC) antioxidants compound, which controls specifically viral gene replication and transcription. PDTC specifically inhibit viral RNA dependent RNA polymerase activity via direct chelating various divalent metal ions. Divalent-metal ions play critical roles in RNA unwinding and translocation during viral replication. Meanwhile, it is essential to control viral infection in early-stage virus synthesized specific macromolecules (Genetic material and Protease). Here we are riveting on the early stage of infection that arbitrates induction of apoptosis in host cells. PDTC work in the early stage of viral infection (Replication and Transcription), which inhibit viral-mediated apoptosis of host cell.

Keywords: Pyrrolidine dithiocarbamate, RNA dependent RNA polymerase, Divalent-metal ions, Replication, Translocation, Apoptosis

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CLOSTRİDİUM RAGSDALEİ KULLANILARAK İMMOBİLİZE BİYOREAKTÖRDE SENTEZ GAZ FERMANTASYONU YOLUYLA BİYOETANOL ÜRETİMİ

BIOETHANOL PRODUCTION THROUGH SYNGAS FERMENTATION IN IMMOBILIZED BIOREACTOR USING *CLOSTRIDIUM RAGSDALEI*

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ÖZET

Artan nüfus ve endüstrileşme ile birlikte Dünya'daki enerji talebi büyük oranda artmış ve aynı zamanda hava kirliliği ile mücadele tüm Dünya'da en önemli konulardan biri haline gelmiştir. Fosil yakıtların işlenmesi ve kullanılması çevre ve insan sağlığına zararlı olan zehirli gazların salınmasına yol açmaktadır. Atmosferdeki karbondioksit ve diğer sera gazlarının artması küresel ısınmanın ana nedenidir. Küresel ısınmanın en büyük etkisi ise iklim değişikliğidir. Bu sebeple sürdürülebilir ve daha güvenli alternatif enerji kaynaklarının kullanılması önem arz etmektedir.

Sentez gaz, çoğunlukla, biyokütlenin gazlaştırılması veya pirolizi yoluyla elde edilen CO, CO_2, N_2, H_2 ve CH_4 gazlarının bir karışımıdır. Sentez gaz fermantasyonu, anaerobik koşullar altında Wood-Ljungdahl yolu olarak bilinen bir dizi biyokimyasal reaksiyonla etanol ve asetik asit üretimi ile sonuçlanır. Bu bağlamda, sentez gazın, fosil yakıtlara alternatif bir biyoyakıt olan biyoetanole dönüştürülmesi, sera gazı emisyonlarını azaltarak küresel ısınmanın olumsuz etkilerinin azaltılmasında umut verici bir yaklaşım olarak değerlendirilmektedir.

İmmobilize biyoreaktörler, askıda reaktör sistemlerine göre yüksek mikroorganizma konsantrasyonları, daha düşük alıkonma sürelerinde çalışılabilmesi, kolay ürün kazanımı gibi avantajlara sahiptir.

Bu çalışmada, küçük hacimli biyoreaktörlerde yüksek oranda hacimsel üretimin gerçekleştirilmesinin hedeflendiği, özgün reaktör tasarımına sahip olan İmmobilize biyoreaktörde, anaerobik koşullar altında Wood ljungdahl yolizi ile CO' dan etanol üretimini gerçekleştirebilen *Clostridium ragsdalei* kullanılmıştır. Seramik topun immobilizasyon materyali olarak kullanıldığı 300 mL' lik bir immobilize reaktörde, 30ºC sıcaklıkta, 3ml/dak sürekli saf CO gazı beslenerek fermantasyon işlemi gerçekleştirilmiştir. Sonuçlar, 600 h'de etanol ve asetik asit konsantrasyonlarının sırası ile 1,4 g/L ve 0,2 g/L'ye ulaştığını göstermiştir.

Bu çalışma, TÜBİTAK_BİDEB 2214/A Yurt Dışı Doktora Sırası Araştırma Burs Programı, TÜBİTAK_ÇAYDAG 118Y 305 numaralı proje ve Kimya Mühendisliği Laboratuvarı (BIOENGIN grup) - Fen Fakültesi ve İleri Bilimsel Araştırmalar Merkezi – La Coruña tarafından desteklenmiştir. BIOENGIN grubu, Xunta de Galicia (ED431C 2017/66) tarafından Rekabetçi Referans Araştırma Grubu olarak tanınmıştır.

Anahtar Kelimeler: Hava Kirliliği, Biyoetanol, Sentez Gaz Fermentasyonu, Clostridium

ABSTRACT

With the increasing population and industrialization, the energy demand in the world has increased to a great extent and at the same time, the fight against air pollution has become one of the most important issues in the world. The processing and use of fossil fuels release toxic gases that are harmful to the environment and human health. The increase in carbon dioxide and other greenhouse gases in the atmosphere is the main cause of global warming. The biggest impact of global warming is climate change. For this reason, it is important to use sustainable and safer alternative energy sources.

Syngas is a mixture of, mostly, CO, CO_2, N_2, H_2, and CH_4 gases that are obtained through gasification or pyrolysis of biomass. Synthesis gas fermentation results in the production of ethanol and acetic acid by a series of biochemical reactions known as the Wood-Ljungdahl pathway under anaerobic conditions. In this context, the conversion of syngas to bioethanol, an alternative biofuel to fossil fuels, is considered as a promising approach to reduce the negative effects of global warming by reducing greenhouse gas emissions.

In comparison to suspended reactor systems, immobilized reactors have advantages such as higher biomass concentrations, lower retention times, easy separation of biomass from the liquid phase, and easy product recovery.

In this study, *Clostridium ragsdalei*, a species that can produce ethanol from CO by the Wood-Ljungdahl pathway under anaerobic conditions, was used in an immobilized bioreactor, which has a novel reactor design, to achieve high volumetric production of ethanol in small volume bioreactors. Fermentation was carried out in a 300 mL immobilized reactor, with ceramic balls as immobilization material, at 30ºC, feeding 3 ml/min of pure CO gas continuously. The results

showed that ethanol and acetic acid concentrations reached up to 1.4 g/L and 0.2 g/L, respectively, after 600 h.

This study was supported by TUBITAK_BIDEB 2214/A International Doctoral Research Fellowship Program, TUBITAK_CAYDAG 118Y 305 and Chemical Engineering Laboratory (BIOENGIN group) - Faculty of Science and Advanced Scientific Research Center - La Coruña. BIOENGIN group is recognized as Competitive Reference Research Group by Xunta de Galicia (ED431C 2017/66).

Keywords: Air Pollution, Bioethanol, Syngas Fermentation, Clostridium

DESCRIPTIVE STUDY OF FISH MARKET, SURAT, GUJARAT, INDIA

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ABSTRACT

A place where the fishes and fish products of commercial importance are subjected to sale is called as fish market. Fishes are an important resource for the humans worldwide, especially as food. Fish market can be dedicated to wholesale trade between fishermen and fish merchants, or to the sale of seafood to individual consumers, or to both. Survey of Nanpura fish market situated in Surat district was carried out each day for a period of one month during January 2021-February 2021. The market was constructed in 1950 by Surat municipal corporation (SMC). Structured interview schedules were used to collect information from the fish market through key informal survey and members of trader cooperative societies. Forty-three traders were interviewed from wholesale and retail markets of Nanpura. It was observed that trucks loaded with fishes were brought to fish market early in the morning without cooling facility. Fishes sold in the wholesale market were brought from outside Surat city (Porbandar, Veraval, Somnath, Dwarka, and Okha) and other states of Maharashtra by road and railways. Dead fishes were packed in thermocol boxes with ice while live fishes were brought to the market in drums. Catla, Rohu, Mrigal, Bombay duck, Dara, Pungus, Mullet, Kaska, Pomfret, Yellow nanda, Gilli, Rani fish and silver carp were some of the common fish noted for selling in Nanpura fish market.The outcome of the survey showed some constraints associated with the fish marketing in Nanpura and will help to mitigate the problems for sound functioning of the fish market.

Key words: Survey, Nanpura, Interview, Species, Traders

CHLAMYDOMONAS REİNHARDTİİ'DE 2-METİLİMİDAZOLÜN BAŞLİCA METABOLİK BİLEŞENLER ÜZERİNDEKİ ETKİSİNİN BELİRLENMESİ

DETERMINATION OF THE EFFECTS OF 2-METHYLIMIDAZOLE ON MAJOR METABOLIC COMPONENTS OF GREEN ALGA *CHLAMYDOMONAS REINHARDTII*

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ÖZET

Mikroalgler, hücreleri içinde biyoteknolojik açıdan önem arz eden protein, yağ ve pigmentler gibi pek çok kıymetli molekülü içermektedir. Bu moleküllerin hücre içinde üretimi belli bir dengede gerçekleşmekte olup, stres koşulu altında ya da belli kimyasal uyarıcıların etkisi ile birden çok molekül için metabolik yol izi tetiklenebilmektedir. Bu çalışmada karotenoid yol izinin biyotransformasyonunda etkili olan 2-metilimidazol'ün tek hücreli bir yeşil alg türü olan *Chlamydomonas reinhardtii* mikroalginde protein, yağ, toplam karotenoid ve klorofil birikimi üzerine etkisi araştırılmıştır. Bu amaçla 1 mM 2-metilimidazol uygulanan örnekler kontrol örnekleri ile birlikte 5 gün boyunca kültüre edilerek bu maddenin hücre büyümesi ile hücre içi metabolitlerin birikimine olan etkisi belirlenmiştir. Sonuç olarak, hücre içinde klorofil ve karotenoid miktarında sırası ile yaklaşık 2 kat ve 4 kat azalma görülürken, protein ve yağ birikimi açısından sırası ile yaklaşık 1,5 ve 2 kat artış kaydedilmiştir. 2-metilimidazol her ne kadar karotenoid yol izinin farklı karotenoidlere yönlendirilmesi için kullanılabilen bir kimyasal olsa da, mikroalglerde hücre içi yağ birikimi için de değerlendirilebileceği düşünülmektedir.

Anahtar Kelimeler: Chlamydomonas, 2-Metilimidazol, Protein, Yağ, Karotenoid

ABSTRACT

Microalgae contain many valuable molecules such as proteins, lipids and pigments that are of biotechnological importance within their cells. The production of these molecules in the cell takes place in a certain balance, and a metabolic pathway can be triggered for more than one molecule under stress conditions or with the effect of certain chemical stimuli. In this study, the effect of 2-methylimidazole, which is effective in the biotransformation of the carotenoid pathway, on protein, lipid, total carotenoid and chlorophyll accumulation in the microalgae *Chlamydomonas reinhardtii*, a single-celled green algae, was investigated. For this purpose, samples treated with 1 mM 2-methylimidazole were cultured together with control samples for 5 days to determine the effect of this substance on cell growth and accumulation of intracellular metabolites. As a result, approximately 2-fold and 4-fold decreases were observed in the

amount of chlorophyll and carotenoids, respectively, in the cell, while approximately 1.5 and 2-fold increases were observed in protein and lipid accumulation, respectively. In conclusion, although 2-methylimidazole is a chemical that can be used to direct the carotenoid pathway to different carotenoids, it can also be evaluated for intracellular lipid accumulation in microalgae.

