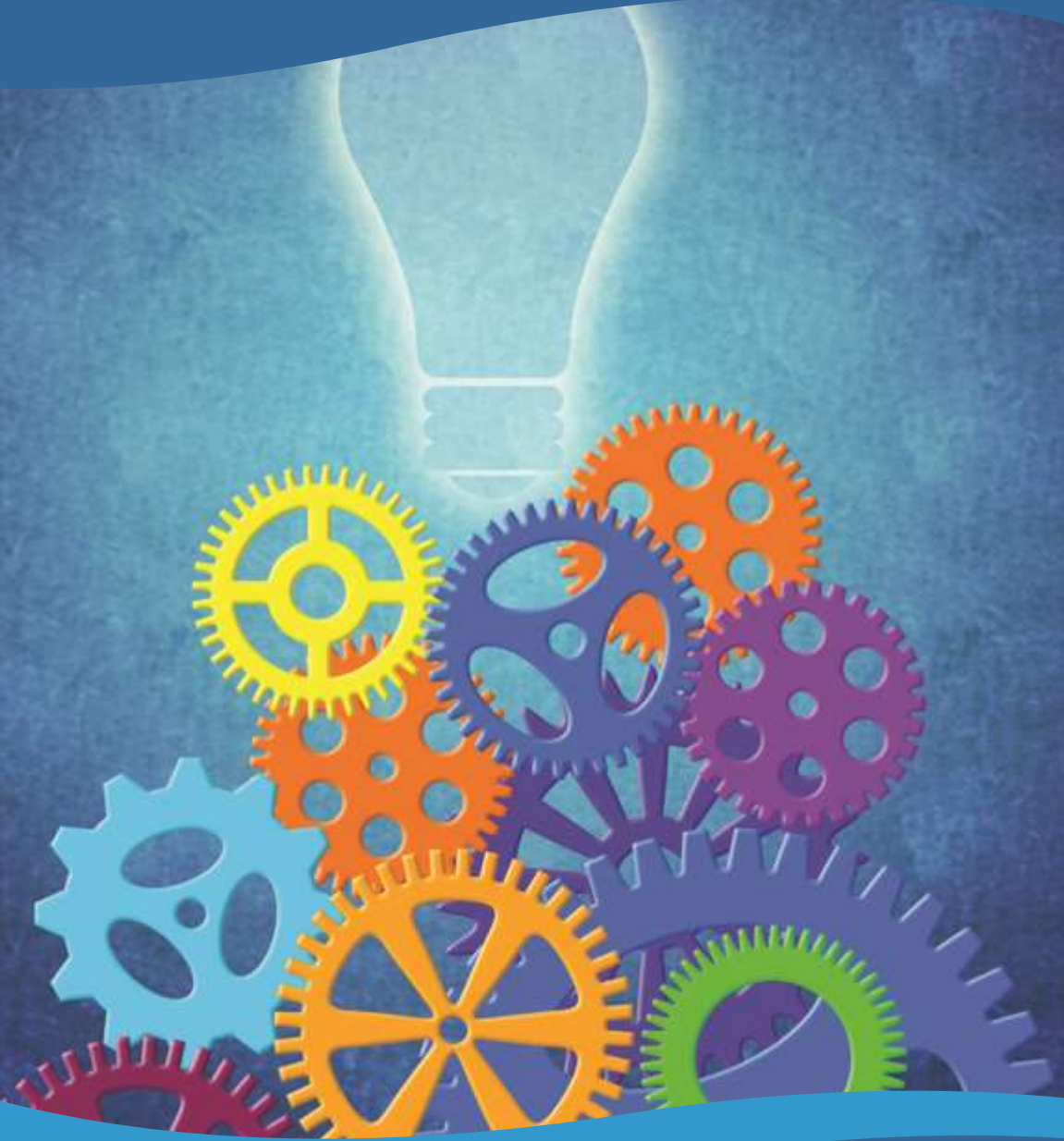


ICSIS 2024



**2nd International Conference on Scientific and Innovative
Studies ICSIS 2024**

April 18-19, 2024: Konya, Turkey

Abstract Book

ABSTRACT BOOK OF 2ND INTERNATIONAL CONFERENCE ON SCIENTIFIC AND INNOVATIVE STUDIES ICSIS 2024

ABSTRACT BOOK OF 2ND ICSIS 2024:

18 – 19 April 2024

Konya, Turkey

Publication date: 30.04.2024

Publisher: All Sciences Academy

Abstract Book of 2nd International Conference on Scientific and Innovative Studies ICSIS 2024

<https://as-proceeding.com/index.php/icsis/home>

2nd International Conference on Scientific and Innovative Studies ICSIS 2024: edited by All Sciences Academy.

ISBN: 978-625-6314-02-3

As this is a serial book published, it has ISBN. All abstracts were peer reviewed.

ISBN 978-625-6314-02-3

Printed in the Turkey with ISBN 978-625-6314-02-3

International Conference Website

<https://as-proceeding.com/index.php/icsis/home>

INTRODUCTION

We had the great honor of organizing the 2nd International Conference on Scientific and Innovative Studies ICSIS 2024. It was truly a great pleasure for us to greet a lot of participants from many different countries attending ICSIS 2024! We firmly believe that the conference will become an important international event in the field of cross-industry discussion about innovations in Academic Studies.

Three cooperating organizations supported the four-day conference. There were 352 papers accepted for presentation at ICSIS 2024, contributed from different countries. We had plenary speeches and several well-known scientists and experts, to give invited talks at different sessions.

The purpose of ICSIS 2024 was to provide a forum for the participants to report and review innovative ideas, with up-to-date progress and developments, and discuss novel approaches to the application in the field of their own research areas and discuss challenges of doing science.

We sincerely hope that the exchange of ideas on doing research, science and improving education will help the participants, and international cooperation sharing the common interest will be enhanced.

On behalf the Organization Committee of ICSIS 2024, we would like to heartily thank our cooperating organizations for all they have done for the conference. We would also like to thank the authors for their contribution to the proceedings; the participants and friends of ICSIS 2024, for their interest and efforts in helping us to make the conference possible; and the Editorial boards for their effective work and valuable advice, especially the ICSIS 2024 secretariat and the ICSIS 2024 staff, for their tireless efforts and outstanding services in preparing the conference and publishing the Proceedings.

Publisher: All Sciences Academy

TABLE OF CONTENTS

Introduction	I
Table of Contents	II
Conference Chairs	XV
Scientific Committees	XVI
Document of Academic Incentive	XVII
Document of International Conference	XVIII

Table List of Content				
Content of Abstract Papers				
Page No	Title	Authors	Country	Submission ID
1	Kullanıcı Yorumlarından Makine Öğrenmesi ile Emoji Kestirimi	Tuğba Tosun Patacı, Yaşar BECERİKLİ	Turkey, Turkey	Mail Submission 1
2	Water Sampling	Melek GÖKMEN KARAKAYA	Turkey	Mail Submission 2
3	MERGERS OF ENTERPRISES AND THEIR EFFECTS ON COMPETITION LAW	Inesa Adhami	Albania	Mail Submission 3
4	Significance and Potential of Bio-Renewable Liquid Fuels in the Energy Sector	Gizem Dedeoğlu, Zehra Gülten Yalçın, Mustafa Dağ	Turkey, Turkey	Mail Submission 5
5	Study of the Behavior of Perlite-Based Concrete in Aggressive Environments	Ahlem Houaria Mohammed Belhadj, Rachid Derbal	Algeria, Algeria	Submission 1
6	Emerging Applications of Nanotechnology: a review of applied science studies	Oussama Zaidi	Algeria	Submission 2
7	Estimation of Dynamic Parameters for Structural Health Monitoring of Strategic Structures Subjected to Earthquakes	Rachid Derbal, Nassima Benmansour, Naoual Djafour, Abdellatif Bentfour and Abderaouf Daci	Algeria, Algeria, Algeria, Algeria	Submission 3
8	Evaluation of the influence of the spatial variability of soil characteristics on the estimation of seismic excitation according to ground classifications of seismic codes	Rachid Derbal, Nassima Benmansour, Ahlem Houaria Mohammed Belhadj	Algeria, Algeria, Algeria	Submission 4
9	Global Innovations in Neo-Vernacular Sustainability: A Comparative Study	Fouzia Meliouh, Adel Sekhri, Khalissa Hamel, Mohamed Yahia Amran Necib, Faten Ghanemi, Soumaya Makhoulfi, Manel Nasri	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 5
10	Scalable Coherent Fabric in Multi-core RISC V Systems	Kim Ho Yeap, Lean Sheng Tan and Yu Jen Lee	Malaysia, Malaysia, Malaysia	Submission 6
11	Evolution of Machine Learning in Mathematics: A Bibliometric Analysis	Oussama Zaidi	Algeria	Submission 7
12	Model Order Reduction Second Order Systems using a Second Order Arnoldi Method with Stopping Criterion and Reduced Order Selection	Abdesselam TAMRI	Algeria	Submission 8
13	Model Order Reduction, A novel method using Krylov sub-spaces and Genetic Algorithm	Abdesselam TAMRI	Algeria	Submission 9
14	Photoluminescence Response and Opto-Electrical Properties of Sol-Gel Synthesized ZnO Thin Films	Azqa Farrukh Butt, Saira Riaz and Shahzad Naseem	Pakistan, Pakistan, Pakistan	Submission 11
15	IMMUNOLOGICAL PROTECTIVE EFFICIENCY OF INCORPORATED MONOVALENT FEED BASED VACCINE WITH DIFFERENT PLANT BASED ADJUVANT AGAINST Aeromonas hydrophila IN COMMON CARPS (Cyprinus carpio)	Saba Ishaq, Farzana Abbas, Hafeez-ur-Rehman, Saba Sana, Nimra Mubeen, Samama Jalil	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 15
16	DEVELOPMENT OF FEED BASED MONOVALENT VACCINE TO ENHANCE THE IMMUNITY OF CTENOPHARYNGODON IDELLA AGAINST AEROMONAS VERONII	Muniza Mahrukh, Farzana Abbas, Hafeez-ur-Rehman, Saba Sana, Nimra Mubeen, Samama Jalil, Amina Shafiqe	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 16
17	EFFECTIVENESS AND IMMUNE RESPONSE OF MONOVALENT SPRAY BASED FEED VACCINE USING ALOE VERA AND PALM OIL AS ADJUVANT AGAINST Aeromonas hydrophila IN COMMON CARP (Cyprinus carpio)	Rehana Kausar, Farzana Abbas, Hafeez-ur-Rehman, Saba Sana, Nimra Mubeen, Samama Jalil, Maria Tayyaba	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 17
18	SYNTHESIS, CHARACTERIZATION AND EVALUATION OF PHOTOCATALYTIC ACTIVITIES OF Co3O4-rGO FOR PHOTODEGRADATION OF DYES	Muhammad Saeed, Asif Nisar	Pakistan, Pakistan	Submission 21
19	The Transformative Influence of Artificial Intelligence in Healthcare and the Obstacles in Novel Drug Development: A Focus on Glibenclamide	Hassina Fisli, Mohamed Lyamine Chelaghmia	Algeria, Algeria	Submission 23
20	Green Hemi-synthesis and Machine Learning-Based Prediction of Anti-Tumor Activity of Novel Chromeno-Pyrimidine Derivatives	Ramzi Maadadi, Rafik Menacer, Liza Saher, Zahia Kabouche, Khaldoun Bachari	Algeria, Algeria, Algeria, Algeria, Algeria	Submission 25

21	Machine Learning-Based Prediction of De Novo Active Molecules on K562 Leukemia Cell Line Using a Random Forest Model	Menacer Rafik, Maadadi Ramzi, Boucheikioua Saad and Meliani Saida	Algeria, Algeria, Algeria, Algeria	Submission 27
22	Analysis of Two SRMs at the Same Power Density Per Volume using ANSYS/Maxwell	Bekir Gecer, N. Fusun Oyman Serteller, Alper Nabi Akpolat	Turkey, Turkey, Turkey	Submission 34
23	The courtyard concept in neovernacular housing architecture of arid regions: between tradition and modernity. A case study of Biskra region	Fouzia Meliouh, Mohamed Yahia Amran Necib, Adel Sekhri, Khalissa Hamel	Algeria, Algeria, Algeria, Algeria	Submission 38
24	Mechanical and Anti-corrosive Properties of Electrodeposited Nickel Coatings Reinforced with Al ₂ O ₃ Nanoparticles	Katia Nasri, Nadia Ait Ahmed, Hamida Issaadi and Nabila Aliouane	Algeria, Algeria, Algeria, Algeria	Submission 40
25	First principle study of structural, electronic and magnetic properties of 3d TM doping on MnI ₃ monolayer: application in data storage and spintronic devices	Norelhouda Salah, Hakima Yahi	Algeria, Algeria	Submission 41
26	Electronic and magnetic properties of 2D Chromium trihalides CrX ₃ (X= I, Cl, Br, F) monolayers: within GGA and GGA+U framework	Norelhouda Salah, Hakima Yahi	Algeria, Algeria	Submission 42
27	Systematic study of electronic and magnetic properties of Vanadium trihalides monolayers VX ₃ (X= Cl and I) with unusual Dirac half-metallicity and a robust ferromagnetism	Norelhouda Salah, Hakima Yahi	Algeria, Algeria	Submission 43
28	Heat Wave and the future risk in urban areas	Tanja Porja, Margarita Ifti	Albania, Albania	Submission 44
29	Valorization and characterization of spirulina (<i>Arthrospira platensis</i>)	SAADA Zakia, CHAREF Nassira, TAMER Fatma Zohra, BLAID Bouthayna, ELLEUCH Jihen, NASRI Hicham	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 46
30	Investigation of the structural and optoelectronic properties of 1D Van der Waals heterostructures of single-walled carbon nanotubes encapsulating linear carbon chains: Towards new 1D hybrid materials for higher efficiency and stability	Soufiane Elhadfi, Jamal Chenouf, Brahim Fakrach, Hassane Chadli	Morocco, Morocco, Morocco, Morocco	Submission 47
31	Human Instance Segmentation Based on Omega-Shape Using Deep Learning	Huma Sheraz, Zuhaib Ahmed Khan and Muhammad Awais	Pakistan, Pakistan, Pakistan	Submission 48
32	Introducing Large Language Models in Communication and PR Education: A Mixed Methods Pilot Study	Sebastian Fitzek, Bârgăoanu Alina	Austria, Romania	Submission 50
33	Shaping Future Practices: Understanding the Perception of German-speaking Medical and Dental Students of Artificial Intelligence – an Online Survey	Sebastian Fitzek, Kyung-Eun (Anna) Choi	Austria, Germany	Submission 51
34	An investigation into the adsorption of methylene blue dye using activated carbon made from leftover palm fiber	Mecheri Razika, Bemenine Abdelkader, Saidat Mustapha, Zobeidi Ammar, Atia Salem	Algeria, Algeria, Algeria, Algeria, Algeria	Submission 57
35	Harnessing Sewage Sludge for Sustainable Concrete Manufacturing	BOUSLAH Mahmoud, MAZA Mekki, RAHMOUNI Zine EL Abidine and TEBBAL Nadia	Algeria, Algeria, Algeria, Algeria	Submission 58
36	The utilization of macrophyte in the biocontrol of cyanotoxins	Tamer Fatma Zohra, Charef Nassira, Zaidi Hadjer, Nouri Nada, Belaid Boutheina, Saada Zakia, Nasri Hichem	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 60
37	Effects of magnetic field on double-diffusive natural convection in NEPCM filled a square cavity	Nesrine Rachedi, Messaoud Guellal	Algeria, Algeria	Submission 61
38	Study the adsorption of various organic dyes of aqueous solutions using local mineral clay	Mecheri Razika, Zobeidi Ammar, Atia Salem, Bemenine Abdelkader, Saidat Mustapha, Hafad Yacine	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 62
39	A SUPERVISED LEARNING APPROACH WITH RESIDUAL ATTENTION CONNECTIONS	Hamza Ali, Fazal Muhammad, Talha Ali, Muhammad Ismail	Pakistan, Pakistan, Pakistan	Submission 63
40	Efficacy of Mindfulness-Based Stress Reduction on Mental Health in Patients with Coronary Artery Disease: A Systematic Review of Randomized Controlled Trials	Imtiyaz Alim Mir, Syeda Humayra, Tee Rong Yuen and Anil T Jogn	Malaysia, Malaysia, Malaysia, Malaysia	Submission 66
41	Ejection system for the operation of oil wells	Oleksandr Panevnyk, Andriy Smerechuk	Ukraine, Ukraine	Submission 68
42	Blowing-up solutions for time-fractional Generalized Kuramoto-Sivashinsky Equations on a bounded domain	Abdelatif Boutiara	Algeria	Submission 70
43	Influence of the Addition of PVC Residue Chips and Polypropylene Fibers on the Thermal Insulation Properties of Concrete	Rafik El Arslene DRA, Zahira CHAIEB	Algeria, Algeria	Submission 71
44	ADOLESCENCE AND ALL ITS BEAUTY AND TRAUMA	Jovanka Denkova	North Macedonia	Submission 72
45	Bearing Fault Diagnosis Based on Machine Learning model	Yahia Bousseloub	Algeria	Submission 73
46	Gamification-Based Learning as The Future of Language Learning: An Overview	Lynda DALI YOUCEF	Algeria	Submission 74
47	Nickel and Copper Electrochemical Deposition for Silicon Photovoltaic Metallization	Yahia Bousseloub, Soundous Bousseloub	Algeria, Algeria	Submission 75

48	The left invariant Lorentzian metric g_2 on Heisenberg group H_3 of dimension three and their numerical range	MENAD Bendehiba, DERKAOU Rafik, BOUICH Khalef	Algeria, Algeria, Algeria	Submission 76
49	Numerical Analysis of Dam Stability by the Finite Element Method	Taleb Hosni Abderrahmane, Cheriet Fayssal, Guemidi Ismahene, Charak Hicham	Algeria, Algeria, Algeria, Algeria	Submission 77
50	The Killing vector fields on the oscillator group of dimension four	DERKAOU Rafik, MENAD Bendehiba, BOUICH Khalef	Algeria, Algeria, Algeria	Submission 78
51	Production Of Organic Fertilizer From Microalgae Cultivation	Charef Nassira, Tamer Fatma Zohra, Saada Zakia, Belaid Boutheina, Bougueroua Karima, Nasri Hichem	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 79
52	Exploitation and valorization of dune sand for the development of a new construction material	GUERMITI Laid, Hadji Ben salah, Hani Mostefa, BENTEBBA Mohamed Tahar	Algeria, Algeria, Algeria, Algeria, Algeria	Submission 81
53	Magnetocrystalline anisotropy of binary system	R. Masrour	Morocco	Submission 84
54	Magnetocaloric effect of the Polyphenylene Dendrimers	R. Masrour	Morocco	Submission 86
55	ASYMPTOTIC ANALYSIS OF A DYNAMIC FLOW OF THE BINGHAM FLUID	Abdelkader Saadallah	Algeria	Submission 94
56	The Relationship Between Labor Market Migration and Human Capital in Albania	Lindita Kiri	Albania	Submission 98
57	Vector Control of Induction Motor Using Type-1 Fuzzy Logic Controller	Abdelghafour HERIZI, Abdelhafid BENYOUNES, Fayssal OUAGUENI, Ahcene ABED	Algeria, Algeria, Algeria, Algeria	Submission 99
58	Optimizing High Density Polyethylene Performance: Utilizing Diatomite Filler and an Innovative Reversible Crosslinking Agent	Abdelbasset Abdessamad REGUIG, Said BOUHELAL, Rachida DOUFNOUNE	Algeria, Algeria, Algeria	Submission 100
59	Cümleden Emoji Kestirimi	Tuğba Tosun Patacı, Yaşar BECERİKLİ	Turkey, Turkey	Submission 101
60	Assessment of Coagulation-Flocculation Coupled with UV/Ultrasound-Activated Persulfate/Hydrogen Peroxide for Landfill Leachate Remediation	Hamza Bellouk, Imane El Mrabet, Karim Tanji, Mostafa Nawdali, Hicham Zaitan	Morocco, Morocco, Morocco, Morocco, Morocco	Submission 102
61	Advancing Sustainable Leachate Management: Integrating Biological Treatments and Advanced Oxidation Processes	Hamza Bellouk, Imane El Mrabet, Mostafa Nawdali, Hicham Zaitan	Morocco, Morocco, Morocco, Morocco, Morocco	Submission 103
62	Comparing energy and exergy performance of solar air heater with corrugated and flat absorbers	Noureddine Embarek, Hocine Guellil, Abdelillah Nabil Korti, Djahida Mahmoudi	Algeria, Algeria, Algeria, Algeria	Submission 104
63	Exploring the Impact of Diatomite Filler and Reversible Crosslinking Reaction agent on Isotactic-Polybutene Performance	Abdelbasset Abdessamad REGUIG, Said BOUHELAL	Algeria, Algeria	Submission 107
64	Impact of an avermectin (Emamectin benzoate) on the renal activity of the Wistar rat	CHELBI Narimene, MALLEM Leila	Algeria, Algeria	Submission 109
65	A Historical Insight into the Turkish Management and Organization Tradition: Nizam al-Mulk and Siyasatnama	Caner Asbaş	Turkey	Submission 113
66	Hole-meadow vegetation type spreading in the territory of Astara region (Azerbaijan)	Sanubar Aslanova	Azerbaijan	Submission 115
67	Psammophyte vegetation type distributed in Astara region (Azerbaijan)	Sanubar Aslanova	Azerbaijan	Submission 116
68	Development of a Higher-Order Shear Deformation Theory for Functionally Graded Plates	Madjda CHENAFI, Messaoud BOUREZANE, Taqiyeddine ASSAS, Seyfeddine BENABID	Algeria, Algeria, Algeria, Algeria	Submission 117
69	A nonlinear mathematical model on the dynamical study of a fractional-order crop-pest model	Mohamed HELAL, Abdelkader LAKMECHE, Nacera HELAL, El Arbi Miloudi	Algeria, Algeria, Algeria, Algeria	Submission 122
70	Isolation, identification and aggressiveness characterization of Fusarium spp. associated with crown rot and Fusarium head blight in Algerian wheat	Bouanaka Hamza, Bellil Ines, Khelifi Douadi	Algeria, Algeria, Algeria	Submission 124
71	Existence results for systems of second-order impulsive differential equations	Halima Kadari, Horiya Kouadri Habbaze	Algeria, Algeria	Submission 126
72	Linear time-varying dynamic-algebraic equations via the proportional fractional derivative	Canan Yanılmaz, Tuba Gulsen	Turkey, Turkey	Submission 133
73	Improving the Diagnosis of Chronic Kidney Disease through Machine Learning Classifiers	Muhammad Ismail, Muhammad Saad, Yaqoob Khan, Hazrat Bilal, Abrar Ali Shah, Abdul Baseer, Jouhar ud din	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 134
74	Navigating Process Mining: A Case study using pm4py	ALI JLIDI, LÁSZLÓ KOVÁCS	Hungary, Hungary	Submission 135
75	Prevalence of Strongylus spp infection in donkey's population from Gjirokastra district, Albania	Ilir Dova, Rezart Postoli, Dhimitër Rapti, Majlind Sulce, Enkeleda Ozuni	Albania, Albania, Albania, Albania, Albania	Submission 139
76	Ball bearing Remaining Useful Life estimation using the Support Vector Regression and the Principal Components Analysis	Riadh Euldji, Mouloud Boumahdi, Mourad Bachene, Euldji Rafik	Algeria, Algeria, Algeria, Algeria	Submission 140