Keywords: Chlamydomonas, 2-Methylimidazole, Protein, Lipid, Carotenoid

MİKROALGLERDE STREPTOMİSİN ANTİBİOTİĞİ UYGULAMASININ BÜYÜME VE KAROTENOİD BİRİKİMİNE ETKİSİ

THE EFFECT OF STREPTOMYCIN APPLICATION ON GROWTH AND CAROTENOID ACCUMULATION IN MICROALGAE

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ÖZET

Streptomisin antibiyotiği ökaryotik hücrelerde mitokondri ve kloroplast ribozomlarında protein sentezinin inhibisyonuna sebep olabilmektedir. Bu sebeple hücre içinde fotosentezin etkin şekilde gerçekleşmemesi ve hücre içinde reaktif oksijen türlerinin oluşumuna yol açabilmektedir. Karotenoidler antioksidan moleküller olup mikroalglerde hücrenin kendini hücre içinde oluşabilen serbest oksijen moleküllerinin zararlı etkisinden korumak amacı ile üretilmektedir. Bu çalışmada streptomisin antibiyotiğinin, bir yeşil mikroalg türü olan Chlamydomonas reinhardtii'nin hücre büyümesine ve hücre içi karotenoid birikimine etkisi araştırılmıştır. Yapılan ön denemeler sonucunda kullanılan suş için 25 µg/mL Streptomisin etkin doz olarak belirlenmiştir. Belirlenen dozda antibiyotik uygulanan örnekler ve kontrol örnekleri beş gün boyunca inkübe edilerek büyüme oranı, toplam klorofil ve karotenoid tayini analizleri gerçekleştirilmiştir. Karotenoid profillerinin belirlenmesi amacı ile İnce Katman Kromatografisi uygulanmıştır. Deneme sonucunda streptomisin uygulanan örneklerde toplam karotenoid miktarında kontrol grubuna kıyasla 7 kata yakın artış belirlenmiştir. Bu çalışma ile streptomisinin karotenoid birikimine olumlu etkisi belirlenmiş olup farklı alg türleri için de uygun bir stimülatör olarak kullanılabileceği düşünülmektedir.

Anahtar Kelimeler: Mikroalg, Streptomisin, Karotenoid

ABSTRACT

The antibiotic streptomycin can cause inhibition of protein synthesis in mitochondria and chloroplast ribosomes in eukaryotic cells, which may have a negative effect on photosynthesis and also can lead to the formation of reactive oxygen species in the cell. Carotenoids are antioxidant molecules and are produced in microalgae to protect the cell itself from the harmful effects of free oxygen molecules. In this study, the effect of streptomycin on cell growth and intracellular carotenoid accumulation in microalgae *Chlamydomonas reinhardtii*, was investigated. As a result of the preliminary trials, 25 µg/mL streptomycin was determined as

the effective dose for the strain of interest. Samples treated with antibiotics at the determined dose and control samples were incubated for five days, and growth rates, total chlorophyll and carotenoid accumulations were analyzed. Thin Layer Chromatography was applied to determine the carotenoid profiles. As a result, it was determined that the total amount of carotenoids in the samples treated with streptomycin was increased by 7 times compared to the control group. In this study, the positive effect of streptomycin on carotenoid accumulation was reported and it may also be used as a suitable stimulator for different algae species.

Keywords: Microalgae, Streptomycin, Carotenoid

SECOND BRAIN GUT MICROBIOTA AND ITS ROLE IN THE TREATMENT OF DISEASES

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ABSTRACT

The aim of this review is to determine the importance of intestinal microbiota in the treatment of diseases, the current usage areas of Fecal Microbiota Transfer (FMT) and its indications in veterinary practices. Today, the gut microbiota is called the second brain and it is thought that many diseases can be treated by regulating the microbiota. The gut-brain linked is a bi-directional integrated system composed of immune, endocrine, and neuronal components by which the gut microbiota is affected. Intestinal microbiota and metabolites (such as bacterial enzymes); in addition to affecting gastrointestinal functions such as intestinal permeability, mucosal immunity, intestinal motility, enteric nervous system activities, it also affects cerebral functions and control of behavior, stress response, depression, pain modulation and brain biochemistry. In recent years, FMT has been used as a highly successful treatment option in human medicine, non-infected and infected diarrhea cases, and *Clostridium difficile* infections that do not respond to antimicrobials. Diseases such as chronic fatigue syndrome, idiopathic thrombocytopenic purpura, and insulin sensitivity have shown a positive response to FMT treatment. FMT has been tried for the treatment of diseases caused by circovirus infections in pigs, chronic ulcerative colitis in cats, calf diarrhea, parvovirus infections in dogs and colitis in horses, and successful results have been obtained. In addition to the treatment of many diseases, it is also used to increase weight gain in food animals. FMT can be administered oral and rectal pathway. Although FMT, which is included in the treatment protocol of gastrointestinal system diseases in the field of human medicine, is still at the research stage in the field of veterinary medicine, the results of the studies carried out so far are promising. Therefore, it is thought that in the future, FMT treatment will be used frequently in the field of veterinary practices, especially in gastrointestinal system diseases (such as ulcerative colitis, Crohn's disease, colon cancer) and will be among the standard protocols.

Keywords: Gut microbiota, Second brain, Fecal microbiota transfer.

CHEMICAL COMPOSITION OF MOROCCAN *NIGELLA SATIVA* SEED FRACTIONS AND THEIR ANTIDIABETIC ACTIVITIES

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ABSTRACT

Nigella sativa (NS) is a very known plant for its various benefits and multiuse in traditional medicine. This study aimed to investigate the chemical composition of the different *NS* fractions by using the CG-MS for the esterified fatty acids or HPLC-UV for organic fraction and to evaluate the inhibitory effect on pancreatic α-amylase, and intestinal glucose absorption.

Among all the investigated fractions it was shown that they are rich with different molecules of great interest. The n-hexane fraction was characterized by the presence of linoleic acid (44.65%), Palmitic acid (16.32%), Stearic acid (14.60%), and Thymoquinone (8.7%). While, among the identified peaks in EtOH fraction we found Catechin (89.03 mg/100g DW), rutin (6.46 mg/100g DW), and Kaempferol (0.032 mg/100g DW). The MeOH fraction was distinguished with the presence of Gallic acid (19.91 mg/100g DW), Catechin (13.79 mg/100g DW), and Rutin (21.07 mg/100g DW). Finally, the aqueous fraction was marked by the existence of different molecules among them we mention, Salicylic acid (32.26 mg/100g DW), Rutin (21.46 mg/100g DW), and vanillic acid (3.81mg/100g DW).

Concerning the inhibitory effect on pancreatic α-amylase it was found that in the *in vitro* study the best IC_{50} registered were those of EtOH (0.25 mg/ml), MeOH (0.10 mg/ml), Aqueous (0.031mg/ml), and n-hexane fraction (0.76 mg/ml). while in the *in vivo* study it was observed an important inhibition of α-amylase in normal and diabetic rats. Finally, the percentage of intestinal glucose absorption was evaluated for all tested extracts and it was ranging from 24.82 to 60.12%.

The results of the present study showed that the *NS* seeds fractions exert an interesting inhibitory effect of α-amylase and intestinal glucose absorption activity which could be associated with the existent bioactive compounds. Indeed, these compounds can be used as antidiabetic agents because of their non-toxic effect and high efficacy.

Keywords: *Nigella sativa*, Phytotherapy, α-amylase, intestinal glucose absorption, Type 2 diabetes.

ADIYAMAN İLİ BADEM BAHÇELERİNDE 15:15:15 KOMPOZE GÜBRE UYGULAMASI

15:15:15 COMPOSITE FERTILIZER APPLICATION IN ADIYAMAN PROVINCE ALMOND ORCHARDS

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ÖZET

Badem, dünya ve ülkemizde gün geçtikçe popülerliği artan bir ürün olarak kendini saydırmaktadır. Ayrıca ülkemize dış girişli bir ürün olması, bademe ülkemiz için daha önemli ve stratejik bir ürün hüviyeti kazandırır. Türkiye'de çerezlik bademe dış ülkelerden temin edilmesi badem yetiştiriciliğin son yıllarda ülke topraklarında yaygınlaşmasına neden olmuştur. Bu hızlı yayılımın ülkemizde en belirgin halini Adıyaman ili tarım arazilerinde görebilmekteyiz. Son on yıl içeresinde yapmış olduğu atılım ile Türkiye'de en fazla badem yetiştiriciliği yapılan alana sahip olduğu görülmekte olup, üretim miktarı olarak şuanda ikinci sırada bulunmasına karşın birkaç yıl sonra birinci sıraya gelebileceği ön görülebilmektedir. Üretimdeki verimin artacağı ön görülse de yurtdışındaki verim rakamlarının çok gerisinde bulunmaktadır. Bunun önemli sebeplerinde biri bitki besleme konusundaki bölgesel eksikliklerin olmasıdır. Halkın meyve yetiştiriciliği ile yeni tanışması ve bölge için gerekli kültürel uygulamaların tam olarak belirlenememiş olması bu tip sıkıntılara zemin hazırlamaktadır. Adıyaman'da bulunan Sert Kabuklu Meyveler Araştırma Enstitüsü Müdürlüğümüz bölgeye uygun gübre ve dozları tespit edebilmek için bir takım denemeler gerçekleştirmektedir. Bu çalışmada Azot(N), Fosfat(P), Potasyum(K) içerikli 15:15:15 kompoze taban gübresi Şubat ayında ferregnes ve ferraduel çeşitlerinin bulunduğu bir deneme bahçesinde ağaç başına 700, 1050, 1400, 1750 ve 2100 gr dozda uygulanmıştır. Uygulama neticesinde çiçeklenme tarihi, dal ve sürgün gelişimi, pomolojik ve verim ölçümleri yapılarak badem yetiştiriciliği için Adıyaman ilinde Şubat ayında uygulanacak en uygun kompoze gübre dozunun belirlenmesi hedeflenmiştir. Uygulama sonucunda dal ve sürgün gelişiminde dozlar arasında uygulama ile açıklanabilecek etki görülememiştir. Pomolojik gözlemlerde ise ferraduel çeşidi için birkaç önemli parametrede(iç badem ağırlığı ve uzunluğu gibi) ağaç başına 1400 gr dozu ön plana çıkmıştır. Ferragnes çeşidinde ise sert kabuklu meyve ağırlığı, kalınlığı, iç meyve ağırlığı ve iç meyve kalınlığı gibi bazı önemli parametrelerde 1750 gr dozu öne çıkmıştır. Denemede kullanılan 8 yaşındaki badem ağaçlarında yapılan verim gözlemlerin de bazı dış parametreler neticesinde doz değişkenliği ile açıklanabilir anlamlı bir değişim gözlemlenememiştir. Çalışma neticesinde elde edilen çıkarım ve veriler ile üretici ve araştırıcılar için yapılacak çalışma ve uygulamalara parlak fikirler vereceği tahmin edilmektedir.

Anahtar Kelimeler: Badem, kompoze gübre, verim, pomoloji ve dal-sürgün

ABSTRACT

Almond is a product that is increasing in popularity day by day in the world and in our country. In addition, the fact that it is a product with foreign entry to our country gives almond a more important and strategic product identity for our country. Procuring almonds for snacks from foreign countries in Turkey has led to the expansion of almond cultivation in the country in recent years. We can see the most obvious state of this rapid spread in the agricultural lands of Adıyaman province. With the breakthrough it has made in the last ten years, it is seen that it has the most almond cultivation area in Turkey, and although it is in the second place in terms of production amount, it can be predicted that it may come to the first place in a few years. Although it is foreseen that the efficiency in production will increase, it is far behind the yield figures abroad. One of the important reasons for this is the regional deficiencies in plant nutrition. The fact that the people are newly acquainted with fruit growing and the necessary cultural practices for the region have not been fully determined, paves the way for such problems. Our Directorate of Nuts Research Institute in Adıyaman carries out a number of trials in order to determine the appropriate fertilizer and doses for the region. In this study, 15:15:15 compound base fertilizer containing Nitrogen(N), Phosphate(P), Potassium(K) was applied at a dose of 700, 1050, 1400, 1750 and 2100 gr per tree in a trial garden with ferregnes and ferraduel varieties in February. As a result of the application, it was aimed to determine the most appropriate compound fertilizer dose to be applied in February for almond cultivation in Adıyaman by making the flowering date, branch and shoot development, pomological and yield measurements. As a result of the application, there was no effect that could be explained by the application between the doses on the development of branches and shoots. In the pomological observations, a dose of 1400 g per tree came to the fore in several important parameters (such as the weight and length of the inner almond) for the ferraduel variety. In Ferragnes cultivar, 1750 dose was prominent in some important parameters such as hard-shelled fruit weight, thickness, core fruit weight and core fruit thickness. In the yield observations made on 8-year-old almond trees used in the experiment, no significant change was observed, which could be explained by dose variability as a result of some external parameters. It is estimated that the inferences and data obtained as a result of the study will give bright ideas to the studies and applications to be made for the producers and researchers.

Keywords: Almond, compound fertilizer, yield, pomology and branch-shoot

INFLUENCE OF TRACK-BRIDGE INTERACTION ON THE DYNAMICS OF A HIGH SPEED RAILWAY BRIDGE

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ABSTRACT

As demand is increasing on high speed railway lines, proficient and cost-effective design of these vital transportation infrastructures is well expected with ever augmenting traffic speed. The dynamic response of bridges with ballasted track is known to be very dependent on several factors. These may influence largely the response of such composite structures under circulating loads. The interaction occurring in the system is function of the bare bridge track modal properties. But, it is also influenced by the track superstructure including rails, sleepers and ballast. This interaction is due to the friction like mechanical action taking place at the ballast track interlayer which is in nonlinear. It is known that this interaction yields a beneficial effect in terms of additional damping to the coupled system. As it can also destabilize resonance zones because of an additional stiffness term, performing in a more comprehensible way analysis of the coupled dynamic response of ballast-bridge system is still required. Valuable research has been achieved in this field as indicated from recent literature [1-5]. One of the most successful approaches rendering the essential of ballast-bridge interaction is based on modeling the bridge and the track as two-layer beams connected between them through springs and dampers representing the nonlinear friction behavior occurring at their interface. Experimental evidence has enabled the merit of this approach.

The aim of this work is to propose a numerical method based on the differential quadrature method to integrate the nonlinear coupled equations related to the two-beam layer ballast-bridge model. This approach enabled to account in an efficient way of the ballast effect on the global bridge dynamics under all the high speed load models (HSLM). The obtained results have shown that the dynamics is governed essentially by a Duffing like oscillator where the ballast superstructure contributes through both additional nonlinear stiffness and damping.

Keywords: track-bridge interaction, dynamics, resonance, vertical acceleration, railway bridge.

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ENHANCEMENT OF THE PHOTOCATALYTIC PROPERTIES OF BISMUTH-BASED PHOSPHATES FOR THE DEGRADATION OF ORGANIC POLLUTANTS

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ABSTRACT

Organic pollutants and especially non-biodegradable substances are more difficult to degrade. Despite the operation of conventional methods, these harmful substances are not fully mineralized. While advanced oxidation processes could permanently degrade these substances. In this work, bismuth-based phosphate particles were successfully prepared by a facile soft chemistry approach after adjusting various processing factors. The prepared materials were then characterized by different structural, morphological, and spectroscopic techniques such as XRD, SEM, EDXS and FTIR. All the analytical findings of these techniques demonstrated the formation of the synthesized powder.

Subsequently, photocatalytic properties were studied for the degradation of a non-biodegradable dye, Rhodamine B. Photocatalytic tests were performed under UV irradiation and monitored by UV-visible spectrometry to follow the degradation rate and kinetics over time against the Rhodamine B dye.

All the above results revealed that bismuth-based phosphates are efficient in degrading RhB dye effectively during 12 minutes of UV illumination.

Keywords: Bismuth phosphate, photocatalyst, Rhodamine B, Degradation

This work financially supported by cotutelle fellowship of the university of Toulon - France and PBER program of CNRST – Morocco.

HARNESSING OUR AVAILABLE RESOURCES FOR SUSTAINABLE DEVELOPMENT IN RURAL AREAS OF DEVELOPING COUNTRIES

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ABSTRACT

Water is one of the essential human needs; its scarcity comes with its attendant socio-economic effects especially in rural areas of developing countries. This paper evaluated the potential water supply and sanitation facilities in Dagbolu-Nigeria to boost economy.

Facilities survey was carried out for the study area, this included information from water, sanitation and health institutions across the State. GIS approach was used to depict the groundwater recharge potential of the study area.

The findings are that 15.3% of the populace have access to potable water while 32.5% have access to good sanitation. Water-related diseases in the area are preponderantly malaria (81.2%), diarrhoea (8.41%), typhoid fever (3.40%), dysentery (3.22%) and cholera (2.76%). Annual loss due to unproductive downtime sickness in the Nigeria is estimated to be ₦ 414,763,442,768:00.

Improve management through effective policies of water resources leading to good water supply, hygiene and sanitation will enhance development or our underdeveloped countries.

Keywords: Rural Water Supply; Sanitation; Dagbolu; Evaluation; Developing Countries.

A356 ALAŞIMLI JANT ÜRETİMİNDE OKSİT TABAKALARININ ÇEKME TEST SONUÇLARINA ETKİSİ

THE EFFECT OF OXIDE LAYERS ON THE TENSILE TEST RESULT OF A356 ALLOYS

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ÖZET

Alüminyum A356 (Al-%7Si-%0,3Mg) alaşımları yüksek mukavemet/ağırlık oranı, yüksek korozyon direnci, işlenebilirlik ve dökülebilirlik özellikleri sayesinde havacılık, otomotiv sanayii ve genel mühendislik uygulamalarında tercih edilmektedir. Alüminyum oksijen afinitesi çok yüksek olan bir metaldir ve hava ile teması sonucunda çok kısa sürede yüzeyinde oksit tabakası oluşmaktadır. Alçak basınçlı döküm ile gerçekleştirilen üretimlerde, sıvı metalin ergitilmesi, taşınması, transfer edilmesi, döküm süreci, kalıp-ürün tasarımı gibi pek çok respectively etken sonucunda parçaların içerisine oksit tabakaları difüze olmakta ve mekanik özellikler olumsuz etkilenmektedir. Bu çalışmada, T6 ısıl işlemine tabii tutulan A356 alaşımlı jantların üretiminde Al5TiB tane inceltici master alaşım olarak kullanılmıştır. Üretilen jantların çekme testleri gerçekleştirilmiş ve mekanik test performansları değerlendirilmiştir. Çekme test değerleri, aynı şarja ait jantların çekme test çubuklarına ait değerler baz alınarak karşılaştırılmıştır. Çekme test çubukları, jantların feder, dış flanş ve iç flanş bölgelerinden çıkartılmıştır. Çekme testleri sonucunda, jantın dış ve iç flanş bölgelerinde feder bölgesine kıyasla daha yoğun seviyelerde oksit tabakası tespit edilmektedir. Tespit edilen oksit tabakalarının SEM-EDS analizleri gerçekleştirildiğinde Al2O3 ve MgO oksit bileşikleri tespit edilmektedir. Çekme test çubuklarının kopma yüzeylerinde oksit tabakası tespit edilen çubukların özellikle %uzama değerleri ile kopma dayanımı (MPa) değerlerinin, yüzeyde oksit tabakası tespit edilmeyen çubuklara ait değerlerden düşük olduğu tespit edilmiştir. Aynı janta ait çekme çubuklarından, kopma yüzeyinde oksit mevcut olan çubuğa ait %uzama değeri %2,93, kopma dayanım değeri 237,50 MPa, akma dayanım değeri 192,28 MPa iken kopma yüzeyinde oksit olmayan çubuğa ait değerler sırasıyla %12,85, 265,29 MPa ve 187,74 MPa olarak tespit edilmiştir. Tüm sonuçlar incelendiğinde oksit tabakalarının özellikle kopma

dayanımı (MPa) ve %uzama değerlerinin düşmesine neden olduğu ve buna bağlı olarak Kalite İndeksinin düşüş gösterdiği tespit edilmiştir.

Anahtar Kelimeler: A356, Alçak Basınçlı Döküm, Oksit, Al_2O_3, MgO, Kalite İndeksi

ABSTRACT

Aluminum A356 (Al-%7Si-%0,3Mg) alloys have been widely used in aerospace and automotive industry, general engineering industry owing to their excellent strength-to- weight ratio, corrosion resistance, castability, machineability properties. Aluminum is a metal with a very high oxygen affinity and as a result of contact with air, an oxide layer forms on its surface in a very short time. In productions carried out with low pressure casting (LPC), oxide layers diffuse into the parts and mechanical properties are adversely affected as a result of many factors such as melting, transporting, transferring the liquid metal, casting process, mold-product design. In this study, Al5TiB grain refiners were used as a master alloy in the production of T6 heat treated A356 alloy wheels. Tensile tests were carried out and mechanical test properties were analyzed of these wheels. Tensile test results of the rods were compared based on the values of the wheels of the same charge. The tensile test rods were taken from the regions that spoke, outer and inner flanges of the wheels. As a result of the tensile tests, more intense levels of oxide layers were detected in the outer and inner flange regions of the rim compared to the spoke region. When the oxide layers were examined, Al_2O_3 and MgO compounds were detected. It has been determined that the % elongation values and the ultimate tensile strength (UTS) values of the tensile test rods with an oxide layer on the fructure surface lower than the values of the rods without an oxide layer on the fructure surface. When the tensile test rods belonging to the same wheel were examined, it was determined that the % elongation value of the rod with an oxide on the fructure surface is 2.93%, the UTS value is 237,50 MPa, the yield strength value is 192,28 MPa. On the contrary, these tensile test values of the rod without an oxide on the fructure surface is 12,85%, 265,29 MPa and 187,74 MPa respectively. When all the results were examined, it has been determined that the oxide layers were caused decreasing of UTS and the %elongation values and accordingly the Quality Index.