77	Ball bearing health monitoring using the Support Vector Regression and the Decision Tree Approach	Riadh Euldji, Mouloud Boumahdi, Mourad Bachene, Euldji Rafik	Algeria, Algeria, Algeria, Algeria	Submission 141
78	Comparative Analysis of Transmission Line Models Across Varying Lengths: A Comprehensive Study on Relative Comparison in Terms of Current, Voltage, Power, Loss, Regulation and Efficiency	Cemil ALTIN	Turkey	Submission 151
79	Purification, Applicability and Characterization of the Natural Algerian Clay for Anionic Dye Removal: Kinetic, Isotherm and Thermodynamic Studies	Atia Djamel, Zobeidi Ammar, Besserni Rabia, Mecheri Razika	Algeria, Algeria, Algeria, Algeria	Submission 152
80	Investigating the possibilities of using bipolymers nowadays.	Annamaria Polyákné Kovács, Vivien Konyhás	Hungary, Hungary	Submission 156
81	Thermoanalytical testing of engineering plastics	Annamaria Polyákné Kovács, Tamás József Szabó	Hungary, Hungary	Submission 157
82	The influence of cutting tool wear On IT for AS13	Mohamed RAHOU	Algeria	Submission 158
83	PROTECTIVE EFFECT OF SAPONIN RICH EXTRACT AGAINST ROS IN PANCREATIC β CELLS	Anfel Benmansour, Fatma Zahra Hab, Rania Derguine, Rechda Amel Tachour, Mustapha Tacherfiout, Bachra Khettal, Malek Rezgui, Widad Sobhi	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 162
84	Green weapon,the Allelopathic potential of Essential oils for weed suppression	Soltane Sabrine, Benmeddour Tarek	Algeria, Algeria	Submission 164
85	A Decision Tree Approach for Detecting and Classifying Rolling Element Bearing Faults in Asynchronous Machines	Abdelhafid BENOYOUNES, Abdelghafour HERIZI, Riyadh ROUABHI, Fayssal OUAGUENI	Algeria, Algeria, Algeria, Algeria	Submission 165
86	Uncovering the Anti-inflammatory Potential of Phosphonamides: A Comprehensive Study on Molecular Docking, DFT, and ADMET Analysis for the Development of Novel Therapeutic Agents	Dehmchi Djenet Amel, Bouchareb Fouzia, Berredjem Malika	Algeria, Algeria, Algeria	Submission 168
87	Eco-Friendly Synthesis of Novel organometallic Complexes Using Bis(phenylamino)phenylphosphine oxide and Bis(tert-butylamino)phenylphosphine oxide	Dehmchi Djenet Amel, Bouchareb Fouzia, Berredjem Malika	Algeria, Algeria, Algeria	Submission 169
88	Inequality And Social Protection Policies (The Case of Albania)	Lindita Kiri	Albania	Submission 173
89	Enhancing hydrogen recovery in methanol sono-pyrolysis: The influence of methanol concentration under an argon atmosphere	Aissa Dehane, Slimane Merouani, Atef Chibani	Algeria, Algeria, Algeria	Submission 174
90	Planktonic communities of Lake Cadagno, Piora Valley	Stela Ruci, Eni Hoxha, Anisa Toska, Shpëtim Vata	Albania, Albania, Albania, Albania	Submission 175
91	Enhancing the efficiency of solar cell based graded perovskite absorber: SCAPS-1D software	A. YOUSFI, O. SAIDANI	Algeria, Algeria	Submission 177
92	Food Insecurity: A Study on Drivers, Dimensions, and Challenges	Addala Benmehdi	Algeria	Submission 178
93	Modeling of thermal deformation of concrete at different curing temperatures using two-phase composite material models	Farid Bouziadi, Nefissa Belkacem, Touhami Tahenni, Abdelkader Haddi, Bensaid Boulekbache, Mostefa Hamrat	Algeria, Algeria, Algeria, France, Algeria, Algeria	Submission 181
94	Varying Base Pressure and Groundwater Level Effect on Settlement of Clayey Soil Under Circular Loading	Emrah Dağlı	Turkey	Submission 186
95	Ultrasound Water Bath and Ultrasound Probe Assisted Phenolic Extraction From Red Beet Peels: Investigation of Their Anticancer Activity in Colon Cancer Cells	Tuğçe KARADUMAN YEŞİLDAL	Turkey	Submission 187
96	Exploring the Anti-inflammatory Properties of Phosphonamides: A Docking Study for the Development of Novel Therapeutic Agents	Dehmchi Djenet Amel, Bouchareb Fouzia, Berredjem Malika	Algeria, Algeria, Algeria	Submission 190
97	Optoelectronic Properties and Device Performance of pérovskite inorganique Solar Cells: A Simulation Approach	Abdelkader Bouhenna, Kada BOUALEM, Nabil Beloufa, Soufi Hadjer, Aboubakr seddik kebaili	Algeria, Algeria, Algeria, Algeria	Submission 191
98	Removal of pharmaceuticals micropollutants by Zn/Al layered double hydroxide from water: Kinetics and equilibrium studies	Ghemit Rima, Makhloufi Abdessalem, El koli Meriem	Algeria, Algeria, Algeria	Submission 192
99	Determination of the level of lead in tissues of Mediterranean mussels from the Shëngjin coast, Albania	Egon Andoni, Lek Prendi, Enkeleda Ozuni, Blerina Luke	Albania, Albania, Albania, Albania	Submission 195
100	The Rock Art of Neolithic Man at Ain Al-Naqah, Djelfa: A Glimpse into the Past	Alala Saihi	Algeria	Submission 198
101	The self-compacting concrete (SCC) formulation methods and their effect on the physico-mechanical properties of an experimental study	Rachid Rabehi, Mohamed Rabehi, Mohammed Omrane, Ouassila Bahloul, Said Zaouai, Mohamed Amieur	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 199
102	Modern Teaching Strategies and Methods in Education	Brahim Belhaouari Toufik, Romana Aissa, Zerrouit Ali	Algeria, Algeria, Algeria	Submission 200
103	The waste of plastic in building materials	Hammache Soumia, Belmouhoub Amer	Algeria, Algeria	Submission 201
104	Pharmacoeconomic analysis cost-effectiveness of cosmetic ingredients	Neli Markova, Stefka Valcheva-Kuzmanova	Bulgaria, Bulgaria	Submission 202

105	Influence of fly ash powder in rheological behavior of ecofriendly concrete	Hamza SOUALHI, Salim SAFIDDINE, Akram Salah Eddine BELAIDI, El-Hadj KADRI, Tien-Tung NGO, Lynda Amel CHAABANE	Algeria, Algeria, Algeria, France, France, Algeria	Submission 203
106	Determining the structure of a single crystal thiourea derivative compound involves a combined approach that utilizes both computational and experimental methods, incorporating analyses of electronic properties	Nour Eddine Benharkat, Abdelkader Chouaih, Nourdine Boukabcha	Algeria, Algeria, Algeria	Submission 204
107	Dynamic behavior of carbon nanotube reinforced porous beam employing the first shear deformation theory	DJILALI DJEBBOUR Kenza, NEBAB Mokhtar, AIT ATMANE Hassen, BENNAI Riadh, Sallai Hind Hidayet	Algeria, Algeria, Algeria, Algeria, Algeria	Submission 211
108	LAPAROSCOPIC SURGERY IN THE MANAGEMENT OF UNUSUAL LOCALIZATION OF ECHINOCOCCOSIS	Assia Haif, Djelloul Achouri, Meryem Benmarce	Algeria, Algeria, Algeria	Submission 212
109	Laparoscopic management of cysts mimicking hepatic cystic Echinococcosis in children (A case series)	Assia Haif, Djelloul Achouri	Algeria, Algeria	Submission 213
110	Sustainable Waste Management Strategies for Mitigating Pollution and Promoting a Circular Economy	Abderrahime BHAR, Salma SAKINI, Saloua JEMJAMI	Algeria, Algeria, Algeria	Submission 214
111	Decoding the Facebook Equation: Unraveling the Impact on Students' Psychological Well-being and Educational Journey	Ghulam Safdar, Mahnoor Bibi	Pakistan, Pakistan	Submission 216
112	PLASTIC PERIL: THREATS TO CAMEL BIODIVERSITY AND ECOSYSTEMS IN THE ARABIAN PENINSULA	DJEDDI Khaled, HOUSOU Hind, OUCHTATI Dounia, DJEDDOU Benabid Amira	Algeria, Algeria, Algeria, Algeria	Submission 221
113	A Pilot Study of Post-Partum Hemorrhage's Risk in Sétif, Algeria	Romya Bourouba, Safia Djellid, Hadil Sid, Farida Djabi	Algeria, Algeria, Algeria, Algeria	Submission 223
114	Essential oil of Mentha spicata leaves from Algeria : chemical composition and antibacterial activity	Khiari Mohame, Kechrid Zine	Algeria, Algeria	Submission 224
115	Some Features of the Color-singlet Quark-Gluon Plasma with the Contribution of Different Terms to the Density of States Used in the Projection Method	Amal Ait El Djoudi, Hayet Sahi	Algeria, Algeria	Submission 225
116	Effect of fibers on the mechanical strength and durability performance	Ibrahim HichamBakhti, Omar Taleb, Ahmed Soufiane Benosman, Assia Djerbi	Algeria, Algeria, Algeria, France	Submission 226
117	Machine Learning-Based Classification of Partial Discharge Signals for Power Asset Condition Monitoring	Mohammed Ayoub Sahnoune, Boubakeur ZEGNINI, Tahar SEGHIER	Algeria, Algeria, Algeria	Submission 231
118	Machine Learning Techniques for Software Fault Prediction: A Distinctive Systematic Literature Review	Aleena Rafique, Sania Bhatti	Pakistan, Pakistan	Submission 232
119	Use of fly ash in the manufacture of ceramics to improve several properties	BAALI Saad, MAZA Mekki, RAHMOUNI zine EL Abidine, TEBBAL Nadia	Algeria, Algeria, Algeria, Algeria	Submission 235
120	The influence of stiffeners on the behaviour of the T-stub in bolted joints	BOUBEKRI Amel, RAS Abdelouahab, BOUMECHRA Nadir	Algeria, Algeria, Algeria	Submission 236
121	Proving the Existence of Solutions for Fractional-Integro Differential Equations with Deformable Derivative in Banach Spaces	Bellabes Zineb, Naima Boussekine	Algeria, Algeria	Submission 238
122	Effect of using demolition waste in concrete formulation	Ben Ammar Ben Khadda	Algeria	Submission 244
123	Preparation and Characterization of Cementitious Matrix Composites Reinforced with Malva (Malva sylvestris) Fibers	YALAOUI Kattia, ZEMBOUAI Idris, KACI Mustapha	Algeria, Algeria, Algeria	Submission 245
124	Investigating the Impact of CaCO3 Mineral Filler Incorporation on Mechanical Properties of HDPE Semi-Crystalline Matrix	Hadda BENACEUR, Fatma Zohra BENABID	Algeria, Algeria	Submission 250
125	The Computational Studies of a Novel Benzimidazole Derivative, its Crystal Structure, and Hirshfeld Surface Analysis	Khaled Drim, Youcef Megrouss, Mokhtaria Drissi	Algeria, Algeria, Algeria	Submission 253
126	Optimizing Poultry Feeds: Influence of Processing Techniques on Soybean Protein Utilization and Amino Acid Availability	Muhammad Umair Asghar, Qurat Ul Ain Sajid, Martyna Wilk, Mariusz Korczyński	Poland, Poland, Poland, Poland	Submission 257
127	Unlocking Equine Nutrition: Enhancing Mineral Absorption through Microbial Phytase Supplementation	Qurat Ul Ain Sajid, Muhammad Umair Asghar, Mariusz Korczyński	Poland, Poland, Poland	Submission 258
128	Analgesic and anti-lithiasic effects of Moroccan Citrus aurantium flowers and fruit aqueous extracts	L. El Yazouli , A. Baslam, J. Laadraoui, M. Ait laaradia, R. Aboufatima, A. Kibbou, M.A. El Amiri, S. Moubtakir, A. Chait	Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco	Submission 260
129	Performance of Training Data Size for Face	Fella Berrimi	Algeria	Submission 262

	Recognition			
130	Adsorption of Rhodamine-B from aqueous solution by ZnS nanoparticles loaded on activated carbon	Mourad Termoul, Salima Attouti, Mokhtar Benzekri Benallou, Zohra Mekibes, Nouredine Benderdouche, Benaouda Bestani	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 266
131	Analysis of the Impact of the Incorporation of Biomass Waste on the Thermal Conductivity of Plaster-Based Construction Materials	Adel Baghdad Zougar, Ahmed Soufiane Benosman, Farid Brahim Houti, Abdelmadjid Lasledj, Imane Fatima Zohra Mesli, Abdelhak Badache	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 270
132	ASSESSING THE ROLE OF THE GREEN ECONOMY IN SUSTAINABLE DEVELOPMENT: A META-ANALYSIS FROM A GLOBAL PERSPECTIVE	Liridona Nikqi, Duresa Kilaj	Kosovo, North Macedonia	Submission 273
133	Numerical implementation of a penalty method for nonlinear complementarity problem	Kebaili Zahira	Algeria	Submission 274
134	Characterization and Evaluation of Recycled Textile Waste as Adsorbent for Wastewater Treatment	SAKINI Salma, AZOULAY Karima, BHAR Abderrahime, MOUFTI Ahmed, JEMJAMI Saloua	Morocco, Morocco, Morocco, Morocco, Morocco	Submission 275
135	Comparative Classification of Rice Varieties Grown in Turkey with CNN Architectures	Kıyas Kayaalp	Turkey	Submission 280
136	PUF-Based Lightweight Authentication Framework for RFID Systems	Shabbir Ahmad, Fazal Muhammad, Hamza Ali, Muhammad Ismail, Sana Ullah	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 281
137	Advances in Synthesis, Characterization, and Industrial Applications of Phenol Formaldehyde Resins	Buket Erzen, Mukaddes Karataş, Şermin Deniz, Ercan Aydoğmuş	Turkey, Turkey, Turkey, Turkey	Submission 282
138	Advancing Crop Protection through Convolutional Neural Networks: A Multi-Plant Disease Classification Study	Essa Khan, Gulistan Raja	Pakistan, Pakistan	Submission 283
139	Mechanical Properties of Glass Fiber/Epoxy Composites Effects of Number of Plies, Fiber Contents, and Angle-Ply Layers	Ali Arı	Turkey	Submission 288
140	Threat to the Survival of Camels in Algeria: Impact of Ecosystem Pollution and Abortive Pathologies (Toxoplasmosis and Brucellosis)	DJEDDOU BENABID Amira, HOUSSOU H., DJEDDI K., OUACHTATI D.	Algeria, Algeria, Algeria, Algeria	Submission 289
141	Model Predictive Current Control of the Shunt Active Power Filter based on Renewable Energy System	Ahmed ELOTTRI, Lakhdar MAZOUZ, Abdellah KOUZOU, Ali TETA, Nihel Bouthaina SALLAI	Algeria, Algeria, Algeria, Algeria, Algeria	Submission 290
142	Google Earth Engine (GEE) Platformu Kullanılarak Arazi Örtüsü Değişimi Analizi	Fatma Çiğdem Han, Hüseyin Kemaldere	Turkey, Turkey	Submission 293
143	LED-induced photocatalytic removal of the AG25 dye using calcium nanoferrites synthesised by green chemistry	Salima Daoui, Fatiha Abdelmalek, Batoul Benidris, Sabri Khalifa, Rachida Bendahman, Ahmed Addou	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 294
144	Electrochemical studies of the dichloromethane (DCM) as a corrosion inhibitor for mild steel in 1M HCl	H. EL-IDRISSI, A. ELABBADI, Fatima Ez-zahra AABASSI, K. Benjelloun, H. Atlas, M. Sfaira, T. Saffaj	Morocco, Morocco, Morocco, Morocco, Morocco, Morocco	Submission 295
145	Prediction of the inhibition efficiency of quinoxaline derivatives against mild steel corrosion in hydrochloric acid 1M using interpretable machine-learning methods	H. EL-IDRISSI, M. Sfaira, T. Saffaj	Morocco, Morocco, Morocco	Submission 296
146	Removal of the AG25 dye using a hybrid process combining cobalt nano-ferrite/UV/plasma-activated water treatment	Fatima.Z. Benkrifa, Fatiha Abdelmalek, Khalifa Sabri, El Batoul Benidris, Chaimaa Hachemi, Ahmed Addou	Algeria, Algeria, Algeria, Algeria, Algeria, Algeria	Submission 297
147	Determination of Natural Frequency Vibration of Crankshaft from Internal Combustion Engine with Finite Element Analysis	Ilyas Bozkurt, Murat Horoz	Turkey, Turkey	Submission 302
148	Determination of Frequency Vibration of Crankshaft with Different Mesh Structure with LS DYNA Finite Element Program	Ilyas Bozkurt	Turkey	Submission 303
149	Pfa of some CFAR processors in a non-centered Lévy-distributed clutter	Slimane Benmahmoud, Abdelhalim Rabeji, Fayssal Ouagueni, El-Hadi Meftah4	Algeria, Algeria, Algeria, Algeria	Submission 304
150	Optimization of Urea Formaldehyde Resin Production: Understanding Chemical Reaction Kinetics and Process Parameters	Mukaddes Karataş, Buket Erzen, Şermin Deniz, Ercan Aydoğmuş	Turkey, Turkey, Turkey, Turkey	Submission 305
151	Experimental Study and Modeling of Gentian Violet Dye Adsorption in Batch and Dynamic Modes on Eggshell Bioadsorbent	Nawal FERROUDJ, Chamees MEZGHICHE, Salsabil MEHALLI	Algeria, Algeria, Algeria	Submission 307
152	Molecular Insights into Asthma Pathogenesis	Abi-Ayad FZ., Abi-Ayad M., Benfettah K., Amrani Y., Senhadji R	Algeria, Algeria, Algeria, UK, Algeria	Submission 317

153	SOCA-CFAR processor: its Pfa in an Erlang-distributed clutter	Slimane Benmahmoud, Abdelhalim Rabehi, Fayssal Ouagueni, El-Hadi Meftah	Algeria, Algeria, Algeria, Algeria	Submission 318
154	An Optimized Solar Photovoltaic-Powered Green Hydrogen System	Toufik Sebbagh	Algeria	Submission 322
155	Evaluation and study of some chemical characteristics of liquid waste from concrete factories	REBIZI Mohamed Nadjib	Algeria	Submission 323
156	Displacement Analysis of Soft Soils under Earthquake Effect	Ferhat Şahinkaya	Turkey	Submission 325
157	The effect of using lightweight aggregates as a construction material in the development of mortar characteristics. An overview	Mohamed sadak Merrakchi, Smain Benyamina	Algeria, Algeria	Submission 326
158	GC/Cu/SiO ₂ carbon paste electrode as a voltammetric uric acid sensor	Lydia Tagueilmimt, Dehbia Oukil, Laid Makhloufi, Ouezna Hamouma	Algeria, Algeria, Algeria, Algeria	Submission 334
159	Study of the Thermodynamics of a Single-Effect Solar Absorption Refrigeration Machine	CHIKH Mohammed El-Amine, BENRAMANE Mohammed, ALIANE Abdenour	Algeria, Algeria, Algeria	Submission 337
160	Neural Network Application for predicting composite Insulator Flashover voltage under Contaminated conditions	Khaled Belhouchet, Assam Zorig	Algeria, Algeria	Submission 339
161	belhouchat_khaled@yahoo.fr	Hind Hidayet Sallai, Nasr-Eddine Bouhamou, Hafida Maarouf, Kenza Djilali Djebbour	Algeria, Algeria, Algeria, Algeria	Submission 340
162	Maximizing Efficiency of Independent Solar Power Systems via Particle Swarm Optimization (PSO)	Khaled Belhouchet, Assam Zorig	Algeria, Algeria	Submission 341
163	Afetlerin İnsan Sağlığı Üzerindeki Etkileri ve Sağlık Hizmetlerinin İyileştirilmesi	Salih UYAR	Turkey	Submission 342
164	AKADEMİK PERSONELİN BASINA BİLGİ VE DEMEÇ VEREBİLME ÖZGÜRLÜĞÜ VE SINIRLARI	ALPER ÇAĞLAR KOYUNCU	Turkey	Submission 347
165	Selim seyirli serebral hemoraji tablosu: Perimezenesefalik subaraknoid kanama	Ali Zeynel A. Tak	Turkey	Submission 354
166	Hareketli ve Sabit Tip Güneş Enerjisi Sistemlerinin Karşılaştırılması	Mehmet Kan, Furkan Sülü	Turkey, Turkey	Submission 366
167	Contributions of geophysics to geothermal prospecting in the Essaouira basin: Seismic reflection	Ben Elhamdi Sabah, Abdelhalim Tabit, Algouti Ahmed, Hadach Fatiha, Chaima Ben tabet , Abdennacer El Myr, Khadija Oudour	Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco	Submission 371
168	Investigation of Starch Effect on Rutile-type Electrode Covers	Serhat Kaya, Mustafa Kaptanoğlu	Turkey, Turkey	Submission 375
169	Investigation of Drying Time Effect on the Properties of Starch Added Rutile-type Electrodes	Mustafa Kaptanoğlu, Akın Odaş, Ümmühan Kaya, Ali İhsan Sayın	Turkey, Turkey, Turkey, Turkey	Submission 376
170	Determination of Some Antioxidant Activities in a Dietary Supplement Mixture Comprising Peas, Pumpkin, Sunflower Oil, Alkalized Cocoa, Flaxseed, Apple Pectin, Coconut, Organic Cane Sugar, and Bitter Bean	Halit Demir, Raci Kaçmaz, Ufuk Memiş, Mahmut İlker Yılmaz	Turkey, Turkey, Turkey, Turkey	Submission 377
171	Content of Some Antioxidant Activities in a Vanilla Dietary Supplement Mixture Consisting of Pea Protein, Pumpkin, Rice Flour, Coconut Oil and Powder, Beans, and Bitter Bean	Halit Demir, Raci Kaçmaz, Ufuk Memiş, Mahmut İlker Yılmaz	Turkey, Turkey, Turkey, Turkey	Submission 381
172	Optimal Corrective Action for a Source Outage on DC Networks	Tuncay Altun	Turkey	Submission 384
173	Petrographic Analysis of Beach Rocks from the Souiria Laqdimia Coastline in Morocco	Salma Ezzahzi, Ahmed Algouti, Abdellah Algouti, Soukaina Baid, Hayat El khounaijri	Morocco, Morocco, Morocco, Morocco, Morocco	Submission 389
174	Triple-Band Patch Antenna Design with Machine Learning Algorithms	Ali Töz, Merih Palandöken	Turkey, Turkey	Submission 394
175	Cognitive Processes in Reading Comprehension: A Theoretical Framework for Foreign Language Acquisition	Marija Todorova	Bulgaria	Submission 405
176	DİJİTAL DÖNÜŞÜM BECERİ/YETKİNLİK MODELLERİ: SİSTEMATİK LİTERATÜR TARAMASI	Melike Gizem DAVUTOĞULLARI, Ebru GÖKALP AYDIN	Turkey, Turkey	Submission 406
177	Western High Atlas Morocco The complex reef of Cap Ghir, Upper Jurassic Oxfordian	Mohamed Lakhilili, Ahmed Algouti, Fatiha Hadach, Yahia Laadimi, Imane El kihal, Kaouthar Majdouli, Khadija Lamrani, Khadija Oudour, Jaouad Aadaj, Hayat El khounaijri, Naji Jdaba	Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco, Morocco	Submission 410
178	Study of the placement of IoT sensors on the athlete's body especially the PPG sensor	Mourad ELGORMA, Rachid MERZOUGUI, Djillali MOUSSAOUI	Algeria, Algeria, Algeria	Submission 413
179	Sedimentological, Mineralogical Analysis, and Mapping of Natural Hazard Zones using GIS and	Abdennacer El myr, Ahmed Algouti, Mourad Guemouche,	Morocco, Morocco, Morocco, Morocco,	Submission 426

	Remote Sensing in the Fetouaka Watershed, Morocco	Fatiha Hadach, Khadija Oudour, Sabah Ben El Hamdi, Chaima Ben Tabet, Hayat El khounaijri	Morocco, Morocco, Morocco, Morocco	
180	TiCl4 muamelesi ile Düşük Işık Yoğunluğunda DSP'lerin Foto Algılama Özelliklerinin Geliştirilmesi	Mücella ÖZBAY KARAKUŞ	Turkey	Submission 428
181	Household Size and Risk Aversion of Households in European Union	Yuliya Petrenko	Slovakia	Submission 438
182-183	LPDA Design: Operating Frequency Range Of 20 GHz to 34 GHz	Hanane Metahri, Mehadjı Abri	Algeria, Algeria	Submission 469
184	Tarımda Kullanılan Herbisitlerin Topraktaki Enzimatik Etkileri	Çiğdem KÜÇÜK, MERAL ÖDEMİŞ, R. Nihal AKSOY	Turkey, Turkey, Turkey	Submission 476
185	Toward the preservation of earthen architecture in Algeria	Narimane Rabehi, Adel Sekhri	Algeria, Algeria	Submission 490
186	Kaotik haritalarla zenginleştirilmiş yenilikçi optimizasyon yaklaşımı: Mühendislik problemine yönelik bir değerlendirme	Safa Dörterler, Durmuş Özdemir, Hasan Temurtaş	Turkey, Turkey, Turkey	Submission 495
187	The Implementation of Canadian Standards for Quality Assurance/Quality Control in the Mining Sector	Kaouthar Majdouli, Ahmed Algouti, Abdellah Algouti, Khadija Lamrani, Mohamed Lakhilili, Yahya Laadimi, Naji Jdaba, Imane El Kihal	Morocco, Morocco, Morocco, Morocco, Morocco, Morocco	Submission 505
188	Novel SMote Based Ensemble Model for Medical Multi Class Imbalanced Data Set	Mouna Lamari, Nabihia Azizi, Nadjet Dendani, Aya Lihoum, Nacer Eddine Hammami	Algeria, Algeria, Algeria, Algeria, Saudi Arabia	Submission 527
189	Determination of Sediment, pH, Pressure, Temperature, and Similar Elements in Tanks with SCADA System: Yozgat Example	Muhammet Furkan KARAMAN, Yunus GÖRKEM, Şekip Esat HAYBER	Turkey, Turkey, Turkey	Mail Submission 9
190	Derin Öğrenme ile Görüntülerden Bina Çıkarmı	Serdar EKİZ, Uğur ACAR	Turkey, Turkey	Submission 279
191	Comparative Analysis of Machine Learning Techniques for Hate Speech Identification on Social Media	Sajida Perveen	Pakistan	Submission 358
192	A Statistical Approach to Real-time Reproductive Rate Estimates of the COVID-19 Pandemic Based on the Statistical Powers in terms of Different Sample Sizes, Effect Sizes and Standard Deviations for Independent/Paired Samples t-test	Neslihan İYİT, Hediye Nagehan BÜYÜKBAYRAM	Turkey, Turkey	Submission 441
193	Statistical Modelling of Worldwide Share of Population with Cancer in the Aspect of Greenhouse Gas Emissions as Indicators of Climate Change by Generalized Linear Model Approach for Balanced Panel Data in Epidemiology	Neslihan İYİT	Turkey	Submission 519
194	Government Innovations and Economic growth: Evidence from Slovak Republic	Matej Boór, Yuliya Petrenko	Slovakia, Slovakia	Submission 435
195	USE OF INDIGENOUS PLANT EXTRACTS TO MANAGE ALMOND MOTH, EPHESTIA CAUTELLA IN STORED DATES	Nasrullah Khan, Farid Asif Shaheen	Pakistan, Pakistan	Submission 526
196	An Analysis on Genetically Modified Organisms and Environmental Sustainability	Aysel Kekillioglu	Turkey	Submission 492
197	On Climate Change - Biodiversity Interaction Process and Turkey	Aysel Kekillioglu	Turkey	Submission 494
Content of Full Papers				
Page No	Title	Authors	Country	Submission ID
1-3	Water Sampling	Melek GÖKMEN KARAKAYA	Turkey	Mail Submission 2
4-7	Willmore-Helfrich Energy of a curve that lies on Weingarten and Tubular Surfaces in Galilean 3-Space	Filiz Ertem Kaya, Süleyman Şenyurt	Turkey, Turkey	Mail Submission 4
8-11	Çevrimiçi İşbirliğine Dayalı Öğrenme Ortamlarında Öğrencilerin İçerik Sunum Formatlarına Göre Gezinme Davranışları: Bir Gecikme Sıralı Analizi	Hatice YILDIZ DURAK	Turkey	Mail Submission 7
12-18	Examining the Role of Gamification in Shopping on Customer Engagement	Nurdan Sarıtepeci	Turkey	Mail Submission 8
19-25	The Importance of Cleaning Stage in Waste Paper Recycling	Mustafa Çiçekler, Ahmet Tutuş	Turkey, Turkey	Submission 18
26-31	Next-Generation Paper Production Technologies and Sustainability: The Use of Nanofibers	Mustafa Çiçekler, Ahmet Tutuş	Turkey, Turkey	Submission 19
32-35	Levenberg-Marquardt Yöntemi ile Sülfür Madeninin Model Parametrelerinin Belirlenmesi	Ezgi Erbek-Kıran	Turkey	Submission 29
36-38	Some Difference Sequence Spaces	Ayhan EŞİ	Turkey	Submission 32
39-42	Some Generalized Difference Sequence Spaces	Ayhan EŞİ	Turkey	Submission 33
43-50	Perception of undergraduate physiotherapy students of Faisalabad, Pakistan about clinical Instructors during their clinical practice	Moater Iftikhar, Nisar Fatima	Pakistan, Pakistan	Submission 54
51-57	Comparative Evaluation and Highlighting the Impact of Different Materials on the Thermal and Energy Performance of Two Single-Family Dwellings	KAOULA Dalel	Algeria	Submission 55
58-67	Impacts Static Inverters on the Performance of UPFC	Leila Boukarana, Sid Ali Fellag,	Algeria, Algeria,	Submission 59