Keywords: A356, Low Pressure Die Casting, Tensile Test, Oxide, Al_2O_3, MgO, Quality Index

TEXT-TO-IMAGE SYNTHESIS: OPTIMAL MODEL IMPLEMENTATION ON PORTRAIT IMAGES USING GAN TECHNIQUES

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ABSTRACT

With the advent of new technologies, Deep Learning (DL) had seen a tremendous success [1], helping in many fields like law enforcement applications [2][3], to solve cases based on transforming text description (giving by eyewitnesses) to real facial images in order to get closer to the portraits of potential suspects [4]. This technique known as text-to-face image generation synthesis has attracted recently attention of many researchers and become an active research area, there are a few works directly related to this area compared to text-to-Image synthesis [5]. For this reason, we adapt existed methods to text-to-face, and deduced the best leading methods.

In this paper, we present an overview about the recent literature of text-to-image synthesis based on variants of Generative adversarial network (GAN) [6]. Our main focus is getting the framework to generate object images from high-level descriptions or at least generate portrait images that match all the descriptions [7]. Some examples: “The man has an oval face and high cheekbones; He has straight hair which is blond in color” or “a young girl with brown hair is smiling.”

First, we define the architecture and strategy of every method then critically examine their main strengths and limitations. Secondly, we train a text encoder using Long Short Term Memory (LSTM) on a dataset of text caption to read the sentence and extract the relevant attributes. Then, we give a full implementation and adaptation on generating images from visual attributes using CELEBA, LFW datasets and our generated natural language description from attributes for each image given in the dataset. At the end, we compare their efficiencies on multiple levels like generated image quality, resources consumed, accuracy for both generator and discriminator, number of epochs, steps and training time. We use also evaluation metrics like inception score [8] and Frechet Inception Distance [9] for trained models.

Our implementation shows that the learned generative models allow excellent quantitative and visual results; the models are capable of generating realistic and diverse samples with latent representations [10][11][12]. Nevertheless, every framework has here gap, either at the level network architecture, at multi-stage training or at generating low image and require another network to augment the quality, we identify new areas of ranging from the development of better datasets and evaluation metrics to possible improvements on models in architectural design and model training.

Keywords: Deep Learning, Text-to-face synthesis, Portrait Generation, GAN

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FACILE FABRICATION OF DURABLE, WATER PROOFING, SUPER-HYDROPHOBIC TEXTILE FABRIC FUNCTIONALIZED ORGANOPHILIC CELLULOSE NANOCRYSTALS

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ABSTRACT

This study focuses on the elaboration of super hydrophobic polyester fabric (PES) coated organophilic cellulose nanocrystal (NCC-ODA) using a simple, cost-effective and scalable coating method. The NCC-ODA was successfully synthesized by covalently grafting a long chain fatty amine to NCC's surface. The effects of reduction and functionalization on the structural and chemical–physical properties of the textile samples were investigated by using several techniques. Transform Infrared Spectroscopic (FTIR) revealed the formation of an amide bond between NCC functional groups and the OctaDecylAmine (ODA) molecules. The treated PES fabrics loaded with contents ranging from 1 to 7 wt.% were successfully prepared and characterized as well. FTIR has confirmed the formation of strong interfacial interaction between the PES and NCC-ODA functional groups. Thermogravimetric analysis (TGA) showed that the produced PES@NCC-ODA coated fabrics exhibit an improved thermal stability. In addition, the effects of the organophilic NCC-ODA contents on the surface morphology were discussed trough Scanning Electron Microscopy (SEM). Surface hydrophobicity of the produced PES fabrics was also investigated. Modified PES fabric showed repellency to water with a high contact angle up to 153°. The as prepared coated cloths were utilized as an absorbent for oil/water separation and its separation efficiency for different oil/water mixtures was also investigated in detail. The obtained results are very promising in terms of designing and producing functional PES fabrics with improved thermal and surface proprieties.

Keywords: Dip-coating; nanocrystals; Polyester; Organophilic cellulose.

THE CONTRIBUTION OF GRAVITY METHOD IN UNDERSTANDING STRUCTURAL SETTING OF THE DEEP AQUIFERS: EXAMPLE OF ISLY BASIN (HORST BELT, NORTHEASTERN MOROCCO)

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ABSTRACT

In arid area, groundwater resources are intensively used to meet the irrigation and domestic water demands of a growing population. In some regions, shallow aquifers are insufficient and exploitation turns towards deep aquifers. Thus, the need for improved understanding of deep hydrogeology is amplified. Gravity method is efficient to understand the structure of large basins. In this study, this method is used to map the faults controlling the structure of the Isly basin, NE Morocco. We applied various and complementary filtering techniques (vertical gradient, upward continuation, horizontal gradient, Euler deconvolution) to the gravimetric map. A multi-scale analysis of gravimetric lineaments allows generating a structural map of the study area. The statistical analysis shows three major trends: N120, N90, and N60, with a clear predominance of the last trend. Euler deconvolution method was used to define the location and depth of the sources which can reach 2280 m. The fault system plays an important role in compartmentalizing the area, hence the deep aquifer hosted in Jurassic limestone and dolomite. Superimposition of the deduced major faults on the geological map shows that E-W and NE-SW trending fault systems are of regional importance. Such discontinuities represent preferred zones of groundwater circulation and are therefore suitable targets for groundwater measurements; they will be helpful for further hydrogeological research in the survey area by providing useful information on subsurface discontinuities and help to identify locations where groundwater could be permanently exploited.

Keywords: Isly basin ; gravity data ; Structural setting ; filtering techniques ; hydrogeological implications

HAND GESTURE RECOGNITION OF ARABIC SIGN LANGUAGE USING A PAIR OF LEAP MOTION CONTROLLERS

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ABSTRACT

According to the most recent statistics of the world health organization in the year 2018, approximately 16 million persons in the middle east and north Africa with disabling hearing loss. Hence, there is an extensive need to develop a system capable of converting sign language into text or speech. Using two leap motion controller devices, we presented a new Arabic sign language interpreter capable of translating 38 Arabic signs from 28 alphabets and numbers "0-9". For classification, we applied the Linear Discriminant Analysis for individual leap motion controllers. We applied Dempster-Shafer's theory to combines pieces of information from two leap motion controllers at the classifier level.

Keywords: Gesture recognition, Sign Language, Leap Motion Controller, Linear Discriminant Analysis, Dempster-Shafer Theory

EFFECT OF MESH TYPE ON FINITE ELEMENT MODELING OF A SPREADER: MESHING QUALITY AND STATIC STRESS

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ABSTRACT

Aeronautics is one of the most demanding industrial field at all levels [1], whose players are in direct interaction with the most imposing machines and very complex designs [2]. As a result, being the safest means of transports in the world is not a coincidence. An impact on an airplane wing, a malfunction of the turbojet engine, a small technical problem and the consequences can be catastrophic. Thus any calculation made during the study phase must be in line with the constraints imposed by the aeronautical authorities. Each part, even the smallest and each screw of the aircraft must be dimensioned in such a way that it withstands the cases of most severe loads. The aim of this study is to develop a new meshing type in order to minimize elements number, nodes, time analysis and consequently the quality and cost. Different models of aircraft seat were studied by finite element modeling. Geometrical modeling of aeronautical and automotive parts using ANSA mesh software was carried out. The fatigue of the studied spreader was calculated and analyzed in order to determine the critical areas. Two modeling types have been investigated trough this study: Hexa-Penta and tetra meshing, the Hexa-Penta type showed superior advantages compared to tetra type, in term of costumer's specification, time analysis, elements number, quality and cost. It was found that the production performance can significantly increase by decreasing analysis time and the minimizing elements number. Geometric modifications were elaborated and technical solutions were investigated. This study showed the importance and the impact of the spreader in the seat, as one of the essential tools for the safety of the passengers.

Keywords: finite element modeling, meshing, software, spreader

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ERGENLERDE BAĞLANMANIN PSİKOLOJİK İHTİYAÇ DOYUMU VE DUYGUSAL ZEKÂ İLE İLİŞKİSİ

THE RELATIONSHIP OF ATTACHMENT WITH PSYCHOLOGICAL NEEDS SATISFACTION AND EMOTIONAL INTELLIGENCE IN ADOLESCENTS

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ÖZET

Bu araştırmanın amacı ergenlerde bağlanmanın psikolojik ihtiyaç doyumu ve duygusal zekâyı yordayıp yordamadığını ortaya koymaktır. Araştırmanın çalışma grubunu farkı lise türlerinde eğitim gören 367 kadın 233 erkek öğrenci olmak üzere toplam 600 lise öğrencisi oluşturmuştur. Araştırmanın veri toplama aşamasında Psikolojik İhtiyaç Doyumunda Denge Ölçeği, Bar-on Duygusal Zekâ Ölçeği, Ebeveyne ve Arkadaşlara Bağlanma Envanteri Gözden Geçirilmiş Formunun ebeveyne bağlanma ölçeği; analizinde ise korelasyon ve basit doğrusal regresyon analizi kullanılmıştır. Araştırma sonucunda ebeveyne bağlanmanın duygusal zekâ ve psikolojik ihtiyaç doyumunun alt boyutları olan ilişkisellik, yeterlik ve özerklik ile pozitif ilişkili bulunmuştur. Ayrıca ebeveyne bağlanmanın duygusal zekâ yeteneklerini ve psikolojik ihtiyaç doyumunu anlamlı düzeyde yordadığı bulunmuştur. Elde edilen bu bulgular ilgili alan yazın ışığında tartışılmış ve bazı önerilerde bulunulmuştur.

Anahtar Kelimeler. Öz-belirleme kuramı, temel psikolojik ihtiyaçların doyumu, duygusal zekâ, ana-babaya bağlanma, ergenlik.

ABSTRACT

The aim of this study is to reveal whether attachment predicts psychological need satisfaction and emotional intelligence in adolescents. The study group of the research consisted of 600 high school students, 367 female and 233 male students studying in different types of high school. In the data collection phase of the study, the Balance in Psychological Needs Satisfaction Scale, the Bar-on Emotional Intelligence Scale, the Parental Attachment Scale of the Parent and Friends Attachment Inventory Revised Form; Correlation and simple linear regression analysis were used in the analysis. As a result of the research, it was found that

parental attachment was positively related to the sub-dimensions of emotional intelligence and psychological need satisfaction, relatedness, competence and autonomy.In addition, it was found that attachment to parents significantly predicted emotional intelligence abilities and psychological need satisfaction. These findings were discussed in the light of the relevant literature and some suggestions were made.

Keywords. Self-determination theory, basic psychological need satisfaction, emotional ıntelligence g, parental bonding, adolescents

IDENTIFICATION OF SMALL MOLECULE INHIBITORS OF GAMMA SECRETASE: AN *IN SILICO* AND *IN VITRO* STUDY

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ABSTRACT

Notch signalling pathway plays an important role in the onset of cancer due to its significant role in cancer cell proliferation, and patient survival. Notch signalling is one of the highly dysregulated signalling pathway in different cancer. Gamma secretase (GS) regulates notch signalling by cleaving notch receptor and releasing Notch intracellular domain (NICD) which enters in the nucleus and initiates expression of notch responsive genes and promotes cancer related hall marks. Inhibition of GS is a potential strategy for cancer treatment. Various compounds as GS inhibitors are tested in clinical trials but not a single compound was found suitable for cancer treatment because of their adverse effects and associated complications. Small molecules are important source of chemotherapeutic agent against cancer. In the present study we have screened InterBioScreen compound library against GS. The GS inhibition potential of the lead compound was tested in computer based and cell line model approach. The *in silico* analysis showed that the tested compounds have high binding affinity for the GS active site and the results were comparable to the DAPT (standard GS inhibitor). Additionally *in vitro* experiments demonstrated the reduced proliferation, and differentiation of the test cancer cell. In conclusion the lead compounds possess promising GS inhibitory activity and should be further evaluated for their use in cancer treatment.