	Systems	Idir Habi	Algeria	
68-73	Properties of PCBM Doped ZnO Thin Film Based Photodetector	Murat YILDIRIM	Turkey	Submission 67
74-77	Geometrik modellerin bazı mikroyapıların hacim ve yüzey alanlarını hesaplamada kullanımı	Ali Özdemir, Canan Özdemir	Turkey, Turkey	Submission 69
78-81	Bazı Mikro Karakterlerin İstatistiksel Karşılaştırılması	Ali Özdemir, Canan Özdemir	Turkey, Turkey	Submission 80
82-88	Comparative Evaluation and Highlighting the Impact of Different Materials on the Thermal and Energy Performance of Two Single-Family Dwellings	KAOUOLA Dalel	Algeria	Submission 87
89-96	Sürdürülebilir Koşullar Altında SAE1050 Çeliğinin İşlenebilirlik Özelliklerinin Araştırılması	Emine Şap	Turkey	Submission 88
97-100	Bazı Mikro Karakterlerin Sayısal Analizi	Ali Özdemir, Canan Özdemir	Turkey, Turkey	Submission 89
101-105	Aging and Social Media Addiction as a Digital Pharmakon	Feyza Dalaylı	Turkey	Submission 91
106-110	Bir Beslenme Mucizesi: Anne Sütü Bankalarının Hayati Rolü	Tuğçe Habergötören, Ayşe Çuvadar	Turkey, Turkey	Submission 92
111-114	Bazı Mikro Ölçekli Voronoi Geometrik Modellemeleri	Ali Özdemir, Canan Özdemir	Turkey, Turkey	Submission 93
115-121	Smart City Based Intranet of things (iot)	FIRAS FADHIL SHIHAB	Turkey	Submission 97
122-126	Determining Building Performance Levels Using the Pushover Method	Ömer Faruk TAŞ, Erkut SAYIN	Turkey, Turkey	Submission 108
127-131	Investigation Device Parameters of TCP Thin Film Based Photodiode	Murat YILDIRIM	Turkey	Submission 114
132-137	Bioinformatic Analysis of Substituted Pyrazolo[3,4-d]pyridazines for Prostate Cancer Therapy	Adnan Cetin	Turkey	Submission 118
138-140	Gender inequality in STEM education in Pakistan: comparison with advanced countries	Mehreen Qaisa	Pakistan	Submission 119
141-145	Combining DWT-DRPE based-Image Encryption Scheme using Chaotic Maps	Tewfik BEKKOUCHE, Nacira DIFFELLAH	Algeria, Algeria	Submission 120
146-149	Farklı Antibiyotik Disklerin Antibakteriyal Etkileri	Sabire YERLİKAYA	Turkey	Submission 121
150-157	MR-ALOAM: Multi Robot an Improved Localization Odometry and Mapping	Basma Ahmed Jalil and Ibraheem Kasim Ibraheem	Iraq, Iraq	Submission 123
158-161	Ayranda Bulunan Laktik Asit Bakterilerinin İnhibitör Etkisi	Sabire YERLİKAYA	Turkey	Submission 131
162-172	On Asymptotically Lacunary μ -Statistical Equivalence of Double Difference Sequences in Probabilistic Normed Spaces	Ömer Kişi, Rümeyza Akbiyık	Turkey, Turkey	Submission 132
173-177	Gundelia L.'nin Genetik Varyasyonunun Tanımlanması için Primer Arası Bağlanma Yeri (iPBS İşaretleyicileri) Dayalı PCR Analizinin Optimizasyonu	Muhammet İslam IŞIK, Şerife ERKOL, Metin ARMAĞAN, Aras TÜRKOĞLU	Turkey, Turkey, Turkey, Turkey	Submission 136
178-184	SLM Metodu ile CoCr Alaşımı Kullanılarak Üretilen Dental İmplantlarda SEM, EDX ve DTA Analizi	Özgün Ceren AKBAY, Erkan BAĞÇE	Turkey, Turkey	Submission 137
185-188	Betonda Soğuk Derz Problemi: Nedenleri ve Alınabilecek Tedbirler	Ahmet Ferdi Şenol	Turkey	Submission 138
189-197	A Research on Effects of DME on Spray and Atomization Characteristics in Diesel Engines	İsmet Sezer	Turkey	Submission 142
198-205	A Research on Effects of DME on Combustion Characteristics in Diesel Engines	İsmet Sezer	Turkey	Submission 143
206-215	A Research on Effects of DME on Cyclic Variations in Diesel Engines	İsmet Sezer	Turkey	Submission 144
216-221	Tereddütlü Bulanık TOPSIS Yöntemi ile Kamu Personeli Görev Yeri Seçimi	Hakan ÇOBAN, Barış ÖZKAN	Turkey, Turkey	Submission 145
222-226	Afet Direnci Belirleme Çalışmalarında Kriter Ağırlıklarının Pisagor Bulanık Mantık İle Belirlenmesi	Hakan Gündüz, Tamer Eren	Turkey, Turkey	Submission 146
227-233	Environmental Problems in Children's Drawings	Mustafa Derman	Turkey	Submission 147
234-238	Monocotyl and Dicotyl Plants: Comparing of Anatomy and Morphology	Mustafa Derman	Turkey	Submission 148
239-243	Controller Design of Balancing Experiment Sets: Part 1-LSHADE Tuned PID and PIDA Controller	Okkes Tolga Altinoz	Turkey	Submission 149
244-248	Sustainable Port Operations and Management	Gökçe Özkan and Murat Yorulmaz	Turkey, Turkey	Submission 150
249-257	Yaşadığı Kente Ait Masallar ile Oluşturulan Etkinliklerin Öğrencilerin Değerlere Yönelik Tutumları Üzerine Etkisi: İzmir Masalları	Mehmet SERTKAHYA	Turkey	Submission 154
258-266	Ortaöğretim Öğrencilerinin Schwartz Bireysel Değer Yönelimleri ile Mutluluk Seviyesi İlişkisinin Çeşitli Değişkenler Açısından İncelenmesi	Mehmet SERTKAHYA	Turkey	Submission 155
267-283	Bir açık bakır ocağının uzun dönem üretim planlaması	Mohammad Muslim Faqir Yar, Bülent Erdem, Nezamuddin Faqirzadah	Afghanistan, Turkey, Afghanistan	Submission 159
284-286	Numerical Simulation of Systolic Blood Flow Through A Starr-Edwards Artificial Heart Valve	A. MEBROUK, K. BELKHIRI, B. BOUMEDDANE, N. AIMEUR	Algeria, Algeria, Algeria, Algeria	Submission 160
287-290	γ -Cyclodextrin conjugation for enhancement of biological potential of bioactive compounds in drug discovery	Idris Arslan	Turkey	Submission 166

291-294	Cubic phase nanoparticles (cubosomes) for the targeted drug delivery	Idris Arslan	Turkey	Submission 167
295-301	Predicting of device parameters of PCBM Doped ZnO thin film based photodiode : Machine learning approach	Murat YILDIRIM	Turkey	Submission 176
302-310	IS THE ALBANIAN POPULATION AT RISK FOR A MEAT ALLERGY?	Griselda Korçari, Mirela Lika (Çekani), Artan Trebicka, Blerina Hasho	Albania, Albania, Albania, Albania	Submission 180
311-317	A Review: Lignin Grafted Thermoplastic Composites	Süheyla Esin Köksal, Orhan Kelleci	Turkey, Turkey	Submission 185
318-325	Bir yeraltı kömür madeninde uygun üretim yönteminin AHP algoritması üzerinden seçimi	Rahimullah Jalali, Yavuz Selim Durutürk, Eshaq Ali Mohammadi	Afganistan, Turkey, Afganistan	Submission 188
326-330	S-rGO/NiO/PPy nanocomposite formation for Supercapacitor Evaluations	Murat Ates	Turkey	Submission 189
331-337	Using the Riemann-Stieltjes Integral Boundary Conditions to Analyze a Sturm-Liouville Problem	Elisabeta Peti, Vera Hoxha, Enkeleda Zajmi Kotonaj	Albania, Albania, Albania	Submission 193
338-350	Almost Convergence of Triple Fuzzy Variable Sequences and their Interconnection in the Environment of Credibility	Işıl Açık Demirci, Ömer Kişi, Mehmet Gürdal	Turkey, Turkey, Turkey	Submission 196
351-358	CottonCNN-SH: Classification of Cotton Diseases with Conventional Based CNN Approach	Sedat Metlek, Halit Çetiner	Turkey, Turkey	Submission 205
359-364	Pompaj Depolamalı Hidroelektrik Santral Tasarımı: Keban Barajı Örneği	Gökçe TENEKCİOĞLU, Erdem ÇİFTÇİ	Turkey, Turkey	Submission 207
365-371	Estimating the Oscillation Intervals for the Associated Laguerre Differential Equation and Using MatLab to Visualize Them	Vera Hoxha, Elisabeta Peti, Enkeleda Zajmi Kotonaj	Albania, Albania, Albania	Submission 215
372-381	Numerical Method Evaluation on Leveraging Machine-Learning Innovations for Improved Patient Care. Comparison of Numerical Results	Shkelqim Hajrulla, Loubna Ali, Birce Sari, Robert Kosova	Albania, Albania, Albania, Albania	Submission 217
382-390	Improving the Flow of the Albanian Language by Using the Mathematical Model in Information Retrieval Systems Based in Statistical Data	Merita Hysa, Shkelqim Hajrulla, Desantila Hajrulla	Albania, Albania, Albania	Submission 219
391-397	Production and quality evaluation of whole wheat bread fortified with dates as sucrose replacer	Bushra Umar Hayat, Sadia Hassan, Muhammad Kamran Khan, Huma Umbreen, Shanza Mukhtar, Anum Nazir	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 220
398-402	MAG Gazaltı Kaynağı ile Birleştirilen Otomotiv Çeliklerinin (SPH270-C /SPH440-OD) Çekme Özelliklerinin ve Kaynak Dikişinin İncelenmesi	Çağrı ERTÜRK, Muhammed ELİTAŞ	Turkey, Turkey	Submission 228
403-409	Surfaces with a Light-like Axis in L3: Cyclohelical Configurations	Erhan Güler	Turkey	Submission 229
410-416	Exploring Space-like Profile Curve Configurations on Helical Surfaces with a Light-like Axis in L3	Erhan Güler	Turkey	Submission 230
417-420	Molecular Docking Analysis of a Schiff Base Nickel Complex with Antifungal Receptor	Sevgi Kansız, Yusuf Sert	Turkey, Turkey	Submission 242
421-424	Exploring the Antifungal Potential of a Schiff Base Copper Complex: Insights from Molecular Docking Studies	Sevgi Kansız, Yusuf Sert	Turkey, Turkey	Submission 243
425-429	Geleneksel Betonlara Uygulanan Kür Yöntemlerinin Etkinliği	Ahmet Ferdi Şenol	Turkey	Submission 261
430-435	An examination using RSM to analyze the geometrical parameters of heat sinks when utilizing Al2O3 nanofluid	Taha Tuna Göksu	Turkey	Submission 264
436-443	Simetrik ve Asimetrik Anahtarlı Şifreleme Algoritmalarının Karşılaştırılması	Arda ÖZÜDOĞRU, Vahide BULUT	Turkey, Turkey	Submission 269
444-448	Thermal Spray Simulation of Heat Exchanges Between Particles And Substrates	Boukhazani Fathi, Redha Rebhi, Mohamed Kezrane	Algeria, Algeria, Algeria	Submission 271
449-453	Expensive Single-Objective Optimization and Comparison of Surrogate-assisted Algorithms with Response Surface Method	Okkes Tolga Altinoz	Turkey	Submission 277
454-458	Türkiye’de Kullanılan Göz Farlarındaki Bazı Metallerin (Pb, Cr, Ni, Cd ve Al) ICP OES Kullanılarak Tayini	Dilek KURT, Esra ALTINTIĞ, Gülnur ARABACI	Turkey, Turkey, Turkey	Submission 285
459-463	Nanopartiküler Gümüş Kaplı Aktif Karbonların (NPAGAK) Gıda Güvenliği Açısından Patojen Kabul Edilen Bakteriler Üzerinde İnhibisyon Etkisinin Araştırılması	Birsen Sarıcı, Esra Altıntıg, Şükrü Karataş, Gülnur Arabacı	Turkey, Turkey, Turkey, Turkey	Submission 286
464-473	Investigation of the Use of Hydrogen in Direct Reduced Iron Production	Bekir Güney	Turkey	Submission 287
474-481	Kaya-Su Etkileşimi ve Yeraltısu Kimyası: Karaman İli Kuzeyi Örneği (Türkiye)	Ayşen DAVRAZ, Fatma AKSEVER	Turkey, Turkey	Submission 291
482-487	Nem Etkisi Altındaki Bir Kirişin Harmonik Yük Etkisi Altındaki Dinamik Analizi	Şeref Doğuşcan AKBAŞ	Turkey	Submission 292
488-495	Fonksiyonel Derecelendirilmiş Kirişlerin Serbest Titreşim Analizi: Dönme Ataletinin Etkisi	Uğur Kafkas, Gökhan Güçlü	Turkey, Turkey	Submission 298
496-503	State Analysis of Steel Deployable Frame Structure Subjected to Static Loads	Sertaç Tuhta	Turkey	Submission 299

504-511	3D Analysis for Relationship between Area and Geometry of Spatial Pedestrian Tunnel	Sertaç Tuhta	Turkey	Submission 300
512-519	Ensuring Honey Safety: Albania's Regulatory Framework for Nitroimidazole Compounds and Beyond	Ina Pasho, Kozeta Vaso, Pëllumb Aleksi, Elmira Marku, Erinda Prifti, Erjona Pasho	Albania, Albania, Albania, Albania, Germany	Submission 301
520-524	Shea yağı ile zenginleştirilmiş el kremlerinin antioksidan özelliklerinin tespiti	Emine Kübra ÇAMAŞ, Duygu YAMAN, Esra ALTINTIĞ, Gülnur ARABACI	Turkey, Turkey, Turkey, Turkey	Submission 306
525-528	The effect of using fired red brick waste particles as sand substitutes on the mechanical strength and durability of mud bricks against environmentally induced erosion and abrasion	Mohamed sadak Merrakchi , Smain Benyamina	Algeria, Algeria	Submission 316
529-535	Darrieus tipi Dikey eksenli rüzgar türbinleri performansının iyileştirilmesi üzerine yapılan çalışmalara genel bir bakış	Mehmet Seyhan	Turkey	Submission 320
536-543	TEKRARLAYAN SINIR AĞI TABANLI (RNN) DERİN ÖĞRENME YÖNTEMİ İLE KALP YETMEZLİĞİ TESPİTİ	Nida CANPOLAT, Burhan ERGEN, Şengül DOĞAN, Türker TUNCER	Turkey, Turkey, Turkey, Turkey	Submission 321
544-554	Karayolu Esnek Üst Yapı Projelendirme Rehberi (2008) Tasarımının Bingöl-Karakoçan Güzergâhı İşletme Performansı ile Değerlendirilmesi	İhsan Güzel	Turkey	Submission 327
555-560	İflas Durumları İçin Bir Oyun Teorisi Modeli	Ertuğrul SALİHÇAVUŞOĞLU, Sırma Zeynep ALPARSLAN GÖK	Turkey, Turkey	Submission 329
561-566	Translation in social media: Multilingual Communication and Technological Innovations	Neliada Memushaj	Albania	Submission 331
567-583	UV-Visible Spectrophotometric Determination of Trace Se(IV) through Ion-Pair Complex Formation After Extractive Separation/Enrichment Based on Ultrasound Assisted-Cloud Point Extraction	Najibullah Balooch, Ramazan Gürkan, Hacibayram Zengin	Turkey, Turkey, Turkey	Submission 333
584-591	KENTSEL DEMİRYOLU İSTASYONLARI BAKIM PERSONELİ ÇİZELGELEME PROBLEMİ ÇÖZÜMÜ	Muhammed Abdullah GENÇER, Hacı Mehmet ALAKAŞ, Mehmet PINARBAŞI, Tamer EREN	Turkey, Turkey, Turkey, Turkey	Submission 335
592-596	COVID-19'un Yayılım Tahminine Yönelik Derin Öğrenme Tabanlı Karşılaştırmalı Bir Analiz: Fransa İçin Bir Vaka Çalışması	Anıl Utku	Turkey	Submission 343
597-603	Electrical and Mechanical Load Design for Induction Motors	Hakan TERZİOĞLU, Abdullah Cem AĞAÇAYAK	Turkey, Turkey	Submission 345
604-607	Field Investigation on Road Embankment at Bridge Approach	Yesim Tuskan	Turkey	Submission 349
608-611	Stability Analysis of Cut Slopes Using Rock Bolt	Yesim Tuskan	Turkey	Submission 350
612-619	Finite Difference Method and Numerical Simulations on Heat Transfer Problem	Alma Sheko, Shkelqim Hajrulla, Henri Isufi, Leonard Bezati, V Lino	Albania, Albania, Albania, Albania, Albania	Submission 355
620-625	Değişken Kule Yüksekliklerine Sahip Rüzgâr Türbinlerinin Farklı Rüzgâr Hızı Yaklaşımları ile Üretebileceği Enerjinin Belirlenmesi	Murat ÖZTÜRK, Erdem ÇİFTÇİ	Turkey, Turkey	Submission 357
626-645	New Convergence Definitions for Double Sequences in Intuitionistic Fuzzy G–Metric Spaces	Ömer Kişi, Rümeyza Akbıyık, Mehmet Gürdal	Turkey, Turkey, Turkey	Submission 360
646-651	Konya İli Koç Teke Üretim Merkezinin Verimliliğinin İncelenmesi	İlyas POYRAZER, Birol DAĞ	Turkey, Turkey	Submission 363
652-657	Boğazlıyan (Yozgat, Türkiye) Su Kaynaklarının Hidrojeolojik ve Hidrojeokimyasal Özellikleri	Eda Aydemir Polat, Şehnaz Şener	Turkey, Turkey	Submission 364
658-666	Çanakkale İli Yenice İlçesi Davutköy ve Torhasan Göletleri Yakın Çevresinde Fotokapan Yöntemi İle Tespit Edilen Memeli Yaban Hayvanları	Ahmet CAGAY, Batuhan CEYHAN, Özcan ŞİMŞEK	Turkey, Turkey, Turkey	Submission 367
667-670	Psikolojik Doğum Travması ve Ebelik Bakımı	Ebru ERTAŞ, Feride ÇEVİK	Turkey, Turkey	Submission 382
671-674	Investigation of the Electricity Needs of a House in Denizli Province where Electricity is Produced with Solar Cells	Mehmet KAN	Turkey	Submission 388
675-679	Çilek: Sağlık İçin Kırmızı Hazine! Besin İçeriği ve Antioksidan Özellikleri	Muhammet Doğan	Turkey	Submission 392
680-685	Brokoli Mikroyeşilliklerinin Besin Değerleri, Antioksidan Özellikleri ve Sağlık Faydalarının Değerlendirilmesi	Muhammet Doğan	Turkey	Submission 393
686-691	Kaolin kili kullanılarak eriochrome black-T boyasının sulu çözeltiden gideriminin incelenmesi	Talip Turna	Turkey	Submission 397
692-699	İşletme Üretim Planlama Problemi İçin Genetik Algoritma Tabanlı Sezgisel Bir Yaklaşım	Ayşe ELDEM, Serkan ATAY	Turkey, Turkey	Submission 403
700-708	Enerji Depolama Sistemlerindeki Son Gelişmeler	Hakan DUMRUL, Edip TAŞKESEN, Fatih ARLI, Ali BULUT	Turkey, Turkey, Turkey, Turkey	Submission 404
709-711	Physical and Optical Properties of Barium Doped Nickel Oxide Thin Films Fabricant Semiconductor	Chouaieb Zaouche, Laid Dahbi, Sofiane Seggai, Elhabib Guedda	Algeria, Algeria, Algeria, Algeria	Submission 411
712-722	Effects of Different Air Excess Ratios on Performance and Emission Values in a Supercharged Heavy Duty Diesel Engine at Medium Speed	Ferhat EKİN	Turkey	Submission 418
723-727	Effect of recycled gravel from demolished concrete	Rachid Rabehi, Mohamed Rabehi,	Algeria, Algeria,	Submission 420

	on fresh self-compacting concrete (SCC)	Mohammed Omrane, Ouassila Bahloul, Naas Allout, Said Zaouai, Mohamed Amieur	Algeria, Algeria, Algeria, Algeria, Algeria	
728-735	DEMİRYOLU HAT BAKIM EKİBİ ÇİZELGELEME PROBLEMİ	Muhammed Abdullah GENÇER, Hacı Mehmet ALAKAŞ, Mehmet PINARBAŞI, Tamer EREN	Turkey, Turkey, Turkey, Turkey	Submission 424
736-740	Specificities of Technology and Entrepreneurship lessons with integrated information and communication technologies	Lyubima Zoneva	Bulgaria	Submission 425
741-747	Enhancing Modulus of Elasticity Prediction in Cementitious Composites with Rubber Particle Incorporation: A Christensen-Lo Model Approach	Djallal Eddine TELMAT, Hadda HADJAB, Amar BENAZZOUK	Algeria, Algeria, France	Submission 427
748-755	Türkiye 2023 Yılı Rüzgâr Enerjisi Potansiyeli ve Üretim Gücü Araştırılması	Hamza ALAHMAD, Edip TAŞKESEN, Hakan DUMRUL, Fatih ARLI	Turkey, Turkey, Turkey, Turkey	Submission 440
756-763	Fotovoltaik Enerji Sistemlerinin Elektrik Dağıtım Şebekesine Kısa Devre Koruması ve Harmonik Etkileri	Yusuf Ali YÜCEL, Doğan ÇELİK	Turkey, Turkey	Submission 442
764-771	Predicting Cutting Forces for Peripheral Milling Using Oxley's Predictive Theory and Johnson-Cook Behavioral Law	Benali Alia, Brahim Benmohammed	Algeria, Algeria	Submission 443
772-779	Predicting Cutting Forces for Peripheral Milling Using Oxley Predictive Theory and Johnson-Cook Behavioral Law	Benali Alia, Brahim Benmohammed	Algeria, Algeria	Submission 445
780-785	Analyzing the Effects of Cutting Speed on Cutting Forces in Ball End Milling of Aluminum Alloy 6061-T6: A Mechanistic Approach	Mekentichi Sifeddine, Benmohammed Brahim	Algeria, Algeria	Submission 446
786-793	Polifenilen Sülfid(PPS)'in Ultrasonik Kaynağı Sırasında Karşılaşılan Problemlerin Giderilmesi	Ecem Özdelek, Hikmet Ulaş, Gökşan Şan	Turkey, Turkey, Turkey	Submission 447
794-798	Synthesis of Zn/Bi2O3 composite for photodegradation of dyes in aqueous medium and its characterization	Aamir Iqbal, Zeeshan Ahmed Siddiqui, Uzma Shamim, Fatima Siddiqui	Pakistan, Pakistan, Pakistan, Pakistan	Submission 448
799-804	Congo Red boyasının kaolin kili üzerine adsorbsiyonu	Alper Solmaz	Turkey	Submission 449
805-810	Akış ve Alev Yönlendirme Özelliğine Sahip Yanma Odalarının İncelenmesi	İlker TEMİZER	Turkey	Submission 450
811-815	Stilbenlerin Sağlık Beslenmedeki Rolü: Resveratrol	Şennur GANİMET, Seydi YIKMIŞ	Turkey, Turkey	Submission 451
816-823	Machine Learning Approach for Predicting Obesity Levels	Muhammet Çakmak	Turkey	Submission 452
824-827	MADENCİLİK İŞLEMLERİNDE SİYANÜR KULLANIMI VE OLUŞABİLECEK İŞ GÜVENLİĞİ SORUNLARI	Gökhan KÜLEKÇİ, Gül UÇAK	Turkey, Turkey	Submission 454
828-833	Poliviniliden Florür (PVDF) Yarı Kristalin Floropolimer Malzemede İletken Karbon Siyahı Katkısının Termal Özelliklere Etkisinin Eriyik Yığılma Modelleme (Fused Deposition Modeling - FDM) 3B Baskı Prosesinde İşlenme Öncesi ve Sonrası Termogravimetrik Analiz Yöntemi ile İncelenmesi	Nurettin Arıkan, İbrahim Mutlu, Y. Emre Yağcı, M. Özgür Bora	Turkey, Turkey, Turkey, Turkey	Submission 456
834-840	Distributed Approach for Large-Scale Ensemble Multi-Label Classification	Sonia Guehria, Habiba Belleili, Nabih Azizi	Algeria, Algeria, Algeria	Submission 457
841-844	Kuraklığın Tarımsal Üretim Üzerine Etkisi	Adem Özkan, Yusuf Dilay	Turkey, Turkey	Submission 458
845-850	Elektriksel Gücün Peltier Modüllerde İki Yüzey Arasında Oluşturduğu Sıcaklık Farkının İncelenmesi	Sinan Çobaner, Fatih Uysal, Taha Yasin Korkmaz	Turkey, Turkey, Turkey, Turkey	Submission 473
851-854	A Review on The Transformation of Governance Public Administration for Twenty-First Century	Mustafa DEMİRKOL	Turkey	Submission 479
855-861	Kurkumin Komponentinin Sağlığa Etkisi	Göktağ Egemen GEZER, Seydi YIKMIŞ	Turkey, Turkey	Submission 480
862-868	Tedarik Zinciri Yönetiminde Sürdürülebilirlik: AHP yöntemiyle Örnek Bir Uygulama	Sezin Güleriyüz, Emirhan Koç	Turkey, Turkey	Submission 481
869-874	FARKLI ÇİNKOSTEARAT MİKTARLARINA SAHİP TM 316L ÇELİĞİNİN KATMANLI İMALATINDA KATMAN KALINLIĞININ ÇEKME ÖZELLİKLERİNE ETKİSİ	Mahmud Esad TEKİN, Mehmet Akif ERDEN, Harun ÇUĞ	Turkey, Turkey, Turkey	Submission 482
875-881	Kültürel Çerçeve Sanatın Bütünleştiriciliği	Seda Dilay	Turkey	Submission 483
882-886	Influence of the Nonwoven Materials Properties on Robotic Handling Efficiency	Goran Čubrić, Ivana Salopek Čubrić	Croatia, Croatia	Submission 486
887-897	Positioning NPSTP Standards in Bachelor of Education Scheme of Studies of Public-Sector University in Lahore. A Case study	Azka Iftikhar, Moater Iftikhar, Nisar Fatima, Maryam Safdar, Ayesha Niaz	Pakistan, Pakistan, Pakistan, Pakistan, Pakistan	Submission 491
898-902	YENİLENEBİLİR ENERJİ TÜKETİMİNİN EKOLOJİK AYAK İZİ ÜZERİNE ETKİSİ: ÇİN EKONOMİSİNDEN AMPİRİK KANITLAR	Murat Çetin, Sevgi Sümerli Sarıgül, Aycan Can	Turkey, Turkey, Turkey	Submission 497
903-908	The Relationship Between Financial Development and the Shadow Economy in Next-11 Countries	Murat Çetin, Sevgi Sümerli Sarıgül, Uğur Çınar	Turkey, Turkey, Turkey	Submission 498
909-916	Design of A Cost-Effective Weather Station with Rain Forecast	Serhat Küçükdermenci	Turkey	Submission 509

917-920	Yapay Zeka ve İş Zekası Entegrasyonu: Veri Yönetiminde Yenilik	Sezin Güleriyüz, Büşra Yıldırım	Turkey, Turkey	Submission 513
921-927	A Criteria Related with Eventually Positive Solutions of a First-Order Dynamic Delay Equation	Enkeleda Zajmi Kotonaj, Elisabeta Peti, Vera Hoxha	Albania, Albania, Albania	Submission 518
928-931	EFFECT OF TI AND ZR CONTENT ON WEAR PROPERTIES OF 316 STAINLESS POWDER METAL STEEL	Meftah Abdallah ABUSHAALA, Rajab Hussein Rajab ELKILANI, Mehmet Akif ERDEN, Mahmud Esad TEKİN, Harun ÇUĞ	Turkey, Turkey, Turkey, Turkey, Turkey	Submission 524
932-936	The Water Footprint Concept and the Situation in Türkiye	Senem GÜNEŞ ŞEN	Turkey	Submission 528
937-940	Au/Ag/MoOx/n-Si çoklu eklem yapıda frekansa bağlı kapasitans-gerilim değişimleri	Murat GÜLNAHAR	Turkey	Submission 529
941-948	Large Language Model for Creative Writing and Article Generation	Ijibadejo Oluwasegun William, Mubarak Altamimi	Turkey, Turkey	Mail Submission 6
949-958	A Neoteric Evaluation of Deep Reinforcement Learning Algorithms Utilizing Game Concepts	Zabiullah Ali Sher, Nehad T.A Ramaha	Turkey, Turkey	Submission 53
959-971	Assessment of Official Meetings Using Detailed Evaluation and Prediction Analysis (DEPA) Model Empowered with Machine Learning	Irfan Ullah, Hafiz Adil Sikandar, Muhammad Aqeel	Pakistan, Paksitan, Pakistan	Submission 251
972-978	SOIL EROSION MITIGATION USING ECO FRIENDLY MATERIALS	Aamna Sheeraz, Erum Aamir	Pakistan, Pakistan	Submission 395
979-983	ANALYSIS OF THE INTERNATIONAL WOOL MARKET	IVANA SALOPEK ČUBRIĆ	Croatia	Submission 455
984-991	Investigation of effect of cutter geometry on Surface Quality in Machining of AA-2219 T6 Alloy	Muhammad Abdullah, Ali Riaz, Ansa Khan	Pakistan, Pakistan, Pakistan	Submission 484
992-995	Analysis Of The Mechanical Properties Of The Marking Region Of A Part With Laser Marking Process	Nuri Burak Can	Turkey	Submission 506
996-1005	Assessing the Interplay of Digitalization on European Economies: A Comprehensive Analysis of Macro and Micro economic approaches	Ensem Mourou	Hungary	Mail Submission 10
1006-1011	ANALYSIS VIBRATION OF TIMOSHENKO SHAFT MADE HOMOGENEOUS MATERIAL WITH VARYING CROSS-SECTION	Ahmed SAIM, Abdelkrim BOUKHALFA	Algeria, Algeria	Submission 378
1012-1018	Creative programming. Assessing and improving mathematical algorithms with students.	Robert Kosova, Shkelqim Hajrulla, Anna Maria Kosova, Asad Kodra, Ali Xhafa	Albania, Albania, Albania, Albania, Albania	Submission 351
1019-1026	DDOS attacks Botnet in network protocols: Trends and challenges	Mubaarak Al-tamimi	Yemen	Submission 515
1027-1039	Obtaining Stability Lobes in High Speed Milling by Using Simulation Methods	Azoui Cherifa, Brahim Benmohammed	Algeria, Algeria	Submission 445

COMMITTEE

ORGANIZING COMMITTEES

Assoc. Prof. Admir Jance, European University of Tirana
Assoc. Prof. Elif Küçük Durur, Atatürk University
Assoc. Prof. Nermin Kişi, Zonguldak Bülent Ecevit University
Assoc. Prof. Neslihan İyit, Selçuk University
Assoc. Prof. Ülhak Çimen, Atatürk University
Dr. Krisztina Czakoova, J. Selye University
Dr. Ondrej Takac, J. Selye University
Dr. Ladislav Vegh, J. Selye University

SCIENTIFIC COMMITTEES

Prof. Dr. Abdurazzag Ali Aburas, University of Kwazulu-Natal
Prof. Dr. Adnan Sözen, Gazi University
Prof. Dr. Amit Soni, Manipal University
Prof. Dr. Anis Koubaa, Prince Sultan University
Prof. Dr. Carlos A. Coelho, Universidade Nova de Lisboa
Prof. Dr. Josep Guerrero, Aalborg University
Prof. Dr. Juan Vasquez, Aalborg University
Prof. Dr. Laszlo T. Koczy, Budapest University of Technology and Economics
Prof. Dr. Mohammad Ashraf Gondal, King Fahd University
Prof. Dr. Murat Yakar, Mersin University, Turkey
Prof. Dr. Muhammad Rashid, University of West Florida
Prof. Dr. Saad Mekhilef, Malaya University
Prof. Dr. Salim Ibrir, King Fahd University
Prof. Dr. Subarna Shakya, Tribhuvan University
Prof. Dr. Suzuki Hisashi, Chuo University
Prof. Dr. Usha Mehta, Institute of Technology, Nirma University
Prof. Dr. Vagif Gasimov, Azerbaijan Technical University
Prof. Dr. Weidong Zhu, University of Maryland
Assoc. Prof. Ali Hakan Işık, Burdur Mehmet Akif Ersoy University
Assoc. Prof. Amita Nandal, Manipal University
Assoc. Prof. Aslan İnan, Yıldız Teknik University
Assoc. Prof. Atif Iqbal, Qatar University
Assoc. Prof. Elif Küçük Durur, Atatürk University
Assoc. Prof. Francesco Cottone, University of Perugia
Assoc. Prof. Farid Melgani, University of Trento
Assoc. Prof. Halit Öztekin, Sakarya Applied Science University
Assoc. Prof. Hamdy Ziedan, Assiut University
Assoc. Prof. Harun Kemal Öztürk, Pamukkale University
Assoc. Prof. Jiri Pela, Brno University of Technology
Assoc. Prof. Merih Palandöken, İzmir Katip Çelebi University
Assoc. Prof. Nermin Kişi, Zonguldak Bülent Ecevit University
Assoc. Prof. Rita Ismailova, Kyrgyz Turkish Manas University
Assoc. Prof. Sadia Samar Ali, King Abdul-Aziz University
Assoc. Prof. Ülhak Çimen, Atatürk University
Assoc. Prof. Tanmay De, National Institute of Technology Durgapur
Assoc. Prof. Zeashan Khan, Air University
Dr. Ali Almisreb, International University of Sarajevo
Dr. Amina Othmani, University of Monastir-Tunisia
Dr. Arti Jain, Jaypee Institute of Information Technology
Dr. Arun Kumar Verma, Malaviya National Institute of Technology Jaipur
Dr. Aziz Shah, University of Glaskow
Dr. Bal Chand Nagar, ECE National Institute of Technology Patna
Dr. Baoze Wei, Aalborg University
Dr. Bohumil Brtník, University of Pardubice
Dr. Diptiranjan Behera, The University of the West Indies at Mona
Dr. Fayçal BENSALI, Qatar University
Dr. Fugui Qi, Fourth Military Medical University
Dr. Magdi S. Mahmoud, King Fahd University
Dr. Mariya Ouassia, Moulay Ismail University
Dr. Merdaci Slimane, University of -Sidi Bel Abbés, Algeria
Dr. Moharram Challenger, Antwerp University
Dr. Muhammad Sultan, Zakariya University
Dr. Lesya Anishchenko, Bauman Moscow State Technical University
Dr. R.A. Ilyas, Universiti Teknologi Malaysia
Dr. Sadina Gagula Palalić, International University of Sarajevo
Dr. Stefania Tomasiello, University of Tartu
Dr. Syed Omer Gilani, National University of Sciences and Technology (NUST)
Dr. Tarik Namas, International University of Sarajevo
Dr. Uduak A. Umoh, University of Uyo
Dr. Yajuan Guan, Aalborg University

**2ND INTERNATIONAL CONFERENCE
ON SCIENTIFIC AND INNOVATIVE
STUDIES ICSIS 2024
APRIL 18-19, 2024**

30.04.2024

18-19 Nisan 2024 tarihlerinde MEET üzerinden çevrimiçi olarak gerçekleştirilen 2nd International Conference on Scientific and Innovative Studies ICSIS 2024 konferansı akademik teşvik yönetmeliğinin 9. Maddesine istinaden “Tebliğlerin sunulduğu yurt içinde veya yurt dışındaki etkinliğin uluslararası olarak nitelendirilebilmesi için Türkiye dışında en az beş farklı ülkeden sözlü tebliğ sunan konuşmacının katılım sağlaması ve tebliğlerin yarıdan fazlasının Türkiye dışından katılımcılar tarafından sunulması esastır.” kriterlerini sağlamaktadır. Toplam 352 adet bildirinin yer aldığı kongre iki gün boyunca çevrimiçi olarak gerçekleştirilmiştir.

Türkiye dışından toplam 24 farklı ülkeden (**Fas, Cezayir, Slovakya, Ukrayna, Kuzey Makedonya, Azerbaycan, Malezya, Kosova, Pakistan, Arnavutluk, Suudi Arabistan, Romanya, Macaristan, Irak, Yemen, Afghanistan, Birleşik Krallık, Polonya, Almanya, Bulgaristan, Hırvatistan, Fransa, Finlandiya, Avusturya**) katılım sağlanmış olup, 352 adet bildirinin 199 (%56,53) tanesi yabancı katılımcı tarafından sunulmuştur.

Kongremize ilginiz için teşekkür ederiz.

Saygılarımızla,



**2ND INTERNATIONAL CONFERENCE
ON SCIENTIFIC AND INNOVATIVE
STUDIES ICSIS 2024
APRIL 18-19, 2024**

30.04.2024

18-19 Nisan 2024 tarihlerinde MEET üzerinden çevrimiçi olarak gerçekleştirilen 2nd International Conference on Scientific and Innovative Studies ICSIS 2024 konferansı MART DÖNEMİ DOÇENTLİK BAŞVURU ŞARTLARI yönetmeliğinin 2. bölümde yer alan Uluslararası Bilimsel Toplantı tanımlaması “Farklı ülkelerden bilim insanlarının bilim kurulunda bulunduğu ve sunumların bilimsel ön incelemeden geçirilerek kabul edildiği toplantı.” şeklindedir.

2ND ICSIS 2024 konferansı bilimsel komitesinin çoğunluğu yabancı bilim insanlarından oluşmaktadır. Aşağıdaki link ile bilimsel komite incelenebilir:

<https://as-proceeding.com/index.php/icsis/committe>

Ayrıca konferansımızda hakem değerlendirmesi olup hakem değerlendirmesi olumlu sonuçlanmadan ücret talebinde bulunulmamaktadır.

2024 MART DÖNEMİ DOÇENTLİK BAŞVURU ŞARTLARI yönetmeliğinin 8. bölümde yer alan Bilimsel Toplantı tanımlamasının b bendindeki “Diğer Uluslararası/Ulusal bilimsel toplantının düzenlenme komitesinde, kurum/tüzel kişilik/karar organı tarafından resmi olarak görevlendirilmiş üniversite/enstitü/bilimsel kurum/branş derneği akademisyen temsilcisi bulunması zorunludur.” şeklindedir.

2ND ICSIS 2024 konferansı düzenleme komitesinde farklı kurumlar tarafından görevlendirilmiş birden fazla üniversiteden akademik temsilciler bulunmaktadır. Aşağıdaki link ile düzenleme komitesindeki akademik temsilcilerin görevlendirme yazıları incelenebilir:

<https://drive.google.com/file/d/1eZalxRl8q6-eXATZzwUraH9KOhtQzFho/view>

Ayrıca görevlendirme yazıları ilgili konferansında özet ve tam metin kitapçıklarında yer almaktadır.

Kongremize ilginiz için teşekkür ederiz.

Saygılarımızla,



All Sciences Academy



04.09.2023

LETTER OF ASSIGNMENT

We confirm that Ing. Ondrej Takáč, PhD. working at J. Selye University takes part in the organization committee of the conferences organized by of All Sciences Academy.

Confirmation of the Vice Dean of the Faculty of Economics and Informatics

Name of Responsible Person and Signature:

Name and Surname

Sign:

PhDr. Imrich Antalík, PhD.

Date: 04.09.2023

UNIVERSITA J. SELYE
J. SELYE JÁNOS EGYETEM
FELMÉRÉSEK ÉS INFORMATIKA
FELMÉRÉSEK ÉS INFORMATIKA
Bratislava 167 21, 945 01 Komárno -1-



04.09.2023

LETTER OF ASSIGNMENT

We confirm that PaedDr. Ladislav Végh, PhD. working at J. Selye University takes part in the organization committee of the conferences organized by of All Sciences Academy.

Confirmation of the Vice Dean of the Faculty of Economics and Informatics

Name of Responsible Person and Signature:

Name and Surname

Sign:

PhDr. Imrich Antalík, PhD.

Date: 04.09.2023

UNIVERZITA J. SELYE
SELYE JÁNOS EGYETEM
GAZDASÁGTUDOMÁNYI ÉS INFORMATIKAI KAR
Bratislava 167/21, 945 01 Komárno -1-

16.08.2023

LETTER OF ASSIGNMENT

We confirm that Prof. Assoc. Dr. Admir Jançe, who is employed full-time as a lecturer, as well as holding the position of Head of the Imaging Department and Vice Dean of the Faculty of Technical Medical Sciences, takes part in the organization committee of the conferences organized by of All Sciences Academy.

Confirmation of the Rector/Dean/Vice Dean/Head of Department

Name of Responsible Person and Signature:

Rector: Prof. Dr. Tonin GJURAJ



Date: 16.08.2023

15.09.2023

İlgili Makama

Atatürk Üniversitesi İletişim Fakültesinde görev yapan Doçent Doktor Ülhak Çimen'in All Sciences Academy yayınevi ile beraber düzenlenmesi planlanan konferanslarda ve organizasyonlarda düzenleme veya bilim kurullarında yer alması uygun görülmüştür.

Gereğini rica ederim.

Ad ve Soyad

Prof. Dr. Adem YILMAZ

Dekan

Tarih 15.09.2023

İmza:

Prof.Dr. Adem YILMAZ
DEKAN

15.09.2023

İlgili Makama

Atatürk Üniversitesi İletişim Fakültesinde görev yapan Doçent Doktor Elif Küçük DURUR'un All Sciences Academy yayınevi ile beraber düzenlenmesi planlanan konferanslarda ve organizasyonlarda düzenleme veya bilim kurullarında yer alması uygun görülmüştür.

Gereğini rica ederim.

Ad ve Soyad	İmza:
Prof. Dr. Adem YILMAZ	
Dekan	Prof.Dr. Adem YILMAZ
Tarih 15.09.2023	DEKAN



04.09.2023

LETTER OF ASSIGNMENT

We confirm that PaedDr. Krisztina Czakóová, PhD. working at J. Selye University takes part in the organization committee of the conferences organized by of All Sciences Academy.

Confirmation of the Vice Dean of the Faculty of Economics and Informatics

Name of Responsible Person and Signature:

Name and Surname

Sign:

PhDr. Imrich Antalík, PhD.

Date: 04.09.2023

UNIVERZITA J. SELYEHO
J. SELYE JÁNOS EGYETEM
FIZIKAI, MATEMATIKAI ÉS INFORMATIKAI KAR
Hradná 167/21, 930 01 Komárno - 4 -



T.C.
ZONGULDAK BÜLENT ECEVİT ÜNİVERSİTESİ REKTÖRLÜĞÜ
Çaycuma Meslek Yüksekokulu Müdürlüğü



Sayı : E-84604848-903.07.04-371012
Konu : Bilimsel Toplantı Görevlendirme

01.11.2023

İLGİLİ MAKAMA

İlgi : Öğretim Üyesi Doç. Dr. Nermin KİŞİ'nin 30.10.2023 tarihli dilekçesi.

Yüksekokulumuz Yönetim ve Organizasyon Bölümü Öğretim Üyesi Doç. Dr. Nermin KİŞİ'nin "All Sciences Academy Yayınevi"nin düzenleyeceği bilimsel toplantıların düzenleme ve bilim kurullarında görev almasında Yüksekokulumuzca bir sakınca bulunmamaktadır. İş bu belge ilgilinin isteği üzerine tanzim edilmiştir.

Bilgilerinizi ve gereğini rica/arz ederim.

Doç. Dr. Hikmet YAZICI
Meslek Yüksekokulu Müdürü

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu : BSELS3BZ2K Pin Kodu : 43472

Belge Takip Adresi : <https://www.turkiye.gov.tr/bulent-ecevit-universitesi-ebys>

Adres : BEÜ Çaycuma Meslek Yüksekokulu, 67900, Çaycuma, Zonguldak
Telefon : (0372) 643 66 01 Faks:(0372) 643 66 04
e-Posta : caycumamyo@beun.edu.tr Web : <https://cmyo.beun.edu.tr/>
Kep Adresi : beun@hs03.kep.tr

Bilgi için : Tülay KEÇECİ
Unvanı : İşçi





Kullanıcı Yorumlarından Makine Öğrenmesi ile Emoji Kestirimi

Tuğba TOSUN PATACI^{1*} and Yaşar BECERİKLİ²

¹Kocaeli Üniversitesi Fen Bilimleri Enstitüsü Bilgisayar Mühendisliği Bölümü.

² Kocaeli Üniversitesi Mühendislik Fakültesi Bilgisayar Mühendisliği Bölümü

*(tugggbatosun@gmail.com) Email of the corresponding author

Özet – Çalışma doğal dil işleme alanında bulunan otomatik metin sınıflandırması yöntemleri ile ilgilidir. Yapılan çalışma kullanıcı yorumlarından faydalanılarak emoji tespiti ve sınıflandırılması için detaylandırılmış olmak üzere metinlerin sınıflandırıldığı sistemlere yönelik geliştirilen bir yöntem ile ilgilidir. Yöntemde özellik çıkarımı için BoW ve N-gram yöntemleri kullanılmaktadır. Eğitim aşamasındaki sınıflandırma modeli ise Naive Bayes, Karar Ağacı ve Rastgele Karar Ormanı yöntemlerinden seçilebilir niteliktedir. Çalışmada altı temel duygu içeren Twitter mesajlarından oluşan bir veri kümesi kullanılmıştır. Mesajlar öfke, korku, neşe, aşk, üzüntü ve şaşkınlık emojiilerini belirtecek şekilde etiketlenmiştir. Veri kümesi kullanıcıların çeşitli konulara ilişkin yaptıkları yorumlara ve bu yorumlara istinaden belirlenen emojiileri içermektedir. Çalışma sonucundan birden fazla sınıflandırma tekniklerinin metinden emoji tespitinde başarımlarını gözlemlemek ve karşılaştırmak hedeflenmiştir.

Anahtar Kelimeler – Metin Sınıflandırma, Bayes Sınıflandırıcı, Rastgele Karar Ormanı, J48, Kullanıcı Yorumları Sınıflandırma, Yorumdan Emoji Tespiti



Water Sampling

Melek GÖKMEN KARAKAYA*

¹Department/Research Institute, Uşak University, Uşak

*(melek.karakaya@usak.edu.tr)

Abstract – In order to protect the health of the public in our country, every month water is sampled for chemical and microbiological analyzes from the drinking water used by the public connected to the city mains by the officials at the District Health Directorate under the Ministry of Health. Banaz Vocational School was determined by the authorities as one of the sampling points in Banaz District of Uşak Province in March 2024. In this study, Laboratory Technology first year students taking the water technology course were allowed to closely monitor the water sampling work and were given the opportunity to ask questions to the authorities. This study is compatible with the 6 clean water and sanitation headings of the sustainable development goals in our country. Unsafe drinking water causes various diseases. The World Health Organization produces international norms regarding drinking water quality and public health worldwide. In determining water quality, it is first necessary to take a water sample according to Article 7.3 of TS EN ISO/IEC 17025 Standard. In this study, officials sampled water for chemical and microbiological analysis in the canteen where Laboratory Technology students were present. Chlorine test was performed with o-tolidine solution before taking water samples. These samples were sent for analysis to the Afyonkarahisar Public Health Laboratory affiliated with Afyonkarahisar Provincial Health Directorate, an accredited institution by TÜRKAK according to TS EN ISO/IEC 17025 Standard. Our students observed in detail the application of the sampling stage of water coming from the city mains in business life.

Keywords – Banaz Vocational School, Safe Drinking Water, Water Sampling, TS EN ISO/IEC 17025, Sustainability



MERGERS OF ENTERPRISES AND THEIR EFFECTS ON COMPETITION LAW

Inesa Adhami*

¹ Department of Public Law, Faculty of Law, University of Tirana.

Abstract – This paper aims to give a more in-depth knowledge about mergers of enterprises and the impact they have to competition law.

The topic provides a detailed explanation of the effects and their classifications that may affect geographic markets as well as other competing businesses in the market.

The question that inevitably arises is:

Do mergers positively affect competition law and the market? How much effectiveness does a merger of enterprises bring to the market and can it be justified by certain means or forms? These questions are answered based on the jurisprudence of the European Court of Justice (case law).

The paper ends up with conclusions in order to further improve the European legislation and the work of the competition authorities about mergers cases and their effectiveness in the market, having a direct impact on the well-being of final consumer.

Keywords – Enterprise, Competition, European Union, Market, Consumer, Legislation



Significance and Potential of Bio-Renewable Liquid Fuels in the Energy Sector

Gizem Dedeoğlu^{1,2}, Zehra Gülten Yalçın¹, Mustafa Dağ¹

¹ Karatekin University, Faculty of Engineering, Department of Chemical Engineering, Çankırı, Türkiye

² Quality Process Engineer, Kent Industrial Zone (OSB), 2nd Avenue, 1st Street, No:1 Tüney Village/Çankırı

*(aaa@xxxx.com) Email of the corresponding author

Abstract – With the onset of the Industrial Revolution, innovations in production led to the establishment of factories, resulting in a growing demand for energy across various sectors. Initially, energy was predominantly sourced from fossil fuels; however, due to their finite nature and the environmental damage they cause, there has been a quest for alternative energy sources. Additionally, the increasingly discussed topic of climate change has prompted researchers worldwide to explore new avenues. The significance of alternative energy sources is underscored, alongside an overview of the current status of energy sources in Turkey and globally. Recent studies indicate that fossil fuels still dominate as an energy source. However, considering the environmental emissions and costs associated with their usage, there has been a shift towards renewable energy sources. Recent developments in the energy sector, particularly the Russia-Ukraine conflict, have had significant ramifications across Europe and notably in Turkey. Given Turkey's status as an agricultural country, there has been an acceleration in research on biofuel-based energy, a renewable energy source.