Keyword: Notch signaling pathway, Small molecule, Inhibitor, Cancer

IN SILICO DESIGNING OF VACCINE AGAINST TRIPLE NEGATIVE BREAST CANCER

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ABSTRACT

Triple negative breast cancer (TNBC) is an invasive and highly aggressive type of breast cancer. The disease is known to occur in the younger women and due to absence of any known therapeutic target it is hard to manage the disease in clinical patients. Now a days improved immuno-biology and sequencing techniques allows us to identify the potential antigenic epitopes and their use for the construction of multi-epitope vaccine against disease. In the present study we utilized the immuno-informatics, protein-protein docking, molecular modeling and *in silico* cloning, to design a vaccine for triple negative breast cancer patients. The candidate proteins were identified by searching the literature and their association with the TNBC patient. The antigenic epitopes from the different test proteins were selected and joined with the linkers and adjuvant. The two and three dimensional structures of the vaccine were studied for various associated parameters. The molecular docking and dynamics simulation was performed to check the binding potential of the construct with the important immune molecules such as Tool like receptors. The result showed the better antigenicity, physiochemical parameters and binding potential of the designed vaccine. Further in vitro and in vivo experiments are suggested to check the anti-cancer potential of the vaccine.

Keywords: Triple negative breast cancer, Multi-epitope, Vaccine, Bioinformatics

STRUCTURE, DIELECTRIC AND IMPEDANCE SPECTROSCOPY OF Li_2TiO_3 NANO-PARTICLES VIA SOL-GEL METHOD

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ABSTRACT

Pure phase Li_2TiO_3 nano-particles were synthesized by the sol-gel method, and the structural properties were examined with X-ray diffraction (XRD) technique. The latter showed that these materials, heat treated at relatively low temperature 900°C during 4h compared to the conventional solid-state reaction which calcination temperature is about 900–1100°C for 10 h; crystallize in the monoclinic phase without the presence of secondary phases. The microstructure of the LT ceramic (sintered at 1100°C) were determined by SEM, and good crystalline nature was observed with an average of granular size 2 µm. Moreover, the impedance spectroscopy showed at a higher temperature of 500°C the low-frequency arc due either to the grain boundary or sample-electrode charge transport processes.

Keywords: Li_2TiO_3; Sol–gel; X-ray diffraction (XRD); Microstructure; Impedance spectroscopy

EFFECT OF DEFICIT IRRIGATION ON ELEVEN PLUM CULTIVARS (*PRUNUS DOMESTICA* L.).

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ABSTRACT

The effects of water stress (CDI) on the performance of plums (*Prunus domestica* L.) were evaluated in the Saiss plain (NW of Morocco), during the fruit development period. However, there are no established studies on the drought stress tolerance of the cultivars used. In this study, eleven plum cultivars, growing in the Ain Taoujdate experimental station of INRA Morocco, were examined for their tolerance to water stress of 50% ETc, applied during the fruit growing season, compared to control trees sprayed at 100% ETc. Measurements focused on yield, fruit weight, chemical quality (Brix, pH, titrabl acidity and ripeness index) and biochemical quality of the fruits (total polyphenol content, total soluble sugars, total amino acids and antioxidant capacity). All analyses revealed significant variations among cultivars in response to water stress. However, the cluster analysis based on mean ratios between CDI and FI treatments of all traits highlighted three distinct clusters within the studied cultivars with regard to drought tolerance. PCA analysis using mean trait ratios revealed that the effects of water stress on fruit weight, brix degree, titratable acidity, maturity index and antioxidant activity had the greatest impact on cultivar discrimination for drought tolerance. These results are of great interest for the selection of plum cultivars to be grown in arid areas and for breeding programs to improve drought tolerance of plums.

Keywords: *Prunus domestica*, drought stress tolerance, fruit quality.

PRESSURE AND TEMPERATURE IMPACT ON THE CREATION OF ELECTRONIC STATES INDUCED BY A MQWS DEFECTIVE STRUCTURE

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ABSTRACT

On a Multi-Quantum Wells ZnO/ZnMgO, variations in layer thickness, effective carrier masses, and barrier heights are noticeable when hydrostatic pressure and temperature are applied. To visualize the impact of pressure and temperature on the electronic band structure, we first examined the impact of these perturbations on a periodic MQWs in our paper. Under pressure, the bands shift towards lower energies, whereas under temperature effect, they move towards higher energies. Adding a defect layer, cause the creation of electronic states inside the gaps band. These states have a different behavior under pressure, the electronic states shift towards lower energy, whereas temperature causes the shift to higher energies. As a result, we might be utilized this structure as a pressure or temperature sensor, by introducing a defect in the structure's midsection.

Keywords: Defective MQWs, Defect, Pressure Effect, Temperature Effect.

BIOMASS-DERIVED MESOPOROUS ACTIVATED CARBONS AS POTENTIAL ADSORBENTS FOR CHROMIUM (VI)

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ABSTRACT

In this work, Argan nut shells were inventively turned into high specific surface area mesoporous activated carbons (MAC). Argan nut shells were chemically activated using phosphoric acid (H_3PO_4) as activator. The activation conditions such as the activating temperature and the impregnation ratio of H_3PO_4 were optimized, and their effects into the yield and the physical-chemical properties of activated carbons were investigated. The optimized material has shown a great porosity development (BET surfaces areas of 1879 m^2/g), as well as excellent oxygen-functionalized surface (2.25 mmol/g). The surface functionality and the well-balanced micro/meso-porosity of the optimized material are suitable for many applications such as gas and energy storage, catalysis and water treatment (the mesopores occupied 50 % of the total volume). Whereas, in this work, it was employed for eliminating chromium (VI) (Cr (VI)) from water. Promising results in the adsorption of Cr (VI) were obtained, showing the efficiency of the present synthesis strategy for converting biomass into high surface area mesoporous carbons which could be used in the wastewater treatment.

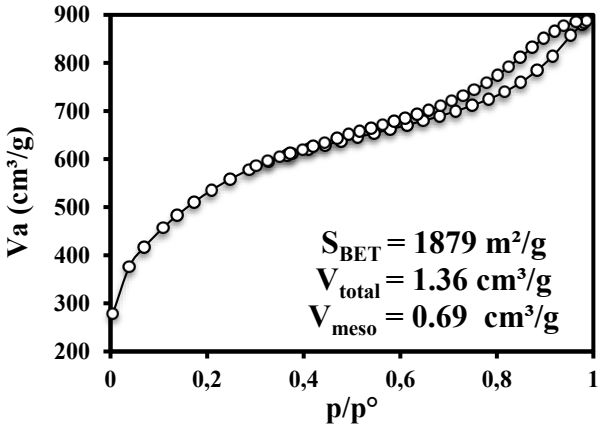

Figure. N_2-sorption isotherm of optimized activated carbon.

Keywords: Argan nut shells, phosphoric acid, Mesoporous activated carbon, chromium (VI).

THE ELECTRONIC PROPERTIES OF THE GROUND STATE IN A TOROIDAL SHAPED QUANTUM DOT

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ABSTRACT

In this paper, we will study the effect of the geometric parameters Rc, theta and phi on the ground state energy for the electron in the toroidal geometric quantum box (TQD). Based on the effective mass approximation and the finite difference method, the three-dimensional Schrodinger equation was solved. Numerical results showed that the electronic energy is very sensitive to small box sizes, due to the geometrical confinement, so there is a significant decrease of the electronic energy at small values of the geometrical parameters (TQD).

Keywords: Quantum dot, Electronic energy.

IMPACTS ECOLOGIQUES ET SANITTAIRE DE LA QUALITE PHYSICO-CHIMIQUE DE LA NAPPE PHREATIQUE D'ASSA-ZAG (SUD DU MAROC)

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RESUME

La province d'Assa-Zag se caractérisé par un climat désert-aride et ses cours d'eau sont temporaires et sont alimenté par des précipitations (La pluviométrie moyenne annuelle est 100 mm). De ce fait, l'impact des sécheresses dû à des pluies irrégulières sur les ressources hydriques nous oblige à protéger l'eau souterrain à cause de la principale source d'eaux pour la consommation et l'irrigation.

Dans le but de vise à fournir suffisamment d'informations sur la qualité des eaux souterraines en prélevant des échantillons d'eau dans des sites dispersés de notre zone d'étude pour évaluer la qualité physico-chimique des eaux en référence avec des normes marocaines et internationales (OMS), nous avons effectué, un suivi mensuel durant 6 moins.

Les résultats obtenus décrivent la situation préoccupante de l'état de la nappe phréatique, menacé particulièrement par les activités anthropiques.

Mots clés: Eau souterraine, Nappe phréatique, Qualité,Puits, Physico-chimie, Activités anthropiques..

SYNTHESIS AND CHARACTERIZATION OF HYDROCALUMITE CaAl-LDH-Cl MATERIAL FOR ULTRAFAST REMOVAL OF ACID RED 97 DYE

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ABSTRACT

Owing to its exceptional physical and chemical properties, layered double hydroxides (LDH) is highly recommended to many field of applications such as catalysis, additives in polymers, environmental treatments, medicine and so forth. In this framework a new serie of LDH called hydrocalumite (CaAl-LDH-Cl) was prepared by co-precipitation procedure at constant pH. This material differ from layered double hydroxide in that their main layer has well-ordered and has a well crystallize structure. The hydrocalumite material formed was characterized by X-ray powder diffraction, FTIR and UV spectroscopy.

The adsorption capacity of hydrocalumite prepared was investigated at different experiments conditions using acid red 97 as molecule model. This material has showed a good performance and expressive efficiency at the adsorption of AR97 dye. The adsorption equilibrium was reached after 10 min of contact and 593 mg/L of dye has removed, The AR97 adsorption follow the pseudo-second-order and suitable with freundlich isotherm model. The thermodynamic study indicated that the adsorption process is chemisorption, spontaneous, and exothermic process. These findings suggested that the CaAl-LDH-Cl could be regarded as a promising adsorbent for the removal of anionic dye in wastewaters.

Keywords: layered double hydroxide, hydrocalumite, acid red 97, adsorption

FATIGUE ANALYSIS TO OF EXCHANGER HEAT TUBE CASE

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ABSTRACT

The aim of this work is to predict the life fatigue of a heat exchanger subjected to variable thermo-mechanical loading. To achieve this object, we used the fracture mechanics model based on the continuous damage approach. This model takes into account the geometrical nonlinearity by the presence of a semi-elliptic crack [1-5] and the type of thermomechanical loading cyclic. The geometry studied in this manuscript is a cylinder carrying a semi-elliptical crack.

Initially, the structure under internal pressure is entirely at room temperature. The external surface of the cylinder is heated to a constant temperature, Tmax = 300 ° C. During the heating period, the temperature increases linearly from room temperature to the maximum temperature. Then it is kept constant during ulterior thermal cycles. The inner wall of the cylinder is cooled by forced convection during tempering and by free convection.