Keywords – Bio-Renewable Liquid Fuels, Energy Sector, Biofuel Production, Sustainable Energy Sources



Study of the Behavior of Perlite-Based Concrete in Aggressive Environments

Ahlem Houaria Mohammed Belhadj^{*1,2}, Rachid Derbal²

¹Smart Structures Laboratory (SSL), University of Ain Temouchent, Po. Box 284, Ain Temouchent, Algeria.

²Department of Civil Engineering and Public Works, University of Ain Temouchent, Po. Box 284, Ain Temouchent, Algeria.

*Ahlem.mohamedbelhadj@univ-temouchent.edu.dz

Abstract – Sturdy concrete is engineered to withstand the corrosive influence of various aggressive elements, ensuring an extended lifespan for vital structures. External factors such as exposure to seawater, chlorides, CO₂, and chemical agents pose significant threats to the physical and mechanical properties of concrete, ultimately impacting its durability over time. This study aims to elucidate the outcomes of an extensive experimental investigation focused on evaluating the mechanical and physical characteristics of lightweight concrete integrated with expanded perlite aggregates under challenging environmental conditions.

The experiment comprised the preparation of four distinct series of test specimens, with each series varying the volume percentage of perlite aggregates within the concrete matrix from 0% to 60%. These specimens were then subjected to hostile environments, including immersion in seawater, sulfuric acid (H₂SO₄), and hydrochloric acid (HCl). The resulting dataset encompasses comprehensive analyses of mass loss, mechanical resilience, and thermal conductivity, providing invaluable insights into the performance of concrete formulations in adverse settings.

By accurately examining the response of lightweight concrete incorporating expanded perlite aggregates to aggressive agents, this study offers crucial information for the development of durable construction materials resilient to environmental degradation. These findings contribute significantly to the advancement of sustainable infrastructure practices by facilitating the creation of concrete structures capable of withstanding harsh conditions while ensuring long-term structural integrity.

Keywords – Perlite, Aggressive Environments, Lightweight Concrete, Mechanical Resistance, Thermal Conductivity



Emerging Applications of Nanotechnology: a review of applied science studies

Oussama Zaidi

¹Mechanical Engineering department, construction engineering faculty, university of Mouloud Mammeri Tizi-Ouzou, 15000 Tizi-Ouzou, Algeria

*(oussama.zaidi@ummt.dz) Email of the corresponding author

Abstract – This review paper surveys emerging applications of nanotechnology in various industries, including medicine, electronics, and energy. It discusses recent advancements in nanomaterial synthesis, characterization, and manipulation, highlighting potential benefits and risks associated with nanoscale technologies.

Keywords – Review, Nanotechnology, Applied Sciences, Nanoscale



Estimation of Dynamic Parameters for Structural Health Monitoring of Strategic Structures Subjected to Earthquakes

Rachid Derbal^{*1,2}, Nassima Benmansour¹, Naoual Djafour¹, Abdellatif Bentifour¹ and Abderaouf Daci¹

¹*RISk Assessment & Management Laboratory (RISAM), University of Tlemcen, Algeria*

²*Department of Civil Engineering and Public Works, University of Ain Temouchent, Algeria.*

**(rachid.derbal@univ-temouchent.edu.dz) Email of the corresponding author*

Abstract – Structural Health Monitoring of strategic structures is the process of inspecting, monitoring and regularly maintaining structures such as towers, bridges, dams, tunnels and other infrastructures, to ensure their stability and efficiency during major risks such as earthquakes. The techniques used in structural health monitoring aim to detect early signs of deterioration and structural weakness, preventing potential failures, which could adversely affect the performance of the structure. The results of these control techniques are used to choose the most appropriate solution for the monitored structures to extend their lifespan or to prevent any earlier damage in structural components.

The main objective of this work is to develop numerical simulation models capable of predicting the dynamic behavior of structures under seismic excitation. This involves the development of techniques for identifying the dynamic parameters of structures subjected to seismic ground motions through measurements obtained by carrying out tests on the shaking table acquired by the RISAM laboratory, University of Tlemcen.

Systems identification techniques consist of determining a mathematical model of the structure from experimental data. This technique allows the engineer to detect the real dynamic characteristics of a structure and subsequently control the state of its health as well as its level of damage.

Keywords – Structural Health Monitoring, Earthquake, Shaking Table, Dynamic Parameters, Numerical Simulation Model



Evaluation of the influence of the spatial variability of soil characteristics on the estimation of seismic excitation according to ground classifications of seismic codes

Rachid Derbal ^{*1,2}, Nassima Benmansour ¹ and Ahlem Houaria Mohammed Belhadj ^{2,3}

¹RISK Assessment & Management Laboratory (RISAM), University of Tlemcen, Algeria

²Department of Civil Engineering and Public Works, University of Ain Temouchent, Algeria.

³Smart Structures Laboratory (SSL), University of Ain Temouchent, Algeria.

^{*}(rachid.derbal@univ-temouchent.edu.dz) Email of the corresponding author

Abstract – Based on seismic codes, the site foundation of structures is modeled according to ground classifications. This assumption depends on site configurations. Numerous observations on seismic recordings have shown that the spatial variability of soil characteristics can affect ground motions. Most seismic codes provide ground classification based on soil characteristics, especially the shear wave velocity. Based on geotechnical tests, a prescribed ground type is adopted according to the seismic code classification. In the case of multi-supported structures, the soil foundation can be very divergent under supports. This soil characteristics contrast favors the amplification of seismic actions. The main objective of this work is to evaluate the influence of the spatial variability of soil foundation characteristics on seismic ground motions. For this purpose, the generation of seismic ground motions considering the spatial variability of soil characteristics is realized through a developed generation technique. The generated seismic ground motions are consistent at the base rock with a power spectral density of a recorded earthquake. Then, these generated seismic ground motions are projected on the surface by site amplification. A numerical example is performed according to ground classification given by seismic codes. The same example is treated by adopting the real soil characteristics. The results of these two site configurations are compared. Based on the case of real soil characteristics, the calculated seismic loading gives multiple seismic excitations depending on soil characteristics foundation under each support. It can promote the appearance of additional pseudo-static forces. However, the case of prescribed ground type is adopted following the seismic code leads to a single seismic loading. Based on results, a significant influence of the spatial variability of soil characteristics on generated seismic ground motions is observed especially the frequency content.

Keywords – Seismic Code, Ground Classification, Multi-Supported Structures, Generation Technique, Spatial Variability Of Soil Characteristics, Site Amplification.



Global Innovations in Neo-Vernacular Sustainability: A Comparative Study

Fouzia Meliouh^{1*}, Adel Sekhri¹, Khalissa Hamel¹, Mohamed Yahia Amran Necib, Faten Ghanemi¹, Soumaya Makhoulfi¹, Manel Nasri¹

¹ LACOMOFA Laboratory, Architecture Department, Mohamed Khidher University Biskra –Algeria

* Email of the corresponding author: f.meliouh@univ-biskra.dz

Abstract – This research sheds light on the comparative considerations of global neo-vernacular architecture and its role in sustainable development. Global neo-vernacular approaches have become an essential part of forming sustainable architecture. The movement is a perfect blend of traditional architectural knowledge and modern environmentalist themes, gaining momentum worldwide. By scrutinizing projects across different regions, we see how traditional strategies are adapted to local conditions and climates to achieve sustainability. The study connects the shared experiences and unique characteristics of vernacular architecture, offering insights into conserving cultural heritage alongside meeting societal ecological needs. Furthermore, it delves into these activities' contributions to the UN Sustainable Development Goals, particularly in making towns and communities more habitable and pleasant. The conclusion summarizes key practices for sustainable urbanization and introduces neo-vernacular approach as a potential solution for developing sustainable cities of the future.

Keywords – Neo-Vernacular Architecture; Sustainable Development; Cultural Heritage; UN Sustainable Development Goals (Sdgs); Sustainable Urbanization



Scalable Coherent Fabric in Multi-core RISC V Systems

Kim Ho Yeap^{*}, Lean Sheng Tan² and Yu Jen Lee¹

¹ Faculty of Engineering and Green Technology, Universiti Tunku Abdul Rahman, 31900 Kampar, Malaysia.

² Intel Microelectronics, Bayan Lepas Free Industrial Zone, Phase 3, Halaman Kampung Jawa, 11900 Penang, Malaysia.

*yeapkh@utar.edu.my

Abstract – The objective of this research is to realize a scalable cache coherency fabric in a multi RISC V core system. Cache coherency fabric is a module that helps maintain the memory consistency of the caches in a multi cores systems. In this work, a simulation model for a directory based cache coherency approach fabric is developed to help maintains mocked cache requests from two RISC V cores. MESI protocol is used to guarantee the cache consistency of the cores. The cache coherency fabric is designed using system Verilog hardware description language and simulated using ModelSim. Some components in the module designs are parameterized to help achieve the scalability of the cache coherency model. The design was validated through the tests cases in test plans. Testbench waveforms and monitor output were generated and used to verify the functional correctness of the Cache coherency fabric.

Keywords – Cache Coherency; MESI Protocol; Multi-Core System; RISC-V; Scalability



Evolution of Machine Learning in Mathematics: A Bibliometric Analysis

Oussama Zaidi* ¹

¹Mechanical Engineering Department, Construction Engineering Faculty, University of Mouloud Mammeri Tizi-Ouzou, 15000 Tizi-Ouzou, Algeria

*(oussama.zaidi@ummt.dz) Email of the corresponding author

Abstract – This bibliometric analysis investigates the evolution of machine learning algorithms in mathematical research. It explores the application of neural networks, support vector machines, and other computational techniques in solving complex mathematical problems, highlighting emerging trends and areas for further exploration.

Keywords – Bibliometric Analysis, Machine Learning, Mathematical, Computational, Algorithms



Model Order Reduction Second Order Systems using a Second Order Arnoldi Method with Stopping Criterion and Reduced Order Selection

Abdesselam TAMRI *¹

**¹Faculty of Science and Technology, University of Djelfa, PO Box 3117, Djelfa 17000, Algeria,*

thamri17@yahoo.fr

Abstract – This study introduces a new algorithm for reducing large dimensional second-order dynamic systems through the Second Order Arnoldi Reduction (SOAR) procedure, with a stopping criterion to select an acceptable good order for the reduced model based on a new coefficient called the Numerical-Rank Performance Coefficient (NRPC), for efficient early termination and automatic optimal order selection of the reduced model. The key idea of this method is to calculate the NRPC coefficient for each iteration of the SOAR algorithm and measure the dynamic evolution information of the original system, which is added to each vector of the Krylov subspace generated by the SOAR algorithm. When the dynamical tolerance condition is verified, the iterative procedure of the algorithm stops. Three benchmark models were used as numerical examples to check the effectiveness and simplicity of the proposed algorithm.

Keywords – Second Order Arnoldi Reduction (SOAR), Numerical-Rank Performance Coefficient (NRPC), Dynamical tolerance, Krylov Subspace, Model Order Reduction, Second Order LTI Systems



Model Order Reduction, A novel method using Krylov sub-spaces and Genetic Algorithm

Abdesselam TAMRI *¹

**¹Faculty of Science and Technology, University of Djelfa, PO Box 3117, Djelfa 17000, Algeria,*

thamri17@yahoo.fr

Abstract – Model Order Reduction (MOR) of complex and large systems in Electrical engineering, continuous to be an attractive field for Engineers and Scientists over the last few decades, this complexity of models makes the control designs and simulation using Computer Aided Design (CAD) more and more difficult and consuming a lot of time. There for, accurate, robust and fast algorithms for simulation are needed. The goal of MOR is to replace the original system by an appropriate reduced system which preserves the main properties of the original one. Recently a set of new techniques based on Artificial Intelligence (AI) were proposed in recently for MOR. This article considers the problem of model order reduction of Linear Time In varying (LTI) systems. It is described by first and second order ordinary differential equations model. A tow steps method for model order reduction of LTI systems is proposed here. In the first step, the size of the original model is reduced to an intermediate order, using an analytical technique based on Krylov sub-spaces. In the final step of the reduction process, an AI approach based on Genetic Algorithm is applied to obtain an optimized nominal model.

Keywords – Krylov Subspace, Model Order Reduction, LTI systems, second order system, Genetic Algorithm, State space, Transfer Function



Photoluminescence Response and Opto-Electrical Properties of Sol-Gel Synthesized ZnO Thin Films

Azqa Farrukh Butt^{*1}, Saira Riaz¹ and Shahzad Naseem¹

¹Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan

^{*}(azqabutt222@gmail.com)

Abstract – The sol-gel spin coating route was used to prepare zinc oxide thin films to study photoluminescence response and its use in optoelectronics devices. X-ray diffractometer and spectroscopic ellipsometer have been used for investigate the structural and optical properties of thin films. Thin films have been investigated under as deposited conditions. XRD patterns confirm that zinc oxide (ZnO) thin film has hexagonal crystal structure with c-axis orientation along (002) preferred plane. Intensity of the plane with preferred orientation is observed to be increased with increase in the thickness of the ZnO thin films. Thus, increased crystallinity is observed with the increase in thickness of films. The transmission spectrum is investigated in the wavelength range that covers UV, Vis and IR portion of the spectrum. Wavelength dependent variations in refractive index (n) and extinction coefficient (k) have been investigated for all of the thin films. Thin film prepared under all the conditions show high transmission in the visible range. Direct band gap is observed in the range of 3.98 eV to 4.01 eV. The magnitude of the extinction coefficient is quite small, thus shows that zinc oxide thin films has a minimal energy loss. Both trends follow fundamental variations with wavelength. Variations of ϵ_1 and ϵ_2 with wavelength also follow the same trend that is characteristic of semiconductors.

Keywords – Zinc Oxide, Sol-Gel, Band Gap, Thin Films, Optical Properties



IMMUNOLOGICAL PROTECTIVE EFFICIENCY OF INCORPORATED MONOVALENT FEED BASED VACCINE WITH DIFFERENT PLANT BASED ADJUVANT AGAINST *Aeromonas hydrophila* IN COMMON CARPS (*Cyprinus carpio*)

Saba Ishaq¹, Farzana Abbas^{*1}, Hafeez-ur-Rehman¹, Saba Sana², Nimra Mubeen¹, Samama Jalil¹

¹ Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore, Pakistan

² Department of Microbiology, Ikram ul Haq Institute of Industrial Biotechnology, Government College University Lahore, Pakistan,

^{*}(farzanaabbas@uvas.edu.pk) Email of the corresponding author

Abstract – The study evaluates the efficacy of vaccination combined with plant-based adjuvants in enhancing the immune response and survival of common carp infected with *Aeromonas hydrophila*, a common pathogen in South Asian carp aquaculture. A feed-based monovalent vaccine containing formalin-killed *A. hydrophila* antigens was prepared with palm oil and aloe vera as adjuvants. Fish were divided into four groups: one fed with commercial feed (T0) and three with vaccinated feed (T1, T2 with palm oil adjuvant, and T3 with aloe vera adjuvant). Vaccinated feed quality was satisfactory. After 42 days, serum lysozyme activity and antibody titers were significantly higher ($p < 0.05$). The relative percentage survival (RPS) was 100% in T3. Histopathological and hematological analyses revealed improved immune response and growth in vaccinated groups. The study concludes that vaccinating common carp with *A. hydrophila* antigens and plant-based adjuvants enhances immunity, leading to better growth and survival rates post-infection. These findings underscore the potential of this vaccination strategy for disease control in aquaculture.

Keywords – *Aeromonas Hydrophila*, Aloe Vera Oil, Palm Oil, Feed Based Vaccine, *Cyprinus Carpio*



DEVELOPMENT OF FEED BASED MONOVALENT VACCINE TO ENHANCE THE IMMUNITY OF CTENOPHARYNGODON IDELLA AGAINST AEROMONAS VERONII

Muniza Mahrukh ^{*1}, Farzana Abbas^{*1}, Hafeez-ur-Rehman^{*1}, Saba Sana^{*2}, Nimra Mubeen^{*1}, Samama Jalil^{*1}, Amina Shafiqe ^{*1}

¹ Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore, Pakistan

² Department of Microbiology, Ikram ul Haq Institute of Industrial Biotechnology, Government College University Lahore, Pakistan,

*(farzanaabbas@uvas.edu.pk) Email of the corresponding author

Abstract – Infectious diseases in aquaculture caused by pathogens like *Aeromonas veronii* remain a major obstacle to its further development. This study aimed to develop a monovalent spray feed-based vaccine to enhance the immunity of *Ctenopharyngodon idella* (grass carp) against *A. veronii*. The pathogenic *A. veronii* bacterium was isolated and cultivated, and its concentration was adjusted to 109 CFU/mL. Commercial feed pellets were processed into a powder, and adjuvants were separately added to create three different vaccine formulations. Fish were vaccinated by administering the feed-based vaccine via spraying and received the vaccinated feed twice daily. Immune responses were evaluated by measuring antibody titers and serum lysozyme activity. For the challenge test, vaccinated and control groups of fish were exposed to *A. veronii* to assess vaccine efficacy. The results demonstrated significantly higher antibody titers and serum lysozyme activity in the vaccinated groups compared to the control group, indicating an improved immune response. Furthermore, the vaccinated fish exhibited a remarkable 100% relative percent survival (RPS) rate after the *A. veronii* challenge, while the control group suffered from high mortality. Overall, this research highlights the potential of the monovalent spray feed-based vaccine against *A. veronii* for *C. idella*. The findings suggest that the vaccine likely enhances the fish's innate immunity, and when combined with modified adjuvants, it elicits a more robust protective response.

Keywords – *Aeromonas Veronii*, Infectious Diseases, Aquaculture, Vaccine Efficacy, Immune Response



EFFECTIVENESS AND IMMUNE RESPONSE OF MONOVALENT SPRAY BASED FEED VACCINE USING ALOE VERA AND PALM OIL AS ADJUVANT AGAINST *Aeromonas hydrophila* IN COMMON CARP (*Cyprinus carpio*)

Rehana Kausar^{*1}, Farzana Abbas^{*1}, Hafeez-ur-Rehman^{*1}, Saba Sana^{*2}, Nimra Mubeen^{*1}, Samama Jalil^{*1}, Maria Tayyaba^{*1}

¹ Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore, Pakistan

² Department of Microbiology, Ikram ul Haq Institute of Industrial Biotechnology, Government College University Lahore, Pakistan,

^{*}(farzanaabbas@uvas.edu.pk) Email of the corresponding author

Abstract – This study investigated the effectiveness and immune response of a monovalent spray-based feed vaccine with adjuvants against *Aeromonas hydrophila* in Common carp (*Cyprinus carpio*). Utilizing a completely randomized design, three treatment groups received vaccinated feed, while one control group received unvaccinated feed. Treatments included: T1 - commercial feed with vaccine without adjuvant, T2 - feed with commercial vaccine and 5% palm oil, T3 - commercial feed with vaccine and 5% Aloe vera oil. The control group (T0) received feed without vaccine. After 60 days, all groups were challenged with live *A. hydrophila* suspension, and relative percentage survival (RPS) was compared. Main parameters including white blood cell (WBC) count, red blood cells (RBC), hemoglobin, hematocrit, serum lysozyme activity, antibody titer, and histopathological analysis were significantly improved in vaccinated groups compared to the control ($P < 0.05$). Analysis of variance (ANOVA) and Duncan multiple range test (DMRT) were conducted at 5% test level. Post-challenge, groups T2 and T3 exhibited significantly lower mortality compared to T1 and T0. Both adjuvants positively influenced fish effectiveness and immune response against *A. hydrophila* infection, with Aloe vera oil demonstrating superior efficacy.

Keywords – *Aeromonas Hydrophila*, Aloe Vera Oil, Palm Oil, Adjuvant, Feed Based Vaccine, *Cyprinus Carpio*

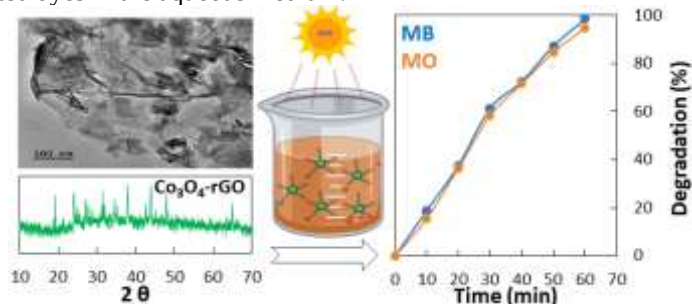
SYNTHESIS, CHARACTERIZATION AND EVALUATION OF PHOTOCATALYTIC ACTIVITIES OF Co_3O_4 -rGO FOR PHOTODEGRADATION OF DYES

Muhammad Saeed*, Asif Nisar

Department of Chemistry, Government College University Faisalabad, Pakistan

[*msaeed@gcuf.edu.pk](mailto:msaeed@gcuf.edu.pk)

Abstract – Water contamination with synthetic dyes is an escalating problem world wide. Herein, Co_3O_4 decorated reduced graphene oxide (Co_3O_4 -rGO) is reported as an effective heterogeneous photocatalyst for the decomposition of organic dyes. The synthesis of Co_3O_4 -rGO was confirmed by spectroscopic techniques including XRD, XPS, TEM, and FTIR. After characterization, the prepared Co_3O_4 -rGO composite was tested as a photocatalyst for the degradation of methylene blue and methyl orange. The photocatalytic efficiency of Co_3O_4 -rGO was found >95% after 60 minutes corresponding to 200 mg/L as the initial concentration of each dye. The photodegradation of MB and MO was confirmed by BOD and COD measurements. The experimental parameters like the re-usability of Co_3O_4 -rGO, the effect of catalyst dosage, and the effect of dye concentration on photocatalytic activity were also investigated. The photocatalytic activity of Co_3O_4 -rGO for degradation of MB was 2.13 and 3.43-fold than Co_3O_4 and rGO, respectively. Similarly, the photocatalytic activity of Co_3O_4 -rGO for degradation of MO was 2.36 and 3.56-fold than Co_3O_4 and rGO, respectively. Hence, the Co_3O_4 -rGO was found a an efficient and reusable photocatalyst for the decomposition of selected dyes in the aqueous medium.



Keywords – Methylene blue, methyl orange, Co_3O_4 -rGO, photodegradation



The Transformative Influence of Artificial Intelligence in Healthcare and the Obstacles in Novel Drug Development: A Focus on Glibenclamide

Hassina Fisli^{1*} and Mohamed Lyamine Chelaghmia ²

¹Material sciences department/Laboratory of Applied Chemistry (LCA), 8 mai 1945 Guelma University, Algeria

² Process Engineering Department/ Materials analysis and engineering laboratory (LAIGM), 8 mai 1945 Guelma University, Algeria

*(fisli_ha@yahoo.fr; fisli.hassina@univ-guelma.dz)

Abstract – Artificial intelligence (AI) is transforming healthcare by expediting the discovery of potential new medications through machine learning algorithms. These algorithms simulate drug interactions with biological targets, enhancing drug design efficacy. In medical diagnostics, AI systems assist physicians in promptly and accurately diagnosing illnesses by analyzing clinical data and medical images. Furthermore, AI facilitates treatment personalization by examining patients' genetic profiles. AI systems streamline electronic medical record management, simplifying clinical decision-making. Nonetheless, AI encounters constraints in new drug design. While it accelerates promising compound identification, it cannot entirely supplant human involvement in drug development and testing. Additionally, AI may present challenges regarding data privacy and liability in case of errors. Glibenclamide, a widely used antidiabetic agent, exemplifies these challenges. Despite its efficacy, glibenclamide's side effects and usage limitations underscore the necessity of developing new therapies using AI and similar technologies to address type 2 diabetes patients' needs. AI complements human efforts but does not replace them. It furnishes potent tools for expediting drug research and design, yet human intervention remains crucial in ensuring treatment safety and efficacy. Researchers and clinicians are indispensable for result interpretation, ethical decision-making, and treatment responsibility. Ultimately, AI's full potential in healthcare will be realized through collaboration between AI and healthcare professionals.

Keywords – Artificial Intelligence, Healthcare, Drug Discovery, Limitations, Glibenclamide, Type 2 Diabetes.



Green Hemi-synthesis and Machine Learning-Based Prediction of Anti-Tumor Activity of Novel Chromeno-Pyrimidine Derivatives

Ramzi Maadadi^{*1,2,3}, Rafik Menacer^{2,3}, Liza Saher and², Zahia Kabouche¹ and Khaldoun Bachari²

¹université des frères Mentouri-constantine 1, département de chimie, laboratoire d'obtention des substances thérapeutiques (lost), campus chaabet-ersas, Constantine, Algeria

²centre de recherche scientifique et technique en analyses Physico-chimiques (CRAPC) Bou-ismail, Tipaza, Algeria

³Centre de recherche en Sciences Pharmaceutiques (CRSP), Constantine, Algeria

^{*}(Rmaadadi@gmail.com)

Abstract – Two new chromeno-pyrimidine derivatives were explored and prepared through an '*in situ*' hemisynthesis reaction of (thio)barbituric acids with an α,β -unsaturated aldehyde. This reaction was conducted without a catalyst, in both water and water/ethanol mixtures. The compounds obtained were characterized using advanced spectroscopic techniques. Machine learning techniques were employed to predict the anti-tumor activity of these compounds. The predictions generated promising results, indicating activity against various cancer cell lines, including MCF-7 (breast), DLD-1, HT-1080 (colorectal), T47D, K562 (leukemia), HL-60 (leukemia), HT29 (colorectal), MDA-MB-231 (late-stage breast cancer), SKBR3 (breast), A-375 (melanoma), and A-549 (lung carcinoma). Notably, the compounds exhibited significant activity against multiple cancer types, suggesting their potential as effective anti-tumor agents. These findings lay the foundation for further experimental validation of the predicted activity and exploration of the underlying mechanisms, with implications for future applications in cancer research and therapeutic development. Additionally ADME property calculations indicated no violation of Lipinski's rule for both compounds.

Keywords – Green chemistry; Hemisynthesis; Chromene; Machine learning; Anti-Cancer;ADME



Machine Learning-Based Prediction of De Novo Active Molecules on K562 Leukemia Cell Line Using a Random Forest Model

Menacer Rafik^{*1,2}, Maadadi Ramzi^{1,2}, Bouchekioua Saad¹ and Meliani Saida¹

¹ Centre de recherche en Sciences Pharmaceutiques (CRSP), Constantine, Algérie.

² Centre de Recherche Scientifique et Technique en Analyses Physico-Chimiques (CRAPC), Tipaza, Algeria

^{*}(ttottodz@gmail.com) Email of the corresponding author

Abstract – Synthesizing potent molecules for cancer treatment poses significant challenges due to the complex nature of biological systems. This study undertakes a rigorous analysis of K562 Leukemia cell-line data (10013 measurements), focusing on Half-maximal inhibitory concentration (IC₅₀) values obtained from online databases. Meticulous data cleaning and normalization to nanomolar (nM) units resulted in a refined dataset. Custom classification unveiled insights into compound activity levels. Utilizing molecular descriptors and feature selection, a predictive model was developed using the RandomForestClassifier algorithm, achieving 71% accuracy. This analysis sheds light on compound potency and chemical properties, crucial for drug discovery. Moreover, our approach integrates background-guided synthesis, leveraging advanced artificial intelligence to optimize molecular design. Notably, our methodology facilitated the successful synthesis of two promising chromenes derivatives compounds from an initial set, showcasing the effectiveness of our strategy in overcoming synthesis challenges.

Keywords – K562 Leukemia cell-line, Machine Learning, Random Forest, Python



Analysis of Two SRMs at the Same Power Density Per Volume using ANSYS/Maxwell

Bekir Gecer*, N. Fusun Oyman Serteller² and Alper Nabi Akpolat³

¹Mechatronic Programme, Atasehir Adiguzel Vocational School, Turkey

²Electrical and Electronic Engineering,, Marmara University, Turkey

³Electrical and Electronic Engineering,, Marmara University, Turkey

*(bekirgecer@adiguzel.edu.tr) Email of the corresponding author

Abstract – Switched Reluctance Motors (SRMs) are old member of the electric machine family. Nowadays, SRM is getting popular in academic fields and in industry, especially in electric vehicles, due to the advantages of the offer such as high torque at low speed, simple structure and development of semiconductor technologies such as Mosfet and IGBT components. This paper proposes compare two different SRMs at same power density per volume that are SRM 1 and SRM 2 about efficiency and torque parameters using ANSYS/Maxwell software program. So we have focused on to give same or near input values the motors to analyze and they are designed at same power density to comparison. Design parameters of motors are obtained from optimization studies. Analysis results are shown that the SRM 1 is %3.64 efficient than the SRM 2 and also, the SRM 1 can produce 8.42 Nm torque more than the SRM 2. But the torque ripple of the SRM 1 is more than the SRM 2 torque ripple. As a result, the SRM 1 is better than SRM 2 for the electric vehicle applications such as e-scooter, e-bicycles and e-drones. For the future studies, a torque control system can be applied to minimize torque ripples for better performances.

Keywords – Analysis, Ansys, Efficiency, Torque, SRM.



The courtyard concept in neovernacular housing architecture of arid regions: between tradition and modernity. A case study of Biskra region

Fouzia Meliouh^{1*}, Mohamed Yahia Amran Necib, Adel Sekhri¹, Khalissa Hamel¹

¹ LACOMOFA Laboratory, Architecture Department, Mohamed Khidher University Biskra –Algeria

* Email of the corresponding author: f.meliouh@univ-biskra.dz

Abstract – This article investigates the integration of the courtyard concept into neovernacular residential architecture in arid regions, focusing on the Biskra region in Algeria. The research examines how certain contemporary architectural practices in arid climates aim to reconcile the traditional courtyard model with modern housing requirements and environmental considerations. The study is based on a post-occupational evaluation P.O.E. of a neovernacular housing project in Biskra, assessing the spatial, environmental, and socio-cultural dimensions of courtyard integration. The methodology combines architectural analysis, environmental psychology, and spatial syntax to understand the courtyard's role in contemporary neovernacular design. This approach provides a multidimensional analysis of courtyards, evaluating their role in strengthening community, ensuring privacy, and enhancing environmental performance in Biskra's arid climate. The findings highlight the alteration of the courtyard's conventional role following an unsuitable conceptual reinterpretation. The article advocates for a nuanced adaptation of the courtyard concept, recommending designs that respect traditional wisdom while embracing modern needs for comfort, privacy, and environmental sustainability. This case study contributes to the broader discourse on sustainable architecture in arid regions, offering insights into the complex interaction between tradition and modernity in the neovernacular architectural approach. It emphasizes the potential of culturally and climatically informed design principles in creating housing that is both environmentally responsive and socially significant.

Keywords – Neovernacular Housing Architecture, Courtyard Housing, Arid Regions, Sustainable Design, Post-Occupational Evaluation P.O.E., Environmental Psychology.



Mechanical and Anti-corrosive Properties of Electrodeposited Nickel Coatings Reinforced with Al₂O₃ Nanoparticles

Katia Nasri ^{*}, Nadia Ait Ahmed ², Hamida Issaadi ³ and Nabila Aliouane ⁴

¹Chemistry /Laboratory of Electrochemistry, Corrosion and Energy Valorization, University of A. Mira Bejaia, Algeria

²Chemistry /Laboratory of Electrochemistry, Corrosion and Energy Valorization, University of A. Mira Bejaia, Algeria

³Chemistry /Laboratory of chemistry, University of A. Mira Bejaia, Algeria

⁴Process Engineering/ Laboratory of Electrochemistry, Corrosion and Energy Valorization, University of A. Mira Bejaia, Algeria

*katia.nasri@univ-bejaia.dz

Abstract – The need to improve coatings for better properties has allowed the development of composite electrolytic deposits, by incorporating solid particles into the structure of nickel, such as Al₂O₃ known for its remarkable hardness and chemical stability. Ni-Al₂O₃ composite coatings were electrodeposited from a Watts-type bath containing particles in suspension. Structure and texture studies were done by X-ray diffraction. The corrosion and passivation behaviors of the prepared coatings were investigated in 3.5% NaCl solution by a potentiostat-galvanostat device. The techniques used are those of lost mass and polarization. The results obtained revealed high corrosion resistance of composite deposits.

Keywords – Corrosion, Nickel, Al₂O₃, composite coatings, Resistance



First principle study of structural, electronic and magnetic properties of 3d TM doping on MnI₃ monolayer: application in data storage and spintronic devices

Norelhouda Salah*, Hakima Yahia²

¹ Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

² Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

*(salah.nor-elhouda@univ-guelma.dz) Email of the corresponding author

Abstract – Over the past decades, Spintronic, has sparked enormous interest by manipulating the spin degrees of freedom in order to involve transmission and storage of information which leads to provide electronic devices with high quality characteristics. The development of effective ferromagnetism in two dimensional van der Waals materials encouraged researchers to enrich the field of spintronic by providing materials with nanoscale properties. One of the most important of these materials is two dimensional half-metals (HMs), which have a large band gap in one spin channel, and a metal behavior in the other one. They are perfect spintronic materials which exhibits fully spin polarization. In this work, by using first-principles, calculations, we investigate an intrinsic magnetic ordering in the 2D monolayer MnI₃ which belongs to transition metal trihalides family and we enhanced MnI₃ via substitutional strategy with 3d transition metals to adjust its properties. We concentrate on the investigation of structural, electronic and magnetic properties of MnI₃ monolayer and 3d TM (TM = Sc and Ti) doped MnI₃ systems. We have predicted that MnI₃ monolayer is a stable ferromagnetic Dirac half metal (FDHM). Our results manifest that doping of MnI₃ monolayers with Sc and Ti atoms maintains the half-metallic behavior with enhancement of electronic and magnetic properties. Therefore, MnI₃ monolayer and TM-doped MnI₃ systems could be interesting candidates for spintronic applications.

Keywords – MnI₃ monolayer, Spintronic, ferromagnetism, TM doping, Half-metallic



Electronic and magnetic properties of 2D Chromium trihalides CrX₃ (X= I, Cl, Br, F) monolayers: within GGA and GGA+U framework

Norelhouda Salah*, Hakima Yahia²

¹ Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

² Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

*(salah.nor-elhouda@univ-guelma.dz) Email of the corresponding author

Abstract – Two-dimensional (2D) intrinsic ferromagnetic (FM) semiconductors are crucial to develop low-dimensional spintronic devices. By using first principles calculations, we predict that monolayers chromium trihalides (CrX₃, X = F, Cl, Br and I) constitute a series of stable 2D intrinsic FM semiconductors and they can be easily exfoliated from the bulk crystal, due to a low cleavage energy. Electronic structure calculations using the GGA and GGA+U indicate that CrX₃ are half semiconductors with indirect gaps and their valence and conduction bands are fully spin-polarized in the same spin direction. Furthermore, CrX₃ are found to possess a large magnetic moment of 3 μ_B per formula unit and a sizable magnetic anisotropy energy, which implies possible spintronic applications. Moreover, the Curie temperatures of CrX₃ are also predicted using Mean-Field approximation. The unique combination of robust intrinsic ferromagnetism, half semiconductivity and large magnetic anisotropy energies renders the CrX₃ as promising candidates for next-generation semiconductor spintronic devices.

Keywords – Chromium trihalides (CrX₃), Spintronic, ferromagnetism DFT, Half-semiconductivity



Systematic study of electronic and magnetic properties of Vanadium trihalides monolayers VX_3 ($X= Cl$ and I) with unusual Dirac half-metallicity and a robust ferromagnetism

Norelhouda Salah*, Hakima Yahia²

¹ Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

² Université 8 Mai 1945 Guelma, Laboratoire de Physique des Matériaux (L2PM), Algeria

*(salah.nor-elhouda@univ-guelma.dz) Email of the corresponding author

Abstract – Two-dimensional (2D) materials, have great potential applications for high performance electronic and spintronic devices. The Dirac half-metals have attracted considerable attention. They are characterized with a gap in one spin channel and a Dirac cone in the other. Based on density functional theory and combined with the Hubbard U approach (DFT+ U_{eff}), we investigate the electronic and magnetic properties of Vanadium trihalides monolayers VX_3 ($X= Cl$ and I). Our results show that VCl_3 and VI_3 monolayers have intrinsic ferromagnetism and half-metallicity in which they possess a rather rare half-metallic Dirac point around the Fermi level with just one spin channel. The mean-field approximation demonstrates that the Curie temperatures of VCl_3 and VI_3 monolayers are only 90 K and 120 K, respectively. However, the Curie temperature can be increased up to room temperature by carrier doping. By exhibiting these unique electronic and magnetic properties, these VCl_3 and VI_3 could serve as potential candidates for spintronic applications.

Keywords – 2D vanadium trihalides, Spintronic, ferromagnetism, Dirac Half-metallicity



Heat Wave and the future risk in urban areas

Tanja Porja*, Margarita Ifti

¹Department of Physics/Faculty of Natural Sciences, University of Tirana, Albania

¹Department of Physics/Faculty of Natural Sciences, University of Tirana, Albania

*(tanja.porja@fshn.edu.al)

Abstract – The impact of climate change has already been observed in the territory of Albania, mainly in the form of extreme weather events, causing a considerable damage to the country's economy. In addition, the effect that global warming will bring to the frequency and severity of these events will bring a higher climate risk in the future. Therefore, a more detailed analysis is needed regarding these events, in terms of the long-term quantifying in order to have a more objective assessment of the future climate risks in the country. This study focuses on the analysis of the heat wave events in the urban areas of Albania; a quite frequent phenomenon recorded in recent years. One of the most important urban areas very often faced to the heat wave phenomenon is the capital of the country, Tirana with the highest population in the entire country (near to 40% of the total population) and recently it also has become a tourist destination of million visitors. The study of the heat waves is based in analyses of the frequency, the heat duration and heat intensity of the phenomenon in order to have an objective picture regarding the actual risk of heat waves and also to have signals of the future heat risk. The data and information resulting from this study may be used as a valuable input in assessing both the impact of the future climate risk from the heat waves and the impact to the future touristic flows in Albania.

Keywords – Heat Waves, Urban Heat, Heat Duration, Wave Peak, Extremely Hot Waves



Valorization and characterization of spirulina (*Arthrospira platensis*)

SAADA Zakia*, CHAREF Nassira¹, TAMER Fatma Zohra², BLAID Bouthayna³, ELLEUCH Jihen⁵, NASRI Hicham⁶

Bio marine department/ Ecosystem Biodiversity and Pollution Laboratory, Chadli Ben Jdid El Tarf University, Algeria

Z.saada@univ-eltarf.dz

Abstract – The valorization of algal biomass is considered one of the most interesting international programs for exploiting the marine environment. Microalgae already has a recognized commercial value in a variety of fields, including food, cosmetics, textiles, paper, pharmaceuticals and medicine. They are a major source of polysaccharides (agars, carrageenans, alginates) used as emulsifiers, thickeners and stabilizers in the food industry. Their antibiotic, antiviral and anti-inflammatory properties make them highly valued in pharmacy and medicine. This study represents the genus *Spirulina* or *Arthrospira*, which is a filamentous cyanobacterium that includes an interesting bacterium called *Spirulina platensis* (or *Arthrospira platensis*). The aim is to culture the original Peru strain in a prepared culture medium containing several chemical reagents, the main one being sodium bicarbonate Na HCO₃. It is placed in a culture chamber at 35 C° temperature and 18 light/6 dark cycle in the presence of an oxygen pump for aeration and agitation. The cultivated *Spirulina* is harvested after 05 days of cultivation, filtered, pressed and freeze-dried; the powder obtained is subjected to chemical and photochemical assays to discover its protein, lipid, carbohydrate, and phycocyanins, flavonoid, mineral and trace element content, and vitamins as a natural nutritional and therapeutic source. The concentration of phycocyanin in spirulina varies between 0.8-0.45 mg /ml, solvent extraction gives higher concentrations of phycocyanin than other methods.

Keywords – *Algae, Valorization, Spirulina, Cyanobacteria, Culture.*



Investigation of the structural and optoelectronic properties of 1D Van der Waals heterostructures of single-walled carbon nanotubes encapsulating linear carbon chains: Towards new 1D hybrid materials for higher efficiency and stability

Soufiane Elhadfi^{1*}, Jamal Chenouf¹, Brahim Fakrach¹ and Hassane Chadli¹

¹Laboratory for the Study of Advanced Materials and Applications (LEM2A), Moulay Ismail University, FSM-ESTM
Meknes, Morocco

(so.elhadfi@gmail.com)

Abstract – The advancement of organic solar cells (OSCs) represents a promising solution to meet the growing global demand for sustainable and renewable energy sources. This potential is rooted in their unique characteristics, such as flexibility, lightweight construction, scalability, semi-transparency, and cost-effective manufacturing processes via printing. These strides are driven by an innovative approach involving the encapsulation of carbon chains within carbon nanotubes, aimed at enhancing the performance and energy efficiency of OSCs. Within this framework, we investigated the structural and electronic properties of various carbon chains with different lengths and terminations. Employing the Lenard-Jones (LJ) potential, we determined the optimal diameter of carbon nanotubes to encapsulate these linear chains. Subsequently, utilizing density functional theory (DFT) and Quantum Espresso software with the generalized gradient approximation (GGA) and Perdew-Burke-Ernzerhof (PBE) function, we analyzed the optoelectronic characteristics of resulting heterostructures. Our computational results offer crucial theoretical insights, underscoring the potential suitability of linear chain/carbon nanotube heterostructures as robust and efficient components for organic solar cell devices.

Keywords – DFT , 1D Van der Waals heterostructures , Organic solar cells (OSCs) ,Hybrid Materials



Human Instance Segmentation Based on Omega- Shape Using Deep Learning

Huma Sheraz^{*}, Zuhaib Ahmed Khan² and Muhammad Awais³

¹Department of Software Engineering, Capital University of Science and Technology Islamabad, Pakistan

²Department of Computer Science, Mirpur University of Science and Technology Mirpur AJ&K, Pakistan

³ Department of Software Engineering, Capital University of Science and Technology Islamabad, Pakistan

^{}(Huma.sheraz@cust.edu.pk) Email of the corresponding author*

Abstract – Human detection and segmentation in an unconstrained environment is a very important and difficult task, having many important applications including tracking human beings, pedestrian detection, head count etc. Human detection in a single object environment is quite easy, but the problem becomes quite cumbersome in a crowded and cluttered environment. Most of the existing algorithms work on the detection and segmentation of the whole person in a scene. However, the performance of such algorithms degrades in case of occlusion and cluttered environment. To increase the performance in such an environment a technique is available that detects a distinct part of the human body which is “omega shape” instead of the full human body. However, the detection of bounding box also includes background pixels which limit the performance of the high-end applications such as tracking. Therefore, the objective of this research is to accurately segment the omega shape, so that the high-end applications have no background clutter in the human appearance model. We have trained and evaluated Mask R-CNN and YOLO+UNET and got a trade-off between accuracy and computation cost. The testing accuracy of Mask R- CNN and YOLO+UNET is 92.6% and 88.4%, while the computation cost is 6fps and 29fps, respectively.

Keywords – Deep Learning, Omega-shape, Machine Learning, Pedestrian Detection, Instance Segmentation.



Introducing Large Language Models in Communication and PR Education: A Mixed Methods Pilot Study

Sebastian Fitzek¹, Bârgăoanu Alina²

¹Health Services Research, Faculty of Medicine/Dentistry, Danube Private University, Steiner Landstraße 124, AT-3500, Krems-Stein, Austria.

² National University of Political Studies and Public Administration, Bucharest, Romania

*(sebastian.fitzek@dp-uni.ac.at) Email of the corresponding author

Abstract – This mixed methods study examined the potential of large language models (LLMs), such as ChatGPT, to improve academic writing quality among 30 higher education communication students. Participants independently composed scientific abstracts before refining them using ChatGPT. Blinded expert evaluators subsequently rated the original and LLM-modified abstracts and found significant improvements in the quality of the ChatGPT versions (Evaluator 1: $p=0.0024$; Evaluator 2: $p=0.0462$). Surveys and interviews highlighted LLM-associated gains in clarity, conciseness, and efficiency, although challenges adhering to academic standards were noted. The results quantify writing quality changes while capturing nuanced student perceptions, providing evidence-based insights into responsibly integrating AI writing assistants to amplify skills. The evaluations revealed significant disparities in perceived clarity and conciseness advancements, confirming the pedagogical value of the ChatGPT. Further cross-disciplinary research could augment the generalizability of the findings. The development of ethical usage guidelines focused on promoting human skills is critical. This timely study provides a balanced outlook on harnessing AI tools such as ChatGPT to boost academic writing while maintaining integrity.

Keywords – Large Language Models, ChatGPT, Academic Writing Quality, Higher Education, Pedagogical Implications



Shaping Future Practices: Understanding the Perception of German-speaking Medical and Dental Students of Artificial Intelligence – an Online Survey

Sebastian Fitzek¹, Kyung-Eun (Anna) Choi^{1,2}

¹Health Services Research, Faculty of Medicine/Dentistry, Danube Private University, Steiner Landstraße 124, AT-3500, Krems-Stein, Austria.

²Center for Health Services Research, Seebad 82/83, 15562 Rüdersdorf b. Berlin, Brandenburg Medical School, Neuruppin, Germany

³Department/Research Institute, University, Country

*(sebastian.fitzek@dp-uni.ac.at) Email of the corresponding author

Abstract – Background: AI's growing impact on healthcare necessitates understanding future medical professionals' perspectives on its integration. This study aimed to investigate the opinions of German-speaking medical and dental students regarding AI in healthcare.

Methods: A 28-question survey was used to assess AI knowledge, attitudes, emotions, and open-ended feedback among students in Austria, Germany, and Switzerland from April to July 2023. Data analysis employed descriptive statistics, correlations, and t tests to examine relationships and differences among variables.

Results: Of the 409 valid responses, a demographic breakdown included 203 men, 186 women, 12 nonbinary individuals, and 8 unspecified individuals, with a mean age of 23.13 years. Significant variations in AI understanding were found across academic levels and genders, with only 18.2% of students reporting formal AI training. Strong correlations emerged between tech-savviness and AI familiarity ($r=0.67$) and between confidence in finding reliable AI information and positive attitudes toward AI ($r=0.72$). Qualitative analysis revealed a desire for AI curricula that addresses potential biases and emphasizes human-centric skills.

Conclusion: This study underscores the necessity for comprehensive AI education in medical and dental programs to address knowledge gaps and shape perceptions for an AI-driven healthcare future. Fostering AI literacy and confidence is crucial for ethical and effective integration and for preparing the next generation of healthcare professionals.

Keywords – Artificial Intelligence, Healthcare, Medical Education, Perception, Tech-Saviness



An investigation into the adsorption of methylene blue dye using activated carbon made from leftover palm fiber

Mecheri Razika^{*}, Bemenine Abdelkader², Saidat Mustapha³, Zobeidi Ammar⁴, Atia Salem⁵

^{1,4,5} Pollution & Waste Treatment Laboratory (PWTL), University of Ouargla, P.O. Box 511, Ouargla 30000, Algeria

^{2,3} Valorisation and Promotion of Saharan Resources laboratory (VPRS), University of Ouargla, P.O. Box 511, Ouargla 30000, Algeria

^{*} mecheri.razika@univ-ouargla.dz

Abstract – The widespread use of chemical dyes has increased their presence with hydro-industrial palm residues, affecting the ecosystem and causing the problem of water pollution. This prompted an attempt to exploit organic residue into active coal for the purpose of protecting the environment from pollution.

This study focuses on the transformation of palm fiber into activated carbon and its use in preserving the environment from pollution and removing dyes from textile factories and other industries as it is less expensive, more sustainable and environmentally friendly and an effective maze material with a large adsorption area giving it high efficiency to remove methylene blue dye from aquatic solutions. Using active carbon prepared from palm fiber.

Keywords – Chemical Dye, Active Carbon, Palm Fiber, Methylene Blue, Pollution.



Harnessing Sewage Sludge for Sustainable Concrete Manufacturing

BOUSLAH Mahmoud¹, MAZA Mekki², RAHMOUNI Zine EL Abidine³ and TEBBAL Nadia⁴

¹Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

²Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

³Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

⁴Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

Mahmoud.bouslah@univ-msila.dz¹ / Mekki.maza@univ-msila.dz² / zineelabidine.rahmouni@univ-msila.dz³ / nadia.tebbal@univ-msila.dz⁴

Abstract – Wastewater generated from wastewater treatment poses challenges for disposal due to high organic content and potential environmental impacts but alternative wastewater treatment options are being developed in concrete production research. This abstract looks at the feasibility and potential benefits of incorporating wastewater into concrete mixes. Through rigorous characterization and processing, sewage sludge can act as a filler, providing long-term benefits and improving concrete properties. Challenges such as changes in water and it is a matter of internal and regulatory constraints of the dirt. Yoga: Materials- Can address weed-management issues while promoting efficiency and sustainability.

Keywords – Sewage Sludge, Concrete Production, Sustainability, Resource Recovery, Environmental Impact.



The utilization of macrophyte in the biocontrol of cyanotoxins

Tamer Fatma Zohra¹, Charef Nassira¹, Zaidi Hadjer¹, Nouri Nada¹, Belaid Boutheina¹, Saada Zakia¹, Nasri Hichem¹

1.Laboratory of Biodiversity and pollution of Ecosystems, Department of biology, University of Chadli Bendjdid El Tarf, Algeria,

E-mail: tamer-fatma-zohra@univ-eltarf.dz

Abstract - Eutrophication poses a significant management challenge in shallow lakes globally, primarily because it triggers widespread cyanobacterial blooms, leading to water quality issues in lakes and reservoirs worldwide. Cyanobacterial toxins are discharged into the surrounding environment through the senescence and lysis of blooms. Three cyanobacterial genera that are potentially toxigenic and known for forming blooms are *Microcystis*, *Anabaena*, and *Oscillatoria*. These genera pose hazards due to their ability to produce secondary metabolites and endotoxins. *Microcystis* blooms pose a threat to aquatic ecosystems at various levels, exerting direct or indirect impacts on heterotrophic bacteria, phytoplankton, zooplankton, invertebrates, and fish. The current research focuses on harnessing the allelopathic properties of selected brackish water-adapted submerged aquatic macrophytes to mitigate bloom-forming cyanophytes. This is being investigated through laboratory bioassay experiments. In our study, we utilized bioactive compounds extracted from *Nymphaea alba* to assess their impact on the growth of *Microcystis* spp. The findings indicate a decrease in the cell density of *Microcystis* spp. compared to the control group, suggesting that these compounds hold promise as a potential remedy for mitigating contamination of water bodies by harmful blooms.

Keywords – *Nymphaea alba*, *Microcystis*, *Anabaena*, and *Oscillatoria*, harmful blooms, Eutrophication.



Effects of magnetic field on double-diffusive natural convection in NEPCM filled a square cavity

Nesrine Rachedi* and Messaoud Guellal

Laboratory of Chemical Process Engineering, Faculty of Technology, Ferhat ABBAS Sétif-1 University, Algeria

*nesrine_rachedi@yahoo.fr

Abstract – The finite volume method (FVM) was used to thoroughly study the effects of magnetic fields on double-diffusive natural convection in a square cavity filled with nanofluid-enhanced phase change material (NEPCM). In this work, the cavity geometry is a square enclosure containing NEPCM, with the vertical walls exposed to differential heating and the horizontal walls thermally insulated. In addition, the cavity receives a steady and homogeneous external magnetic field that is aligned horizontally and vertically. This magnetic field modulates the convective flow patterns and heat transfer parameters inside the cavity.

To provide reliable numerical simulations, an upgraded version of the finite volume approach is used. This formulation takes into consideration the interactions between magnetic fields, fluid movement, heat transfer, and phase transition events that occur inside the NEPCM. The finite volume approach, which discretizes the governing equations of mass, momentum, energy, and magnetic induction, allows flow velocities, temperature distributions, and magnetic field intensities to be calculated over the cavity domain. The effects of magnetic fields on NEPCM's double-diffusive natural convection are quantified via systematic numerical simulations. This involves looking at changes in flow topologies, heat transfer rates, and phase change dynamics caused by different magnetic field intensities and orientations.