Keywords: thermo-mechanical loads, Finite Element, semi elliptic crack, Paris law, Damage, Linear Fracture mechanical

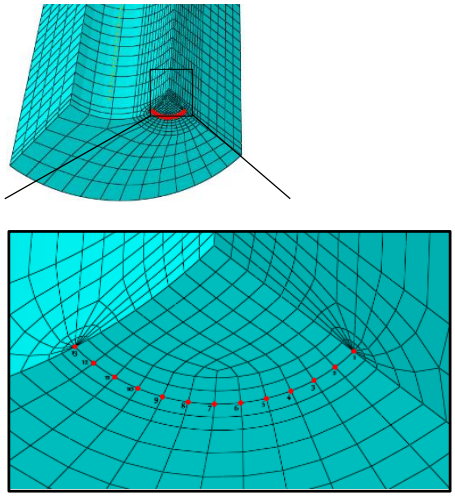

Figure 1: Study of the heat exchanger tube specimen

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IN SILICO DESIGN OF NOVEL PHENYLAMINOPYRIMIDINE (THIO) UREA DERIVATIVES AS CK2 INHIBITORS, USING 2D QSAR, MOLECULAR DOCKING AND ADMET PREDICTION

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ABSTRACT

QSAR studies have been carried out on 31phenylaminopyrimidine-(thio) urea derivatives, acting as anticancer agents using by the density functional theory (DFT) method. Quantum chemical descriptors were calculated using B3LYP method, with the basis set 6-31 G. The dataset was at random divided into training and test sets comprising 23 and 8 compounds, respectively in order to attain robust and reliable QSAR model. To check the validity of the selected models, a variety of validation tests were utilized: Internal validation analyses, and externally validation beside Y-randomization following the principles of the Organization for Economic Co-operation and Development (OECD) and the Golbraikh and Tropsha's criteria for the validation of QSAR models. The proposed model have been successful Finally, molecular docking analysis was carried out to the most representative compound in data set against protein casein kinase II alpha subunit (CK2) which identified by PDB ID: 4anm, to evaluate its binding affinity, wishing to attain potent anticancer agents in the future. Based on the proposed QSAR model, some novel compounds with higher anti-cancer activities have been theoretically suggested and analyzed by ADMET method. The established model can be helpful theoretical references for novel molecules prior to their synthesis.

Keywords: QSAR; Phenylaminopyrimidine-(thio) urea derivatives; Internal validation Externally validation ;Y-randomization ;Molecular docking ;ADMET prediction

PERCEPTIONS OF SMALLHOLDER FARMERS ON THE IMPACT OF COVID-19 ON AGRICULTURE AND AGROECOLOGICAL PRACTICES IN MOROCCO

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ABSTRACT

The spread of the COVID-19 pandemic has affected several fields of human life, including agricultural activities. This paper aims to understand the impressions of smallholder farmers in Morocco the potential impacts of COVID-19 on farming systems. Indeed, the empirical data come from a survey carried out with Moroccan agriculture. The results obtained revealed that 80% of the informants belong to smallholder farmers, and more than 83% adopt at least one of the agroecological practices such as the combination of crops and the use of organic fertilizers. In contrast, only 18.3 % among respondents have already been affected by the COVID-19 disease, in addition, more than 50 % of informants pointed out that COVID-19 has negatively influenced the normal course of their agricultural practices; significant majorities expressed concerns related to market closure, lack of customers and/or demand, etc. As for the relationship between the spread of COVID-19 and agroecological practices; although 54 % of farmers indicate that COVID-19 has not changed anything in terms of their dependence on agroecological practices, 41.1 % indicate that this dependency will increase after the COVID-19 crisis, see even the majority of agricultures surveyed suggest that the agroecological practices could be a very important part of our future agriculture. Ultimately, understanding the behavior of agriculture towards the global crisis will help to reshape future agricultural policies in favor of healthy and sustainable food production.

Keywords: Agro-ecological practices, COVID-19, Morocco, Smallholder farmers.

ANTIBACTERIAL ACTIVITY OF *CITRUS AURANTIUM* (L) PEEL EXTRACTS

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ABSTRACT

Citrus aurantium (L), known as bitter or sour orange, belongs to the Rutaceae family, and it is principally cultivated in different parts of the world, for its high resistance comparing to the other *Citrus* species. In addition to that, *C. aurantium* has a lot of uses and applications ; the fruit, seeds, peel and leaves, are widely used in medicine, food, beverages and flavoring factories, wheras its essential oil is generally used for frangrance, cosmetics and pharmaceutic applications.

The purpose of our work, is the valorization biologicaly of sour orange's peel, which is considered as waste generated after the fruit processing in huge quantities, which impacts negatively the environment. First, the peel extracts, obtained by soxhlet type-apparatus using solvents of increased polarity, were submitted to both of qualitative and quantitative phytochemical screening, to investigate their chemical composition. Second, the antibacterial activity of the samples was evaluated by well method on Muller-Hinton Agar (MHA), against four bacterias. The examination was performed by measuring their inhibition zone diameter in agar gel, of the bacterial growth around the discs, and gentamicin was used as positive control.

As a result, two extracts induced a significant inhibition activity against Pseudomoas aeruginosa, and that are Acetonic and hydroalcoholic extracts, which present a high flavonoids and phenolic contents as well.

Key words: *Citrus aurantium (L)*, Peel, Extract, Chemical composition, Antibacterial activity, Phytochemical screening.

ANTIBACTERIAL ACTIVITY OF *ARTEMISIA HERBA-ALBA* ON MULTIDRUG-RESISTANT BACTERIA

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ABSTRACT

Antibiotic bacterial resistance is a global and worrying problem that threatens humanity due to the excessive and uncontrolled use of antibiotics. The increase of this resistance requires the development of new therapeutic and preventive means.

The aim of the present study is to investigate the antibacterial potentialities of *Artemisia herba-alba* essential oil on extended-spectrum beta-lactamase-producing *Enterobacteria* (EBLSE) and ceftazidime resistant *Pseudomonas aeroginosa* (PARC). The agar diffusion method was used for susceptibility testing. Extended-spectrum beta-lactamase-producing *Enterobacteria* and ceftazidime-resistant *Pseudomonas aeruginosa* isolated from patients at the microbiology department of the Mohammed VI University Hospital Oujda were used. The essential oil of *Artemisia herba-alba* showed its ability to inhibit the growth of EBLSE with a diameter of 27 cm and PARC with a diameter of 15 mm.

The results of this study showed that the tested essential oil has an interesting antibacterial activity that can be related to the existence of Thymol and Carvacrol. Indeed, these compounds can be used for preventive or curative purposes in the face of this global challenge.

Keywords: Artemisia herba-alba Asso., Essential oil, MDR, Thymol, Carvacrol.

COMPREHENSIVE STUDY: MAINTENANCE OF PHOTOVOLTAIC SYSTEMS BASED ON ARTIFICIAL INTELLIGENCE

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ABSTRACT

Photovoltaic systems (PV) are seen as a game changer of the global energy system, dramatic cost reductions and the rapid expansion of production capacities have led to this perception. Not only the electricity sector, but also transport, heating, industry and chemical processes will be largely supplied by solar power in the future. This presents opportunities, but also challenges at the level of the energy system as well as for research and industry. At the end of 2021, around 600 GW of PV capacity will be installed worldwide. The dominant cost share of PV power plants and the investment costs have fallen by an average of around 13% per year since 2006, a total of 75%, thanks to technological progress, economies of scale and learning effects. Keeping PV plants at high levels of reliability without local monitoring and maintenance is a challenging subject, around 2% of PV modules fail after 11–12 years of operation. PV systems suffer from a wear-out failure scenario at the end of their working lifetime. In general underperformance is usually caused by failures on the arrays and inverters; Deterioration in PV array is mainly caused by dust, sand accumulation, mismatch, crack and aging of the PV modules while inverter faults are mainly due to overvoltage, overheating, and electrical damage[1]. The maintenance has been always a big concern for all the industrial actors, nowadays the developing technologies are given a huge opportunity to build a maintenance system more efficient and performing[2]. The key to successful maintenance is to build a system that can localize and correct any fault, responsible of reducing the performance of our asset. Thus, fault detection and diagnosis (FDD) are becoming a critical part of PV farms. Fault's detection, identification and localization can be sorted in three groups: Manual, Semi-Automatic and automatic methods[3].

In this work we will focus on the automatic methods, which employ monitoring systems and data recorder to collect data and build algorithms to verify and correct the operating system[4][5]. Artificial intelligence (AI) techniques are the center of these methods, through this work we will compare between some results of using the deep learning to maintain PV systems. The deep learning, a sub-discipline of the machine Learning, have recently made remarkable breakthroughs in many fields. The greatest AI successes are currently based on deep

neural networks (deep learning), where many artificial neurons are analyzed in several Process layers and provide the result at the output. Neural networks have a high level of expressiveness, in simple terms the ability to approximate any continuous function with many levels of precision. As a result, the training is often very data-intensive and time-consuming however, it is usually possible to adapt a network that has been extensively trained for a special task to a new task with little effort[6][7]. The most used types of deep learning in the energy domain are; Convolutional neural network (CNN), Long short term memory (LSTM) and finally the Generative adversarial network (GAN)[8][9][10]. All the reviewed papers shows a good accuracy, between 92% and 98% , and that confirms what we have presented about the strength of deep learning[11][12]. Most of the time the algorithms are defined for detection and classification and there are some of them which can localize and selfheal the fault, but there is lot of complexity and it needs lot of data. The proposed architectures can identify a maximum of three faults at the same time, frequently the faults are shading problems, delamination and physical defects on solar cells[13][14]. The input data goes from 1000 to 30 000 samples; IR images taken by drones, electro-luminance images, Voltage and current and power curves, the more your data is big , the more the results are reliable[15].

After reviewing these researches, we can conclude that the deep learning methods provide a very high accuracy especially when there is a big data to analyze. Furthermore, the results are more impressive when we combine the machine learning and deep learning methods. Deep CNN is the most used type of deep learning. As future work, we will try to build an intelligent system which can predict the fault and give recommendations to correct it if it is possible.

Keywords: Photovoltaic, Artificial intelligence, Machine Learning, Maintenance, Deep Learning

PERCEPTIONS OF SMALLHOLDER FARMERS ON THE IMPACT OF COVID-19 ON AGRICULTURE AND AGROECOLOGICAL PRACTICES IN MOROCCO

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ABSTRACT

The spread of the COVID-19 pandemic has affected several fields of human life, including agricultural activities. This paper aims to understand the impressions of smallholder farmers in Morocco the potential impacts of COVID-19 on farming systems. Indeed, the empirical data come from a survey carried out with Moroccan agriculture. The results obtained revealed that 80% of the informants belong to smallholder farmers, and more than 83% adopt at least one of the agroecological practices such as the combination of crops and the use of organic fertilizers. In contrast, only 18.3 % among respondents have already been affected by the COVID-19 disease, in addition, more than 50 % of informants pointed out that COVID-19 has negatively influenced the normal course of their agricultural practices; significant majorities expressed concerns related to market closure, lack of customers and/or demand, etc. As for the relationship between the spread of COVID-19 and agroecological practices; although 54 % of farmers indicate that COVID-19 has not changed anything in terms of their dependence on agroecological practices, 41.1 % indicate that this dependency will increase after the COVID-19 crisis, see even the majority of agricultures surveyed suggest that the agroecological practices could be a very important part of our future agriculture. Ultimately, understanding the

behavior of agriculture towards the global crisis will help to reshape future agricultural policies in favor of healthy and sustainable food production.