Keywords – Double Diffusion, Nepcm, Mhd, Finite Volume, Magnetic.



Study the adsorption of various organic dyes of aqueous solutions using local mineral clay

Mecheri Razika ^{*}, Zobeidi Ammar ², Atia Salem ³, Bemenine Abdelkader ⁴, Saidat Mustapha ⁵ and Hafad Yacine ⁶

^{*,2,3} Pollution & Waste Treatment Laboratory (PWTL), University of Ouargla, P.O. Box 511, Ouargla 30000, Algeria

^{4,5,6} Valorisation and Promotion of Saharan Resources laboratory (VPRS), University of Ouargla, P.O. Box 511, Ouargla 30000,

[*mecheri.razika@univ-ouargla.dz](mailto:mecheri.razika@univ-ouargla.dz)

Abstract –This study investigated the local clay in southern Algeria's susceptibility to the adsorption of specific dyes in its aquatic fields, using two distinct types of dyes, In order to obtain clay minerals with small diameters of less than two microns, the clay was first purified. The RSM surface response model was used to study the clay's physiochemical properties and to discuss the impact of the factors (IRFT, MEB) through experimental analyses on the adsorption phenomenon (mass, temperature, concentration, pH, and Contact time).

Keywords – Clay Minerals, Adsorption, Dyes, Purified, RSM



A SUPERVISED LEARNING APPROACH WITH RESIDUAL ATTENTION CONNECTIONS

Hamza Ali^{1*}, Fazal Muhammad¹, Talha Ali², Muhammad Ismail¹

¹Department of Electrical Engineering, University of Engineering & Technology, Mardan, KPK (Pakistan)

²Department of Electrical Engineering, University of Engineering & Technology, Peshawar, KPK (Pakistan)

(enqr.hamarwat@gmail.com)*

Abstract – Our study aims to improve speech quality despite background noise, which often disrupts clear communication. We focus on developing efficient and effective models that work well on devices with limited resources. We draw inspiration from computational auditory scene analysis techniques to train our models to differentiate speech from background noise while keeping computational demands low. We introduce two models: CRN-WRC (Convolutional Recurrent Network without Residual Connections) and CRN-RCAG (Convolutional Recurrent Network with Residual Connections and Attention Gates). Our thorough testing shows that our models significantly enhance speech quality and understanding, even in noisy environments with varying background noise levels. Notably, the CRN-RCAG model consistently outperforms the CRN-WRC, particularly in handling untrained noise types. We achieve impressive results by integrating residual connections and attention gates into our models while maintaining computational efficiency.

Keywords – Speech Enhancement, Convolutional Recurrent Network, Supervised Learning, Gated Recurrent Unit, Residual-Connection



Efficacy of Mindfulness-Based Stress Reduction on Mental Health in Patients with Coronary Artery Disease: A Systematic Review of Randomized Controlled Trials

Imtiyaz Alim Mir ^{1*}, Syeda Humayra ², Tee Rong Yuen ³ and Anil T Jogn ⁴

¹ Department of Physiotherapy, M Kandiah Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang 43000, Selangor Malaysia; Lincoln University College, Department of Health Sciences, Petaling Jaya 47301, Selangor, Malaysia

² Makmal Pemprosesan Imej Kefungsian (Functional Image Processing Laboratory), Department of Radiology, University Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, 56 000 Cheras, Kuala Lumpur, Malaysia

³ Department of Physiotherapy, M Kandiah Faculty of Medicine and Health Sciences, Universiti Tunku Abdul Rahman, Kajang 43000, Selangor Malaysia

⁴ College of Physiotherapy, Dayananda Sagar University, Bengaluru 560111, India; Faculty of Health Scienc; Lincoln University College, Department of Health Sciences, Petaling Jaya 47301, Selangor, Malaysia

Abstract – Background: Globally, coronary artery disease (CAD) and mental illnesses are among the primary causes of morbidity and mortality. Adopting lifestyle changes is pivotal in the management and prevention CAD that enhances the cardiovascular well-being, diminishes risk factors, and boosts the success of medical treatment. This study aimed to investigate the efficacy of mindfulness-based stress reduction (MBSR) on mental health among coronary artery disease patients by synthesizing the current literature. **Methods:** A systematic review and meta-analysis of randomized controlled trails (RCTs) that studied the effect of MBSR on anxiety, depression and/or stress among CAD patients was conducted by searching 4 electronic databases (PubMed, CENTRAL, Scopus and Science Direct) from inception to December 2023. Quantitative analysis of eligible studies was carried out followed by calculation of effect size for variables of interest. **Results:** Seven RCTs involving 559 participants with a mean age of 57.6 ± 4.9 met the prespecified eligibility criteria. Six studies reported MBSR had a significant effect on anxiety and depression ($p=0.001-0.05$), and 2 trials indicated a significant reduction in stress score ($p= 0.001-0.05$) compared to control groups. Gender imbalances were observed in most of the studies and ethnicity of participants was not reported in 3 trials. While the methodological quality of the trials was generally satisfactory, all studies lacked allocation concealment and blinding of outcome assessors. Additionally, issues such as small sample size, lack of long-term follow-up may have potentially compromised the validity of the trials. **Conclusion:** MBSR is beneficial for CAD patients in improving their mental health. Nevertheless, it is imperative to conduct more rigorous and robust studies with a larger sample, equal gender ratio and long-term follow-up to accurately measure the effectiveness of this intervention.

Keywords – Anxiety, Coronary Artery Disease, Depression, Mindfulness-Based Stress Reduction, Stress



Ejection system for the operation of oil wells

Oleksandr Panevnyk*, Andriy Smerechuk

*Department of Oil and Gas Machines and Equipment,
Ivano-Frankivsk National Technical University of Oil and Gas, Ukraine*

*(o.v.panevnik@gmail.com)

Abstract – An ejection system for the operation of oil wells in the form of a series connection of low-pressure and high-pressure jet pumps has been developed. The working nozzle of the high-pressure jet pump is connected to the pressure line of the ground pumping unit, the receiving chamber is connected to the packing area of the well, and the diffuser is connected to the working nozzle of the low-pressure jet pump. The receiving chamber of the low-pressure jet pump is connected to the under-packing area of the oil well, and the diffuser is connected to the formation fluid discharge line. A low-pressure jet pump implements the process of direct extraction of well products. The presence of a high-pressure jet pump creates an additional circulation circuit of the working flow, the flow rate of which exceeds the productivity of the ground pumping unit. The increase in the flow rate at the entrance to the working nozzle of the low-pressure jet pump allows to intensify the process of inflow from the productive horizon and further transportation of the well products through the riser pipe channel. At the same time, the growth of the flow rate of the well takes place at the constant consumption of the ground pumping unit, as a result of which the cost of oil production decreases and the duration of profitable exploitation of hydrocarbon deposits increases. The improved design of the ejection system is a development of the hydrojet method of operating oil wells.

Keywords – Oil Production, Well, Ejection System, Jet Pump, Injection Coefficient



Blowing-up solutions for time-fractional Generalized Kuramoto-Sivashinsky Equations on a bounded domain

Abdelatif Boutiara*

¹University of Ghardaia, Department of mathematics and informatics, Algeria, boutiara_a@yahoo.com

*(boutiara_a@yahoo.com) Email of the corresponding author

Abstract – This paper is devoted to the study of initial-boundary value problems for time-fractional analogues of Generalized Kuramoto-Sivashinsky equation on a bounded domain. Sufficient conditions for the blowing-up of solutions in finite time of aforementioned equations are presented. We also discuss the maximum principle and influence of gradient non-linearity on the global solvability of initial-boundary value problems for the time-fractional Burgers equation. The main tool of our study is the Pohozaev nonlinear capacity method. We also provide some illustrative examples.

Keywords – Caputo Derivative, Time-Fractional Generalized Kuramoto-Sivashinsky Equation, Blow-Up.



Influence of the Addition of PVC Residue Chips and Polypropylene Fibers on the Thermal Insulation Properties of Concrete

Rafik El Arslene DRA^{*1}, Zahira CHAIEB².

¹Departement of energy and process engineering, DJILLALI LIABES University, Sidi Bel Abbès, Algeria.

²Departement of Chemistry, DJILLALI LIABES University, Sidi Bel Abbès, Algeria.

^{*}aarslene@yahoo.fr Email of the corresponding author

Abstract – Plastic waste, whether originating from transformation processes or not, is subject to recycling and/or valorization to mitigate its harmful impacts on our urban environment. This study aims to analyze the influence of adding polypropylene (PP) fibers and explore the reuse of PVC waste in the form of chips in concrete composition. We have meticulously characterized various mechanical, physical, and thermal properties resulting from this integration. The results obtained during the optimal incorporation of PVC chips (25%) reveal exceptional workability (approximately 80 mm), a shrinkage resistance reaching 900 $\mu\text{m/m}$, and marked durability of the mortar, with a thermal conductivity of 3.326 W/m°C, suggesting their potential as high-quality thermal insulators. In comparison, for PP fibers, mortars exhibit a thermal conductivity of 3.960 W/m°C. It is evident that the incorporation of these waste materials offers enhanced insulation, with increased strength and lightness in the walls, while contributing to the overall reduction of environmental waste.

Keywords – Waste Management; PVC Manufacturing; Polypropylene Fiber Reinforcement; Waste Recycling in Construction; Thermal insulation.



ADOLESCENCE AND ALL ITS BEAUTY AND TRAUMA

Jovanka Denkova*

**Department of Macedonian Language and Literature, Faculty of Philology, Goce Delcev University, North Macedonia*

**jovanka.denkova@ugd.edu.mk*

Abstract – In this scientific article, we refer to adolescent literature, specifically to the novel "First love in the pink street" by the Macedonian author Nathalie Spasova. A novel aimed primarily at a teenage readership. It was written by a young and talented author, very inventively and at an exceptionally high aesthetic level. Despite the fact that the work was written when she was 13 years old, it leaves the impression that it was created by the pen of an experienced and great master of prose for young people, and the publication itself is of special importance for Macedonian literature because in it with this work entered as a rarely talented young author. This novel quickly became a hit with young readers and is being used in many schools as a reading book of choice for teachers. Through the character of the main heroine, who falls in love with her brother's best friend, the author talks about the feelings that are typical for all adolescents, everywhere and always. As an adolescent novel, this book also talks about the difficult acceptance of changes, such as moving, the separation of parents, fitting into a new environment, rivalries, quarrels, fights and school antics, but also the loss of a loved one. In those moments, the teenager tries to recognize what is good and just. The author emphasizes the importance of a friend who will help them in those moments, will protect them.

Keywords – Adolescence, Youth Novel, Natali Spasova.



Bearing Fault Diagnosis Based on Machine Learning model

Yahia Bousseloub*

¹ Department of electromechanics, Badji Mokhtar Annaba University, Annaba, Algeria

*(yahia.bousseloub11@gmail.com) Email of the corresponding author

Abstract – Induction motors are widely used in various industries due to their high efficiency, reliability and low cost. However, faults in these motors can lead to serious problems, such as unexpected shutdowns, decreased efficiency, and even damage to other parts of the system. Monitoring and diagnosing these faults are necessary. In scenarios involving the diagnosis of compound faults in rotating machinery, where disparate failures of varying severity manifest in distinct components of the system, detecting minor faults presents a complex challenge. The presence of a minor fault is often obscured by the more pronounced fault, thereby leading to the predominance of the characteristics associated with the severe fault. Existing literature typically treats compound failures as a distinct fault category, independent of corresponding single faults occurring either within disparate locations of a sensitive component or across separate components, such as bearings and gears, albeit exhibiting comparable fault severities. This study proposes an innovative fault diagnosis approach leveraging improved Variational Mode Decomposition (IVMD) coupled with Convolutional Neural Network (CNN). The fundamental concept involves training the CNN solely on datasets comprising healthy and single fault conditions, excluding compound fault data during training. The efficacy of the IVMD and the proposed hybrid methodology is assessed through the decomposition of simulated vibration signals and the analysis of a gearbox system under a compound fault scenario, characterized by one minor and one severe fault. Results demonstrate the superior accuracy of the proposed approach in diagnosing compound faults and effectively extracting features and classifying minor faults amidst the presence of more severe ones.

Keywords – Fault diagnosis, Induction motors, Convolutional Neural Network, Bearing, Vibration signal, Signal processing



Gamification-Based Learning as The Future of Language Learning: An Overview

Lynda DALI YOUCEF

¹Department of English/Ecole Normale Supérieure d'Oran, Algeria

dali.lynda@ens-Oran.dz

Abstract – Game-based learning is the current trend in education which is steadily increasing its popularity across several fields involving academic learning. Gamification is the incorporation of gaming elements into a learning environment in order to increase engagement and participation. It enhances learner's participation, motivate actions, efficiently improve their academic performance as well as effectively facilitate language learning. Language learning through games can take many forms, such as role-playing games to practice communication or board games to reinforce grammar. On the one hand, proponents of gamification claim that it improves learning. Gamification reinforces important educational skills like problem-solving, collaboration, and communication. Moreover, it is argued that the requirement for interaction in a gamified approach to education encourages students to participate actively in their education, resulting in increased student engagement in online forums, projects, and other learning activities. E-learning platforms seem to potentially enhance students' motivation, and great efforts are needed to develop and implement an experience to make it completely motivating to participants. Gamification research is gaining traction and promises to aid in the resolution of many issues. Hence, this article could potentially offer ideas to educators to design technology-mediated learning environments. Based on a review of various prior works, this article explored the many reasons gamification should be incorporated into school curriculums for language learning, as well as the benefits for learners. It also critically focused on the application of gamification components to improve learning via online learning systems.

Keywords – English Language, Enhance Educational Skills, Game-Based Learning, Gamification, Student Engagement



Nickel and Copper Electrochemical Deposition for Silicon Photovoltaic Metallization

Yahia Bousseloub^{*}, Soundous Bousseloub²

¹ Department of electromechanics, Badji Mokhtar Annaba University, Annaba, Algeria

² Abdelhafid Boussouf University Center of Mila, Algeria

^{*}(yahia.bousseloub11@gmail.com) Email of the corresponding author

Abstract – Copper (Cu) is renowned for its superior conductivity, making it an ideal choice for solar energy conversion and various advanced applications. This study focuses on the fabrication of Electrochemical Deposition (ELD) Cu layers directly on Ni barrier layers to enhance solar cell performance. The front contact is comprised of Ni and Cu layers, strategically reducing the series resistance of solar cells. To achieve this, ELD nickel layers of varying thicknesses are initially deposited as seed-layers at 58 °C on silicon substrates prior to the electrolytic copper thickening process. Subsequently, the deposited Ni layers undergo annealing at 400 °C to form Nickel Silicide (NiSi), which effectively diminishes the contact resistivity between Ni and Si. The investigation delves into the impact of current density and deposition time on both ELD Ni and Cu layers. It is observed that deposition current density significantly influences the crystal orientation and lattice organization quality. The study reveals the formation of a continuous Cu film with a thickness of up to 57 μm. Furthermore, scanning electron microscopy (SEM) images illustrate the correlation between electrodeposition parameters and the properties of Cu films. The deposition rate and film composition are thoroughly examined, shedding light on the intricacies of the deposition process and its characteristics.

Keywords – Ni, Cu, Electrodeposition, Metallization, PV



The left invariant Lorentzian metric g_2 on Heisenberg group H_3 of dimension three and their numerical range

MENAD Bendehiba ^{1*}, DERKAOUI Rafik ² and BOUICH Khalef ³

¹ University of Sciences and Technology of Oran Mohamed Boudiaf, Laboratory LAMAP, 31000, Oran- Algeria.

² Higher Teachers Training school of Oran AMMOUR Ahmed, Laboratory of Geometry and analysis-GEANLAB, P.O. Box 1524, Oran, 31000, Algeria.

³ Teacher's Higher College-Mostaganem, Laboratory of Geometry and analysis-GEANLAB, P.O. Box 1524, Oran, 31000, Algeria.

* bendehibamenad192@gmail.com

Abstract : The study of eigenvalues and numerical range appears in different scientific fields. We can cite for example the domain of physics, spectral theory, the stability of dynamic electricity, the quantum mechanics.

M. M. Khorami, F. Ershad and B. Yousefi published an article entitled "On the Numerical Range of some Bounded Operators". In this article, They gave conditions under which the numerical range of a weighted composition operator, acting on a Hilbert space, contains zero as an interior point and they investigated extreme points of the numerical range of an operator acting on an arbitrary Banach space.

In our work, we find numerical range of left invariant Lorentzian metric g_2 on the Heisenberg group H_3 of dimension three. This metric g_1 is explicitly given by

$$g_1 = \frac{1}{\lambda^2} dx^2 + dy^2 - (xdy + dz)^2, \quad x \in \mathbb{R}, \quad \lambda > 0.$$

The matrices associated to the metrics g_1 , is given by:

$$\begin{pmatrix} \frac{1}{\lambda^2} & 0 & 0 \\ 0 & 1-x^2 & -x \\ 0 & -x & -1 \end{pmatrix}.$$

Keywords : Bounded Operators, Pseudo-Spectrum, Numerical Range, Heisenberg Group, Lorentzian Metric.



Numerical Analysis of Dam Stability by the Finite Element Method

Taleb Hosni Abderrahmane*, Cheriet Fayssal ², Guemidi Ismahene ² and Charrak Hicham ³

¹Department of Civil Engineering and Hydraulic, University Center of Mila, Algeria

FIMAS Laboratory, University of Bechar, Algeria

²Department of Civil Engineering, faculty of sciences and technology, University of Djelfa, PO Box 3117, Djelfa 17000, Algeria.

⁴ RISAM Lab, University of Tlemcen. Department of Architecture, University of Algiers 1, Algeria.

*(talebhosni@yahoo.fr) Email of the corresponding author

Abstract – Dams serve as crucial infrastructure for water storage and distribution, with their safety being of utmost importance. This paper explores the stability of dams through numerical analysis using the finite element method (FEM) software, OPTUMG2. In order to fully assess seepage pressure circumstances' effects on dam stability, a 2D planar strain model of the dam was built and studied. The findings indicate a significant correlation between seepage pressure and dam stability. Factors such as safety ratios, surface slopes, displacements, and deformations exhibited variations influenced by seepage pressure. These insights can inform the enhancement of dam design and construction practices, particularly in regions susceptible to seepage pressure effects on soil.

Keywords – FEM · Stability Dam · Seepage Pressure · Factor of safety · Slope Surfaces · Displacements



The Killing vector fields on the oscillator group of dimension four

DERKAOUI Rafik ^{1*}, MENAD Bendehiba ² and BOUICH Khalef ³

¹ Higher Teachers Training school of Oran AMMOUR Ahmed, Laboratory of Geometry and analysis-GEANLAB, P.O. Box 1524, Oran, 31000, Algeria.

² University of Sciences and Technology of Oran Mohamed Boudiaf, Laboratory LAMAP, 31000, Oran- Algeria.

³ Teacher's Higher College-Mostaganem, Laboratory of Geometry and analysis-GEANLAB, P.O. Box 1524, Oran, 31000, Algeria.

* rafikderkaoui93@gmail.com

Abstract : Pseudo-Riemannian geometry is an extension of Riemannian geometry; in the same way that, in bilinear algebra, the study of symmetrical bilinear forms generalizes considerations on Euclidean metrics. However, this geometry presents some very surprising non-intuitive aspects.

Our work is devoted to the study of the Lorentzian geometry of the oscillator group (G_λ, g_a) of dimension 4. Connected Lie groups that admit a bi-invariant Lorentzian metric were determined by the first of the authors. Among them, those that are solvable, non-commutative, and simply connected are called oscillator groups.

in this work, we study the Killing vector fields on the oscillator group of dimension four (G_λ, g_a) .

At the moment we consider on G_λ a family parameter of left-invariant Lorentzian metrics g_a . With respect to coordinates (x_1, x_2, x_3, x_4) , this metric g_a is explicitly given by

$$g_a = adx_1^2 + 2ax_3dx_1dx_2 + (1 + ax_3^2)dx_2^2 + dx_3^2 + 2dx_1dx_4 + 2x_3dx_2dx_4 + adx_4^2,$$

with $-1 < a < 1$,

Keywords : Oscillator Group, Lorentz Metric, Killing Vector Field.



Production Of Organic Fertilizer From Microalgae Cultivation

Charef Nassira¹, Tamer Fatma Zohra¹, Saada Zakia¹, Belaid Boutheina¹, Bougueroua Karima¹, Nasri Hichem¹

1.Laboratory of Biodiversity and pollution of Ecosystems, Department of biology, University of Chadli Bendjdid El Tarf, Algeria,

E-mail: 1.Charef Nassira : n.charef@univ-eltarf.dz

Abstract - The adoption of sustainable agricultural practices is increasingly imperative in addressing global food security and environmental challenges. Microalgae, characterized by their renewable nature and nutritional richness, offer a unique opportunity to revolutionize conventional farming techniques. This work delves into the fabrication of organic fertilizer from microalgae cultivation, showcasing its potential to foster eco-friendly agricultural systems while enhancing soil health and crop productivity. Among these, *Spirulina* sp, a filamentous cyanobacterium renowned for its nutrient profile, takes center stage in addressing nutritional deficiencies. Harvested from Oubeira Lake and carefully cultivated, *Spirulina* biomass, alongside other microalgae strains, becomes integral to the development of eco-friendly agriculture fertilizers. The overarching objective of this endeavor is clear: to pioneer biofertilizers that minimize reliance on environmentally damaging chemicals, promoting the well-being of ecosystems, animals, and human health. Bloom collected from Oubeira Lake in October 2022, *spirulina* sp were isolated then cultured using Zarrouk's medium in a culture room at $35 \pm 2^\circ\text{C}$. The culture is then harvested by centrifugation, and the biomass is freeze dried then preserved at -80°C until further analysis. *Spirulina* biomass in addition to other microalgae strains will be used for the fabrication of the agriculture fertilizer.

Key Words: *Spirulina Sp.*, Biofertilizers, Sustainable Agriculture, Chemical Fertilizer, Environment Risque



Exploitation and valorization of dune sand for the development of a new construction material

GUERMITI Laid ^{*1}, Hadji Ben salah¹, Hani Mostefa ¹, BENTEBBA Mohamed Tahar ²

¹University of Djelfa, civil engineering department, Algeria

²University of Ouargla, department of civil and hydraulic engineering, Algeria

E-mail: l.guermiti@univ-djelfa.dz

Abstract - This research aims to valorize local materials (dune sand, scrap metal) in the formulation of concrete based on dune sand reinforced with metal fibers and to study the effect of metal fibers on the mechanical behavior and dimensional variation (shrinkage) of this concrete. Two types of fibers (short 20.00 mm and long 50.00 mm) were used.

An experimental study of the formulation of ordinary concrete without fibers using the DREUX-GORISSE method and then optimizing the calculated composition using the BARON LESAGE method is conducted to optimize the fiber concrete. The optimal fiber-free composition of conventional concrete corresponds to the value of (sand/gravel = 0.65). and varied the fiber dosage by 0.50% and 1.00% by volume of dry constituents and for different fiber lengths. The results revealed improvements in both the mechanical strength of the concrete, especially in flexural strength, and the dosage and slenderness of this type of fiber appear to be the most important factors in reducing drying shrinkage and endogenous shrinkage with greater weight loss.

Keywords: Composite Materials, Steel Fibres, Mechanical Strength Shrinkage



Magnetocrystalline anisotropy of binary system

R. Masrour *

Laboratory of Solid Physics, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, BP 1796, Fez, Morocco

*Corresponding author: rachidmasrour@hotmail.com

Abstract – Magnetocrystalline anisotropy of binary system based on the transition element have been studied by using the density functional theory and Monte Carlo simulation. The density of state and partial density are found. The magnetic moment is found by using the GGA and mBJ. The magnetic anisotropy shows that the easy axis is along the axis [001]. The magnetic entropy changes, relative colling power and adiabatic temperature are calculated.

Keywords – Magnetocrystalline anisotropy, Monte Carlo simulation, GGA, mBJ.



Magnetocaloric effect of the Polyphenylene Dendrimers

R. Masrour *

Laboratory of Solid Physics, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, BP 1796, Fez, Morocco

**Corresponding author: rachidmasrour@hotmail.com*

Abstract – The magnetic properties and magnetocaloric effect of mixed spins of the polyphenylene dendrimers were studied by using the Monte Carlo method. The phase diagrams of the ground state at zero temperature will be discussed in more detail. The critical temperature to vary the crystal field and exchange interactions. The effect of the reduced exchange couplings and the crystal field on the total magnetizations and the hysteresis loop is studied. The effect of temperature on the heat specific changes, magnetic entropy changes and adiabatic temperature have been explained. Finally, we analyzed the relative cooling power of a variety of reduced external magnetic fields.

Keywords – Polyphenylene Dendrimers; Monte Carlo; Magnetocaloric Effect, RCP



ASYMPTOTIC ANALYSIS OF A DYNAMIC FLOW OF THE BINGHAM FLUID

Abdelkader Saadallah *

¹ Department of Mathematics, Setif 1 University, Algeria

*(saadmath2009@gmail.com)

Abstract – The aim of this paper is to study the asymptotic behavior of an incompressible Bingham fluid in a dynamic regime occupying a bounded domain with nonlinear friction of Tresca type. Firstly, the existence and uniqueness of weak solution is proved. Then we show the estimates for the velocity and the pressure independently of the parameter. Finally, we give a specific Reynolds equation associated with variational inequalities and prove the uniqueness.