Keywords: Agroecological practices, COVID-19, Morocco, Smallholder farmers

MICROBIOLOGICAL AND PHYSICOCHEMICAL QUALITY OF PASTEURIZED MILK INTENDED FOR THE MANUFACTURE OF DAIRY PRODUCTS IN THE GHARB REGION OF MOROCCO

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ABSTRACT

Packaged pasteurized milk is the most consumed product because the finished product retains all the nutritional properties of raw milk. Thirty pasteurized milk samples of known brands purchased commercially and stored in a cold temperature were analyzed prior to being processed. The objective of this work is the assessment of the sanitary and hygienic qualities of pasteurized milk intended for the manufacture of dairy products. The microbiological analysis focused on total aerobic mesophilic flora (TAMF), total coliforms (TC), fecal coliforms (FC), and staphylococci. The analyzed physicochemical parameters were fat content, pH, titratable acidity and density. The results of microbiological analyses indicate a good milk quality and are in accordance with Moroccan standards in regards to: lack of TAMF at 30 ° C, TC at 37 ° C, FC at 44 ° C, and staphylococci at 37 ° C. These results are indicative of proper milk pasteurization. The results of physicochemical analyses are, in general, within intervals close to international standards for milk quality, with only the fat content being low on average, its value varies between 28 and 36 g / l with a standard deviation of 2.7. pH varies between 6, 4 and 6.8 with a standard deviation 0.114, Dornic acidity varies between 15 ° D and 19 ° D with a standard deviation of 1.006, and the density varies between 1.028 and 1.033 with a standard deviation of 0.001 which shows that the physicochemical parameters are quite stable. Pasteurized milk has a good microbiological quality while its physicochemical quality needs to be improved.

Keywords: pasteurized milk, Microbiology, Physicochemical

PROBLEM OF SOLID AND LIQUID WASTE FROM OLIVE OIL EXTRACTION AND ITS RECOVERY METHODS IN MOROCCO

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ABSTRACT

Morocco use mainly solar and wind energy to reduce energy needs, but there is also another energy source : biomass energy. The valorization of biomass can produce several forms of energy, it can be transformed to produce heat, electricity, biofuel, or biogas.

The biomass of the olive tree could constitute an alternative solution to solve the problem of the energy deficit, by allowing the production of a significant quantity of green energy.

The olive industry, which mainly produces olive oil, generates two types of residues: one is solid olive pomace and the other is liquid vegetable water. One tonne of olive produces 100 liters of wastewater, and 600 kg of pomace. These residues are among the biomasses that present environmental problems in most Mediterranean countries, they have a large organic load and phenolic compounds that make this waste highly toxic for ecosystems.

Several researchers have shown that the recovery of this waste can be achieved by fertilizing crops, Co-composting, combustion, germination of seeds, extraction of antioxidants and certain bioactive molecules or by the production of biogas. This biogas technology has been highly recommended by several researchers, this technique is not only a management and treatment technique, but also a method of producing renewable energy in the form of methane. For example, the methanization of wastewater from oil mills can generate 25 m3 of methane per tonne of olives converted into high thermal potential (1 GJ / tonne of olives).

This thesis project aims to show the appropriate application of anaerobic digestion technology in the management and energy conversion of solid and liquid waste during the olive oil production process in Morocco and in the eastern region.

Keywords: biomass, olive, pomace, valorization, biogas, vegetable water.

COMPUTATIONAL EVALUATION OF SOME UNSATURATED KETONE DERIVATIVES AS MAO-B INHIBITORS; APPLICATION OF QSAR,ADMETAND DOCKING STUDIES

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ABSTRACT

Unsaturated ketone derivatives are known as an inhibitor of monoamine oxidase B (MAO-B), a potential drug target of Parkinson's disease. Here, molecular modeling studies, including 2D-QSAR (two-dimensional quantitative structure-activity relationship), ADMET (adsorption, distribution, metabolism, excretion, and toxicity) prediction, molecular docking, and molecular dynamics (MD) simulation were performed on a new series of MAO-B inhibitors. The 2D-QSAR generated model was based on the descriptors of molecular operating environment (MOE) software. The most appropriate model, using partial least squares regression (PLS regression) method, revealed 0.88 as a value of the determination coefficient (r^2), 0.28 for the root-mean-square error (RMSE), and 0.2 for the mean absolute error. The predictive capacity of the generated model was evaluated by internal and external validations, which gave the Q^2 and R^2_{test} values of 0.81 and 0.71, respectively. The ability of a compound to be orally active was determined by using drug likeness and ADMET prediction. The results indicate that most of the compounds show moderate pharmacokinetic parameters without any side effects. In addition, the affinity between the ligands (Unsaturated ketone derivatives) and the MAO-B receptor was assessed by using molecular docking. Then, the best conformers were subjected to MD simulation. The generated work may pave the way to design and to synthesis new unsaturated ketone derivatives for inhibiting the MAO-B enzyme.

Keywords: MAO-B inhibitors; Parkinson's disease; ligand-based drug design; structure-based drug design.

CONDUCTING POLYMERS-BASED FILMS FOR CORROSION PREVENTION OF METALLIC FOOD PACKAGING

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ABSTRACT

Nowadays, food packaging has attracted enormous attention in human life. Indeed, to ensure food quality and safety, the selection of a packaging material that provides satisfactory protection of the packaged product is of great interest in the food industry.

In this context, metallic materials such as tinplate and aluminum can are commonly used as packaging elements due to their adaptable properties and their good gas barrier performance. Nevertheless, because of corrosion phenomena that could occur on the surface of these materials, especially in contact with an acidic or saline packaged product, numerous reports have indicated the great impact of using these metals on the environment which generates notable waste pollution.

The present report consists of using a well-known conducting polymer, namely polypyrrole (PPy) as a contact material in the food packaging industry. The high stability, low cost, good electrical conductivity, nontoxicity and simple experimental preparation justify the choice of such polymer in our study.

PPy was electrochemically synthesized on the surface of tinplate and aluminum can in various electrolytic media using cyclic voltammetry. The prepared films were characterized by scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). Besides, the anti-corrosion performance was studied in 3% NaCl solution by open circuit potential, electrochemical impedance spectroscopy and potentiodynamic polarization measurements.

Keywords: Conducting polymers; Electrosynthesis; food packaging; Corrosion.

BIOACCUMULATION OF METALS IN SEDIMENT AND MARINE SPECIES CAPTURED FROM THE AGADIR BAY, MOROCCO

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ABSTRACT

The coastline is currently considered the main axis around which cities and all socio-economic activities are structured in Morocco, with about 80% of the population and industrial activities concentrated there. This vital sector is now threatened, given the cost of coastal degradation which is increasing by more than 600 million dollars each year (according to the World Bank).

This work is focused on the evaluation of the coastal ecosystems quality in Agadir Bay, which is experiencing an increasing anthropization related to tourism, fishing and industrial activities in the region and the increase of discharges. Thus, metals are among the most important environmental pollutants, given their stability in the ecosystem, their ability to accumulate in biota and their transport through the food chain (Shahbaz et al., 2013; Sarmiento et al. 2016).

So, we were interested in the determination of three metals (Pb, Cd and Cu), and this in the sediment and two species of bivalve mollusks "*D. trunculus* and *S. plana*" characteristic of the sites of Agadir beach and Oued Souss estuary, in order to identify their potential usefulness as a bioindicator of pollution in aquatic systems. Thus a biometric study of the two species was started to highlight the existing correlation between the different morphometric characters of the individuals, through measurements and dissections of specimens of different sizes.

Keywords: Agadir Bay, Sediment, marine bivalves, metallic contamination.

MICROBACTERIM ARBORESCENS İLE PROTEAZ ÜRETİMİNİN MATEMATİKSEL MODELLENMESİ VE MODEL TAHMİNLERİNİN İSTATİSTİKSEL DEĞERLENDİRİLMESİ

MATHEMATICAL MODELING OF PROTEASE PRODUCTION BY MICROBACTERIUM ARBORESCENS AND STATISTICAL EVALUATION OF MODEL PREDICTIONS

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ÖZET

Proteazlar ticari enzim pazarında önemli bir yere sahiptirler. Gıda, tıp, farmakoloji, deterjan, deri, ipek ve atık su arıtma endüstrilerinde yaygın olarak kullanılmaktadırlar. Araştırmacılar, bu büyük talebi karşılamak için sürekli olarak mikrobiyal proteaz üretiminin verimini artırmak için çalışmaktadırlar. Ancak sadece üretim verimini arttırmak değil, aynı zamanda üretim parametrelerinin temsili ve modeller aracılığıyla kinetik tahmini de genel başarı için çok önemlidir. Bu çalışmada Gompertz (G), genelleştirilmiş Gompertz (GG), değiştirilmiş Gompertz (MG), yeniden değiştirilmiş Gompertz (RMG), lojistik (L), genelleştirilmiş lojistik (GL), değiştirilmiş lojistik (ML), yeniden modifiye edilmiş lojistik (RML), Richards (R), genelleştirilmiş Richards (GR), modifiye edilmiş Richards (MR) ve yeniden modifiye edilmiş Richards (RMR) modelleri Microbacterium arborescens ile proteaz üretimi için değerlendirilecektir. Modellerin temsili özelliklerini belirlemek için, ortalama-kare-hata, ortalama-mutlak-hata, belirleme katsayısı, eğim, yanlılık faktörü ve doğruluk faktörü gibi çeşitli istatistiksel değerlendirmeler hesaplanacaktır. En uygun model, gelecekteki daha yüksek hacimli üretimlerde kullanılacaktır.

Anahtar Kelimeler: Proteaz, Marin bakteri, Enzim üretimi, Modelleme

ABSTRACT

Proteases have an important portion in commercial enzyme market. They are widely used in food, medical, pharmacology, detergent, leather, silk, and wastewater treatment industries. Researchers are continuously working on increasing the yield of microbial protease production to keep up this big demand. Not only enhancing production yield but also representation of process trend and prediction of kinetics via models are also crucial for overall success. In this

study twelve nonlinear mathematical models including Gompertz (G), generalized Gompertz (GG), modified Gompertz (MG), re-modified Gompertz (RMG), logistic (L), generalized logistic (GL), modified logistic (ML), re-modified logistic (RML), Richards (R), generalized Richards (GR), modified Richards (MR), and re-modified Richards (RMR) will be evaluated for microbial protease production by *Microbacterium arborescens*. In order to determine the representative characteristics of the models various statistical evaluations such as root-mean-square-error, mean-absolute-error, coefficient of determination, slope, bias factor, and accuracy factor will be calculated. The best fitted model will be used in future higher scale productions.

Keywords: Protease, Marine bacteria, Enzyme production, Modeling

CONCEPTUAL CHANGE TEXTS SUPPORTED BY ANALOGY AND EXPERIENCE TO DEVELOP A QUALITATIVE UNDERSTANDING OF THE ELECTRICITY

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ABSTRACT

We aim to help the students to develop a qualitative understanding of electricity. To achieve this, we have designed and implemented an innovative approach based on analogy and experiment. We adopted the pre-experimental method with the design of a pre-test, a post-test and a group of 36 students. We examined and evaluated all possible types of learning progression by comparing students' conceptions identified in the post-test with their conceptions in the pre-test. The results showed that our approach helped the majority of students to improve their conceptual understanding of electricity..

Keywords: Analogy, Experience, Electricity, The conceptual understanding.

Acknowledgements

This work was supported by the Ibn Khaldoun program of the National Center of Scientific and Technical Research (CNRST) in the field of humanities and Social Sciences (Project No. IK/2018/24).

CODLING MOTH (CYDIA POMONELLA L.) IN APPLES: SURVEILLANCE AND INTEGRATED PEST MANAGEMENT IN ORCHARDS BIBLIOGRAPHIC REVIEW

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ABSTRACT

In Morocco, the Codling moth (Cydia pomonella L.) remains the most formidable pest in apple orchards. It causes significant damage to the fruit and leads to considerable economic losses for apple growers. In order to control this pest, farmers resort to the use of pesticides. In this review, we will highlight the climatic factors favorable to the reproduction and propagation of codling moth in apple orchards, as we will establish the integrated control strategies for this pest. We will placed the focus on good agricultural practices and biological control methods; with the aim of reducing the intensive and irrational use of pesticides, which pose considerable risks to human and animal health, and have a negative impact on the environment.

Keywords: Codling moth, apples, pesticides, climatic factors, integrated pest management, good agricultural practices.

EFFECT OF SUPPORTING ELECTROLYTE ON THE EFFICIENCY OF ELECTROCHEMICAL TREATMENT OF ORGANIC POLLUTANTS

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ABSTRACT

The treatment of wastewater containing residual dyes is a great environmental problem because synthetic dyes usually contains aromatic rings that make them harmful and biologically recalcitrant compounds. Furthermore, even low concentration of dyes in the effluents is a source of turbidity and non-aesthetic pollution and their discharge is particularly troublesome. Electrochemical Advanced Oxidation Processes (EAOPs) are a promising techniques for the treatment of organic pollutants. They can produce large amount of hydroxyl radicals under control of applied current.

The aim of this work is to study the effect of supporting electrolyte for the elimination of an anionic dye from water using EAOPs. Different combination of electrodes was investigated in an undivided electrolytic cell. Parameters studied were the concentration of the electrolyte, the applied current density, the nature of electrodes, the initial pH, and the dye concentration. The performances were monitored in terms of color and TOC removals, the current efficiency, and the energy consumption.

Keywords: Electrochemical Advanced oxidation processes; Dye; Degradation.

TRADITIONAL USES, BIOACTIVE PHYTOCHEMICALS AND PHARMACOLOGICAL ACTIVITIES OF ROCKROSE (CISTUS spp.) SPECIES

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ABSTRACT

Cistus species known as Rockrose belongs to Cistaceae family and these species are generally distributed in the Middle East Mediterranean (except France and Iberian Peninsula), North Africa and Western Asia. C. creticus L. (sinonim Cistus x incanus subsp. creticus (L.) Hetwood), C. salviifolius L., C. parviflorus Lam., C. monspeliensis L. and C. laurifolius L. species naturally grow in Turkey's flora. Leaves, flowers, seeds, resin and essential oils of rockrose species have economic, medical and industrial value and they have been used in traditional folk medicine as herbal tea infusions for laxative, stimulant, expectorant, treatment of stomach and rheumatic diseases as well as preventive and therapeutic against microorganism infections for centuries. These plants also contain a number of phytochemicals such as quercetin, myricetin, kaempferol, kaempferol-3-methyl ether, apigenin, luteolin, aesculin, flavan-3-ol and proanthocyanidin, and there are many scientific studies reporting their antioxidant, antiviral, antibacterial, antifungal, anticancer, anti-inflammatory, antispasmodic and antidiabetic activities. This review focuses on traditional uses, phytochemical compositions, pharmacokinetics, pharmacological and biological activities of Cistus species in the light of scientific literature.

Keywords: Cistus spp., rockrose, medicinal plant, phytochemical, Anatolian Folk Medicine

NATURAL PRODUCTS POSSESS BIOACTIVE AGENTS INVESTIGATED FOR ITS ANTICANCER POTENTIALITY

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ABSTRACT

The advancement in science and technology for discovering new drugs against cancer was found to be remarkable, yet the dispute remains ahead. The adverse effects of drugs led research on natural products with astonishing diverse chemical activity have been broadly examined for their promising anticancer actions more than a half-century. Although, cancer is been regarded as the most deadly malady affecting many lives in developed countries as well as developing countries. Moreover, cancer therapy with use of vaccines or chemotherapy is available but instead of inhibiting sometimes reversal of process of carcinogenesis occurs. However, over 60% of drugs are obtained from natural source only. The main signs and symptoms of cancer are inflammation, swelling, pain, weight loss, fatigue, and organ dysfunction. Nevertheless, many ignore these as minor or in fact non specific indications but in turn these minor symptoms now aggravate and termed as cancer. Therefore, our review article portrays about the bioactive compounds obtained from natural sources and how these traditional medicines acts as drug candidates against the devastating cancer disease worldwide. We will also give a clear picture on the molecular mechanism of anticancer drugs actions against the traditional medicines. Hence, an overview of natural products acting as chemopreventors or remedial agents of cancer is broadly highlighted.

Key words: Anticancer drugs, Cancer therapy, Natural Source, Inflammation, Traditional medicines

ADHERENCE TO VEGETARIAN DIET AND WEIGHT LOSS: A META-ANALYSIS

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ABSTRACT

Background

Veganism and vegetarianism, which are becoming popular worldwide, are not only a diet but a lifestyle, a philosophy of life, and an ethical approach. A vegetarian diet is thought to be the solution to the increasing food requirements of the growing population. In this meta-analysis, we evaluated the correlation between a vegetarian diet and weight loss.

Methods

For the meta-analysis, PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were followed. We conducted a comprehensive review of the literature published in PubMed, Science Direct, and ResearchGate databases. Only randomized controlled trials and cohort studies published after 2007 were included in the meta-analysis if they reported the results on weight loss and contained appropriate statistical analysis data.

Results

The meta-analysis included 11 studies comprising of 934 participants, of which 10 were randomized controlled trials, and 1 was a cohort study. Applying the random effects model, it was concluded that compliance with the various types of vegetarian diets had a positive effect on weight loss. The effect size of the relation between vegetarian diet and weight loss was 0.954. It is between the lower limit (0.393) and the upper limit (1.515) values for the effect sizes of the relevant studies in the 95% confidence interval. There was no publication bias as the circles (representing each study) shown in the Funnel plot graph were spread symmetrically around the vertical line in the middle.

Conclusions

The vegetarian diets (vegan and lacto-ovo vegetarian diets) had beneficial effects on weight loss. One possible reason responsible for weight loss could be the varied nutritional composition, for example, high fiber and low protein diet. However, further interventional studies with vegetarian diets are warranted to investigate their long-term effects and clinical implications on weight loss.

Keywords: Vegetarian diet, Weight loss, Meta-analysis.

ALTERNATIVE CONTROL TRIAL AND IDENTIFICATION OF LENTIL WEEDS IN MEKNES

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ABSTRACT

Morocco was one among the countries exporting lentils (*Lens culinaris*), but now it is an importer to cover the population needs, this transition due to seasonal fluctuations in yield and many factors such as weeds competition. Thus, the excessive use of herbicides has shown several disadvantages towards the environment and human health, also it can contribute to the appearance of resistant ecotypes. The present study was carried out at the National School of Agriculture of Meknes, to investigate the effects of some agro-ecological strategies (manual weeding, plant extract, solarization, and mulching) for weed management in lentil crop. The weed flora inventoried was very diverse with 17 different species, 3 monocotyledonous species and 14 dicotyledonous species) belonging to 10 botanical families. The agro-ecological treatments provided effective weed control compared to the control, especially solarization, mulching and manual weeding. As for the plant extract treatment, the weed control efficiency was lower than the other treatments but it did not show phytotoxic effects on the crop. It was concluded that, the agro-ecological practices tested in this study showed the highest yield and yield components of lentil crop compared to the weedy check.

Key words: Agro-ecology, *Lens culinaris*, mulching, weed, weed control.

FAULT DIAGNOSIS OF SINGLE PHASE INDUCTION MOTORS BASED ON ANALYSIS VIA CONVOLUTIONAL NEURAL NETWORKS OF SPECTRAL IMAGES PROCESSED BY DATA AUGMENTATION

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ABSTRACT

Single phase induction motors are at the top of the most preferred electric motors in many fields of industry. These motors are the most important reasons for preference which are low in cost compared to other motors, have a line-start feature and do not require maintenance. Due to the widespread use of these motors failures is also adversely affect the industry. In this study, fault diagnosis of single phase induction motors based on analysis of spectral images processed by data augmentation with convolutional neural networks is proposed. A experimental test bench was set up to detect broken rotor bar fault of a single phase induction motor. The current data belonging to both the good state and the broken rotor bar fault state of the motor are collected via this mechanism. These data, using the Short-Time Fourier transform are obtained separately from two spectral image files. These images created, which is a new dataset created from approximately 4000 images, were obtained by data duplication. This dataset was classified as healthy and faulty by processing in the designed Convolutional Neural Networks. It was observed that Short-Time Fourier Transform and data replication process achieved high success in classifying. Results from the analysis of experimental test data with the proposed diagnostic method have shown that Convolutional Neural Network is a powerful tool for diagnosing broken rotor bar fault of single phase induction motor.

Keywords: Single phase induction motor, Broken rotor bar fault, Convolutional Neural Networks

Z-SCHEME OXIDE/PANI HETEROJUNCTIONS WITH ENHANCED PHOTOCATALYTIC PERFORMANCE OF RHB UNDER VISIBLE LIGHT

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ABSTRACT

An oxide@PANI heterojunction photocatalyst with a various mass ratio of polyaniline to oxide was prepared using *in situ* deposition oxidative polymerization of aniline monomer in the presence of oxide powder. The composites were characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM-EDS), transmission electron microscopy (TEM), Fourier transform infrared spectroscopy (FT-IR), ultraviolet-visible diffuse reflection spectroscopy (DRS), X-ray photoelectron spectroscopy (XPS) and photoluminescence spectroscopy (PL). The photocatalytic activity of photocatalyst was evaluated by following the decomposition of the Rhodamine B (RhB) dye under visible light irradiation (λ >420 nm). The results evidenced high efficiency of the oxide@PANI (0.5 wt. %) nanocoposite in the photocatalytic degradation of RhB (90% within 120 min) under visible light illumination, which was 3.6 times compared to pure oxide. The superior photocatalytic performance of the oxide@PANI catalyst was ascribed to the wide absorption in the visible range and the efficient charge carrier separation.

Keywords: Polyaniline; Z-scheme heterojunction; Photocatalysis; Visible-light irradiation.

Acknowledgements

Jiangsu University acknowledges National Natural Science Foundation of China (Grants 51802126, 52072152) and Jiangsu Province Distinguished Professor Plan.