Keywords – Asymptotic Approach, Bingham Fluid , Dynamic Regime, Tresca Law, Reynolds Equation



The Relationship Between Labor Market Migration and Human Capital in Albania

Lindita Kiri

Department of social sciences, Qiriaz University, Albania

(linditakiri@yahoo.com) Email of the corresponding author

Abstract – The countries of the Western Balkans are characterized by a declining population, driven by low birth rates, population aging and continuous migration. Emigration from the region has been constant since the 1990s, evolving from irregular migration for work purposes among persons with low to medium skill levels for work to regular migration for purposes of family reunification, students studying abroad and, more recently, migration for work purposes of persons with a high level of skills. In 2020, the European Training Foundation (ETF), together with the Vienna Institute for International Economic Studies, launched a regional study entitled 'Dynamics of migration from a human capital perspective in the Western Balkans'. Its aim was to shed light on the triangular relationship between human capital formation, labor markets and migration, and to determine how the education system currently works and how the labor market affects migration in each country. The study included an analysis of existing literature and reports and the development of tools to analyze available data on Albanian migrants based on existing international statistics. Given the growing educational profile of Albanian migrants, avenues for bilateral agreements with the main destination countries for the management of skilled migration can be explored. The new EU Pact on Migration and Asylum (EC, 2020) may represent an opportunity to develop such a dialogue.

Keywords – Migration; Albanian Population, Demographic And Social Characteristics, EU



Vector Control of Induction Motor Using Type-1 Fuzzy Logic Controller

Abdelghafour HERIZI ^{1*}, Abdelhafid BENYOUNES ², Fayssal OUAGUENI ¹, Ahcene ABED ³

¹LGE Research Laboratory, Department of Electrical engineering, Faculty of Technology, University of M'sila, Algeria

²Department of Electrical engineering, Faculty of Technology, University of M'sila, Algeria

³Electronics Department, Faculty of Technology, University of M'sila, Algeria

*abdelghafour.herizi@univ-msila.dz

Abstract – This article examines the vector control of an induction motor (IM) driven by a PWM inverter. Oriented flux vector control is one of the most efficient vector control methods due to its ease of design and implementation. Proportional integral (PI) controllers are used to implement this method. The parameters of these controllers are calculated directly from the machine parameters using traditional analytical methods, which require rigorous calculation and a thorough understanding of all the machine parameters. Our research aims to replace the traditional PI controller with a type 1 fuzzy logic controller, which is tested in an initial speed controller scenario. The simulation of vector control performed by traditional controllers using Matlab/Simulink and the PI-Fuzzy are contrasted.

Keywords – Induction Motor, Type-1 Fuzzy Logic, Proportional integral, Vector Control, Hybrid Control, Robust.



Optimizing High Density Polyethylene Performance: Utilizing Diatomite Filler and an Innovative Reversible Crosslinking Agent

Abdelbasset Abdessamad REGUIG ^{1,2*}, Said BOUHELAL ^{1,2}, Rachida DOUFNOUNE ^{1,2}

¹ *Unité de Recherche des Matériaux Emergents -Sétif- URMES, Equipe des matériaux Polymères multiphasiques, Université Ferhat ABBAS Sétif-1, Algérie.*

² *Département de Génie des Procédés, Faculté de Technologie, Université Ferhat ABBAS Sétif-1, Algérie.*

*reguig.polymerphd@gmail.com

Abstract – Due to their incompatibility, inorganic fillers are difficult to incorporate into polymeric materials and require a coupling agent to improve interfacial interactions and facilitate their dispersion in the matrix. This study used reactive extrusion to make High density polyethylene (HDPE) microcomposites with varied Diatomite (DA) fractions to test the new reversible crosslinking reaction agent (RXR) on the filler and the matrix. The system's rheological behavior and crosslinking reaction were recorded by Dynamic Rheological Analysis (DRA) utilizing the torque rheometer, while tensile and impact tests examined its mechanical properties. Differential scanning calorimetry (DSC) and Thermogravimetric analysis (TGA) were used to analyze thermal properties, while Wide-angle X-ray scattering (WAXS), Fourier infrared transform (FTIR), and Scanning electron microscope (SEM) were used to analyze structural and morphological properties. Due to agglomeration and poor interfacial contacts, DA reduced HDPE resin's tensile properties, although molecular chains intercalated into the pores, increasing its impact resistance. Without affecting thermal stability, structural, or morphological properties, it increased crystal structure and crystallinity. RXR enhanced tensile strength and impact resistance, especially at high DA concentrations, by dispersing the DA particles. Despite the fact that structure and thermal stability were unaltered, the RXR agent reduced crystallinity and crystalline size. Mechanical, rheological, and crystallization studies showed that DA and the DA-RXR agent combination were promising HDPE additions.

Keywords – Microcomposites, High Density Polyethylene (HDPE), Diatomite (DA), Reversible crosslinking reaction (RXR).



Cümleden Emoji Kestirimi

Tuğba Tosun Patacı, Yaşar BECERİKLİ2

Bilgisayar Mühendisliği / Fen Bilimleri Enstitüsü, Kocaeli Üniversitesi, Türkiye

tugggbatosun@gmail.com

Özet – Çalışma doğal dil işleme alanında bulunan otomatik metin sınıflandırması yöntemleri ile ilgilidir. Yapılan çalışma kullanıcı yorumlarından faydalanılarak emoji tespiti ve sınıflandırılması için detaylandırılmış olmak üzere metinlerin sınıflandırıldığı sistemlere yönelik geliştirilen bir yöntem ile ilgilidir. Yöntemde özellik çıkarımı için BoW ve N-gram yöntemleri kullanılmaktadır. Eğitim aşamasındaki sınıflandırma modeli ise Naive Bayes, Karar Ağacı ve Rastgele Karar Ormanı yöntemlerinden seçilebilir niteliktedir. Çalışmada altı temel duygu içeren Twitter mesajlarından oluşan bir veri kümesi kullanılmıştır. Mesajlar öfke, korku, neşe, aşk, üzüntü ve şaşkınlık emojiilerini belirtecek şekilde etiketlenmiştir. Veri kümesi kullanıcıların çeşitli konulara ilişkin yaptıkları yorumlara ve bu yorumlara istinaden belirlenen emojiileri içermektedir. Çalışma sonucundan birden fazla sınıflandırma tekniklerinin metinden emoji tespitinde başarımlarını gözlemlemek ve karşılaştırmak hedeflenmiştir.

Anahtar Kelimeler – Metin Sınıflandırma, Bayes Sınıflandırıcı, Rastgele Karar Ormanı, J48, Kullanıcı Yorumları Sınıflandırma, Yorumdan Emoji Tespiti



Assessment of Coagulation-Flocculation Coupled with UV/Ultrasound-Activated Persulfate/Hydrogen Peroxide for Landfill Leachate Remediation

Hamza Bellouk^{1*}, Imane El Mrabet², Karim Tanji¹, Mostafa Nawdali¹, Hicham Zaitan¹

¹ Processes, Materials and Environment Laboratory (LPME), Faculty of Sciences and Technology of Fez, Sidi Mohamed Ben Abdellah University, BP 2202, Morocco

² Department of Physics-Chemistry, Polydisciplinary Faculty of Ouarzazate, University of Ibn Zohr, Morocco

*hamza.bellouk2@usmba.ac.ma

Abstract – The advanced oxidation processes (AOPs) were assessed for enhancing the treatment of stabilized landfill leachate previously pretreated using coagulation-flocculation (C-F). The primary treatment by C-F using 20 g.L⁻¹ of FeCl₃ (optimal coagulant dosage) has removed 71% of chemical oxidation demand (COD) and 95% of turbidity. Thereafter, secondary treatment was applied using different system combinations of two inorganic oxidants (potassium persulfate, K₂S₂O₈ (PS) (1500 mg. L⁻¹) and hydrogen peroxide, H₂O₂ (1327 mg. L⁻¹)) that were used simultaneously or separately with UV-A and/or ultrasonic (US) irradiations. The obtained results indicated that the oxidation systems with the presence of H₂O₂ were more efficient than other systems. Indeed, the H₂O₂-PS-US-UV-A system reached the highest COD removal of 89%, while PS-based combinations were the less efficient (PS alone 19%, PS-UV-A 22%, PS-US 32%, and PS-US-UV-A 35%). Hence, the sequential process including C-F as pretreatment followed by the application of the H₂O₂-PS-US-UV-A system has proven high efficiency for COD removal, absorbance at 254 nm, and color number of 97%, 97%, and 99%, respectively. The sequential application of AOPs after preliminary treatment using coagulation-flocculation is a promising alternative to reducing the high organic load of stabilized leachate and that could be largely applied to other types of effluents.

Keywords – Landfill Leachate treatment ,Ultrasound-activated persulfate, Ultraviolet irradiation ,Hydroxyl radicals, Organic contaminants removal



Advancing Sustainable Leachate Management: Integrating Biological Treatments and Advanced Oxidation Processes

Hamza Bellouk^{1*}, Imane El Mrabet², Mostafa Nawdali¹, Hicham Zaitan¹

¹ Processes, Materials and Environment Laboratory (LPME), Faculty of Sciences and Technology of Fez, Sidi Mohamed Ben Abdellah University, BP 2202, Morocco

² Department of Physics-Chemistry, Polydisciplinary Faculty of Ouarzazate, University of Ibn Zohr, Morocco

*hamza.bellouk2@usmba.ac.ma

Abstract – The management of leachate, a byproduct of waste decomposition, presents environmental challenges that necessitate sustainable solutions. This integrated literature review examines various biological and physico-chemical treatment methods, emphasizing their efficacy in pollutant removal and sustainable management. Natural attenuation processes, including artificial wetlands and stabilization lagoons, offer environmentally friendly alternatives to conventional treatments, showcasing effectiveness in reducing liquid pollutants. Additionally, advanced oxidation processes (AOPs) have emerged as efficient solutions for refractory organic and inorganic contaminants in leachate, leveraging reactive radicals to facilitate degradation. By critically evaluating these methods' advantages and limitations, this study contributes to advancing sustainable environmental practices and identifies promising research directions for holistic leachate management.

Keywords – Leachate, Sustainable Management, Biological Treatment, Advanced Oxidation Processes (Aops), Pollutant Removal



Comparing energy and exergy performance of solar air heater with corrugated and flat absorbers

Noureddine Embarek ^{*1}, Hocine Guellil ², Abdelillah Nabil Korti³, Djahida Mahmoudi⁴

^{*1,2,3,4}ETAP Laboratory, University of Tlemcen, Ft, Departement of Mechanics, BP230, 13000 Tlemcen, Algeria

[*noureddineembarek13@gmail.com](mailto:noureddineembarek13@gmail.com)

Abstract – In this project focused on solar air collectors, comprehensive experiments were conducted to investigate the performance and efficiency of different absorber designs, particularly flat and corrugated absorbers, under controlled laboratory conditions, with radiation set at 600 W/m² and a flow rate of 0.016 kg/second. The obtained results indicate that a 6 cm spacing between the absorber and the glazing is the most effective and efficient in both cases. For the corrugated absorber, the 6 cm spacing with the glazing recorded a temperature difference 20°C, higher than that of the flat absorber by 5°C.

Furthermore, there was a remarkable enhancement of the thermal efficiency of the solar collector by 17% when using the corrugated absorber compared to the flat absorber, along with an improvement in exergy efficiency. These results could provide valuable insights for the design and optimization of solar collectors to improve their thermal and exergetic performances.

Keywords – Flat Absorber, Thermal Efficiency, Solar Radiation, Exergetic Performance, SAH



Exploring the Impact of Diatomite Filler and Reversible Crosslinking Reaction agent on Isotactic-Polybutene Performance

Abdelbasset Abdessamad REGUIG ^{1,2*}, Said BOUHELAL ^{1,2}

¹ *Unité de Recherche des Matériaux Emergents -Sétif- URMES, Equipe des matériaux Polymères multiphasiques, Université Ferhat ABBAS Sétif-1, Algérie.*

² *Département de Génie des Procédés, Faculté de Technologie, Université Ferhat ABBAS Sétif-1, Algérie.*

*reguig.polymerphd@gmail.com

Abstract – The present investigation examines the impact of Diatomite (DA) and a newly developed reversible crosslinking reaction agent (RXR) on multiple attributes of Isotactic Polybutene (iPB) resin, including rheological, mechanical, thermal, structural, and morphological features. The integration of both DA and the RXR agent was found to induce significant modifications within the iPB resin, as observed by a variety of tests and studies. The results of the rheological experiments indicated that the RXR agent caused a significant rise in viscosity due to a crosslinking reaction, whereas DA had a negligible effect. The inclusion of both agents resulted in a notable decrease in mechanical characteristics. DA exhibited anti-nucleating properties, resulting in a decrease in both crystallization temperature and degree of crystallinity. Conversely, the RXR agent has shown an enhancement in crystallization temperature. The incorporation of DA filler resulted in a significant improvement in thermal stability. In addition, it was observed through FTIR and WAXS analysis that both DA and the RXR agent did not induce substantial changes in crystalline modification. The SEM micrographs revealed the clustering of DA filler, which is likely due to inadequate interactions between the filler and the matrix, explaining the decrease in mechanical characteristics that was found.

Keywords – *Micro-composites, Isotactic polybutene (iPB), Diatomite (DA), Reversible crosslinking reaction agent (RXR), Dynamic rheological analysis (DRA).*



Impact of an avermectin (Emamectin benzoate) on the renal activity of the Wistar rat

CHELBI Narimene*, MALLEM Leila ²

¹ Department of Biology, Animal Ecophysiology Laboratory, Faculty of Science, Université Badji Mokhtar-Annaba, Annaba 23000, Algeria

² Département de Médecine Dentaire, Faculté de Médecine, Route el Zaafrania, BP 205, 23000, Annaba, Algérie

*(chelbinarimen@gmail.com) Email of the corresponding author

Abstract – The objective of this study was to evaluate the toxic effect of the insecticide Emamectin benzoate (EMB) on renal activity in rats. Twenty-four male Wistar rats were obtained from the Pasteur Institute. The animals were placed in specific cages and underwent an adaptation period before being divided into three groups, each consisting of eight rats: Group 1 (G1) Control, Group 2 (G2), and Group 3 (G3) treated with Emamectin benzoate at doses of 1/20 LD50 and 1/60 LD50 of body weight respectively, administered by gavage for a period of 6 weeks. The results showed a highly significant increase in plasma concentration of urea, uric acid, and creatinine in the group treated with the high dose compared to the untreated control group. However, there was no significant difference in plasma concentrations of the renal parameters studied in the group treated with the low dose compared to the untreated control group. Additionally, there was no significant change in absolute kidney mass between the treated groups and the untreated control group. In conclusion it appears that treatment of rats with the high dose of insecticide under the described experimental conditions likely caused dysfunction in renal activity, particularly in rats exposed to the high dose of the pesticide used.

Keywords – Rats, Insecticide, Emamectin Benzoate, Renal Activity, Toxicity



A Historical Insight into the Turkish Management and Organization Tradition: Nizam al-Mulk and Siyasatnama

Caner Asbaş^{*1}

¹School of Business, Atılım University, Turkey

^{*}(canerasbas@hamlerf.com)

Abstract – Nizam al-Mulk was a statesman who served as a grand vizier in the Great Seljuk Empire during the reign of Seljuk sultans Alp Arslan and Malik-shah in the 11th century. He is also known for his work of art named Siyasatnama, which he wrote in the field of political science and political philosophy, as well as his administrative duties. In Siyasatnama, Nizam al-Mulk, who bases and supports his theses with the positive examples he gives from the history, gives advice to the sultan and other successors regarding state administration, and presented the methods to be followed and the principles to be obeyed. In addition, a detailed organizational chart on state administration is designed and defined in Siyasatnama, and ideal and current situations are examined and compared by considering the organizational relationships between the elements in this chart. Considering these features, Siyasatnama, together with Kutadgu Bilig, constitutes one of the first examples of political treatise books in the Turkish world and can be acknowledged as an important work of early political science and political philosophy. Associating Siyasatnama with business management discipline, on the other hand, it can be seen that one of the first examples of modern management and organization understanding are given and discussed in this work. In this study, by examining Siyasatnama, which is frequently analyzed in the fields of political science, philosophy, and history, from the perspective of business management, its inferences in the field of management and organization are analyzed and argued.

Keywords – Nizam al-Mulk, Management History, Management Science, Organization Science, Political Philosophy, Political Science, Siyasatnama.



Hole-meadow vegetation type spreading in the territory of Astara region (Azerbaijan)

Sanubar Aslanova

Azerbaijan_State_Pedagogical_University_Baku

Aslanova.Sanubar@adpu.edu.az

Abstract – The hole-meadow vegetation type spread in the territory of Astara region is represented by 1 formation *Paliuruseta-Sambucusetum-Cynodonosum* and 1 association *Paliuruseta spina-christiisambucusetum ebulus-Cynodonosum dactylon*.

Based on the bimorphological or life forms of 31 species of higher plants occurring in the species composition of the *Driopteriseta raddeiana-Centauretum hyrkana-Carexosum sylvatica* association (of which 1 species belongs to the subdominant species *radde radideiana*), there are 3 species (9.7%) of trees, 5 species (16.1%) of shrubs, 15 species (48.4%) of perennial grasses, 2 species (6.4%) of biennial grasses and 6 species (19.4%) of annual grasses; 15 species (48.4%) mesophytes, 10 species (32.3%) mesoxerophytes, 5 species (16.1%) hydrophytes, and 1 species (3.2%) xerophyte of the species belonging to the same composition, according to the analysis by ecological group). The phytocenosis is dominated by *Carex sylvatica* Huds - abundance 3-4 points, subdominant *Centaurea hyrcanica* Bornm - abundance 2-3 points and *Dryopteris Raddeana* Fomin, abundance estimated at 2 points.

Keywords – *Xerophytes, Mesoxerophytes, Mesophytes, Hydrophytes, Phytocenosis.*



Psammophyte vegetation type distributed in Astara region (Azerbaijan)

Sanubar Aslanova

Azerbaijan_State_Pedagogical_University_Baku

Aslanova.Sanubar@adpu.edu.az

Abstract – Rubuseta anatolicus – Convolvulusetum persicus – Argusiaosum Sogdian association distribution of 27 species on the coast of the Caspian Sea of the Astara region in the Lankaran lowland. In the course of our geobotanical research, we established the distribution of 23 species of flowering plants in the species composition of the corresponding association on the edge of the Caspian Sea in the direction of the village of Erchivan in this region. As can be seen from the description, there are 6 species (26.1%) of shrubs, 1 species (4.4%) of subshrubs, 9 species (39.1%) of perennial grasses, 2 species (8.7%) of biennial grasses and Represented 5 species (21.7%) of annual grasses; This formation includes 12 species (52.1%) according to ecological groups, psammophytes; 5 species (21.7%) belong to xerophytes, 2 species (8.7%) to halophytes, 2 species (8.7%) to hydrophytes, 1 species (4.4%) to mesoxerophytes and 1 species (4.4%) to mesophytes. The dominant species of the association is Argusian sogdiana (Bunge) Czer, the abundance of which is 3-4 points, the subdominants are Convolvulus persicus L and Rubus anatolicus (Focke) Focke ex Hausskn, the abundance of ivy is 2-3 points, and the abundance of blackberries is 2 points.

Keywords – Psammophytes, Halophytes, Mesophytes, Hydrophytes, Phytocenosis.



Development of a Higher-Order Shear Deformation Theory for Functionally Graded Plates

Madjda CHENAFI*, Messaoud BOUREZANE ², Taqiyeddine ASSAS ³ and Seyfeddine BENABID⁴

^{1,2,3} Civil Engineering Department, University of Biskra ,Laboratory of Hydraulics Development and Environnement ,

⁴ Civil Engineering Department, University of Biskra , Laboratory of Research in Subsurface and Surface Hydraulics, Biskra

[*madjda.chenafi@univ-biskra.dz](mailto:madjda.chenafi@univ-biskra.dz)

Abstract – In this study, a polynomial higher-order shear deformation theory is introduced and developed for the static analysis of functionally graded material (FGM) plates. The presented theory shares strong similarities with the Mindlin plate theory in various aspects, including equations of motion, boundary conditions, and stress expressions. Notably, the developed theory eliminates the need for shear correction factors and ensures compliance with stress-free boundary conditions, allowing for a parabolic variation of transverse shear stress throughout the plate thickness. Mechanical properties of the FGM plate are assumed to vary continuously in the thickness direction based on a power-law distribution of the volume fractions of the constituents. The study examines the influences of material distribution, boundary conditions, aspect ratio, and neutral axis on mid-plane deflection, normal stress, and shear stress. The obtained results are compared with existing literature data to validate the correctness and accuracy of the developed theory. This theory provides a valuable reference for researchers in similar studies.

Keywords – Mindlin Plate Theory; Higher-Order ; Boundary Conditions; Shear Correction Factors ;FGM



A nonlinear mathematical model on the dynamical study of a fractional-order crop-pest model

Mohamed HELAL ^{*}, Abdelkader LAKMECHE ², Nacera HELAL ³ and El Arbi Miloudi ⁴

¹Biomathematics Laboratory, University of Djillali Liabes, Sidi Bel Abbes, 22000, Algeria

²Biomathematics Laboratory, University of Djillali Liabes, Sidi Bel Abbes, 22000, Algeria

³Higher School of Computer Sciences, Sidi Bel Abbes, 22000, Algeria

⁴Biomathematics Laboratory, University of Djillali Liabes, Sidi Bel Abbes, 22000, Algeria

**(mhelal_abbes@yahoo.fr) Email of the corresponding author*

Abstract – The work is deals with the basic results of a fractional order predator-prey system with harvesting. More precisely, crop-pest interactions were studied. Mathematical results like existence, uniqueness and positivity of the solutions are derived. It is shown that the fractional order system undergoes a possible Hopf-bifurcation at the interior equilibrium point. Local and Global stability of the system have been found under some parametric condition. Further an efficient numerical technique (Adams-Bashforth-Moulton method) have been illustrated for better understanding of the dynamics of the systems. In our investigation, the fractional operator is understood in the Caputo sense.

Keywords – Fractional-Order Differential Equation, Ecological Model, Crop-Pest Model, Local and Global Stability, Hopf Bifurcation, Numerical Simulation.



Isolation, identification and aggressiveness characterization of *Fusarium* spp. associated with crown rot and *Fusarium* head blight in Algerian wheat

Bouanaka Hamza*, Bellil Ines¹ and Khelifi Douadi²

¹ Laboratoire de Génétique Biochimie et Biotechnologies Végétales, Université Frères Mentouri Constantine 1, Faculté des Sciences de la Nature et de la Vie 25000, Constantine, Algérie.

² École Nationale Supérieure de Biotechnologie, Pôle Universitaire, Nouvelle Ville Ali Mendjeli Constantine, Algérie.

*(bouanakahamza@gmail.com) Email of the corresponding author

Abstract – *Fusarium* crown rot (FCR) and *Fusarium* head blight (FHB) are two destructive fungal diseases of wheat in the world. This research was conducted to study the most important species associated with these diseases in Algeria. One hundred and seventeen samples were collected. Sixty-three from the crown and fifty-four from wheat grains in several regions of northeastern Algeria. *Fusarium* spp. have been identified by sequencing internal transcribed spacer regions (ITS1-2) of the rDNA as well as their life lines (growth and sporulation rates). FCR pathogenicity tests were performed by two methods in vitro (Tube test) and in vivo (Pot test). A total of 34 isolates representing 10 *Fusarium* species was obtained. These results showed five species isolated from crown; *Fusarium culmorum* (16), *F. cerealis* (3), *F. acuminatum* (2), *F. graminearum* (1) and *F. oxysporum* (1). And seven species from grains; *F. culmorum* (3), *F. incarnatum* (3), *F. graminearum* (1), *F. equiseti* (1), *F. asiaticum* (1), *F. fujikuroi* (1) and *F. brachygibbosum* (1). *F. culmorum* strains were dominant and more aggressive. Moreover *F. graminearum* and *F. cerealis* were aggressive in in-vitro test. However, the rest of species were more saprophytic than aggressive. The dendrogram showed a *Fusarium* rich diversity, in particular *F. culmorum* related to wheat FCR and FHB. A significant correlation was recorded between growth and sporulation rates ($r = 0.35$ $P = 0.012 < 0.05$). Furthermore, a strong correlation was recorded between tube and pot tests ($r = 0.62$, $P = 0.007 < 0.01$). This result provides a simple in vitro test to predict *F. culmorum* FCR aggressiveness on wheat. In addition, this is the first report concerning *F. incarnatum*, *F. asiaticum*, *F. acuminatum* and *F. graminearum* identifications from Algerian wheat.

Keywords – Algeria, Fungus, *Fusarium*, Pathogenicity, *Triticum*.



Existence results for systems of second-order impulsive differential equations

Halima Kadari*, Horiya Kouadri Habbaze ²

¹ Department of mathematics / University of Sidi Bel Abbès Laboratory of Biomathematics, Sidi Bel Abbès, Algeria

² Department of mathematics / University of Sidi Bel Abbès Laboratory of mathematics, Sidi Bel Abbès, Algeria

*(horiyakouadrihabbaze@gmail.com)

Abstract – In this paper the authors study the existence of solutions to systems of nonlinear second order impulsive differential equations. Their results are established by using vector versions of Perov's fixed point theorem and the nonlinear alternative of Leray-Schauder type. Both approaches are combined with a technique based on vector-valued metrics and matrices that converge to zero. Examples illustrating the results are included.

Keywords – Two Point Boundary Values Problems With Impulsives, Existence, Perov Xed Point Theorem, Vector-Valued Norm, Convergent To Zero Matrice



Linear time-varying dynamic-algebraic equations via the proportional fractional derivative

Canan Yanılmaz ^{1*} and Tuba Gulsen ²

¹ Department of Mathematics, Institute of Science, Firat University, Turkey

² Department of Mathematics, Faculty of Science, Firat University, Turkey

*cyanlmaz@gmail.com

Abstract – In this study, linear time-varying dynamic-algebraic equation systems are examined based on the proportional dynamic system and its properties on arbitrary time scales [1]. Unlike the classical case, the equations considered here involve proportional fractional derivatives [2-5]. Therefore, more general results are given in terms of fractional order derivatives for linear proportional systems on arbitrary time scales. Fractional calculus has many different definitions and applications to solve complex systems in physics and engineering. It is possible to think of this analysis as a generalization of classical analysis. In this study, unlike other definitions of fractional calculus on the time scale, it is aimed at obtaining a first-order linear time-varying proportional dynamic-algebraic equation system [6] and equivalent proportional systems similar to the classical situation on the time scale, based on the definition of proportional delta fractional derivative with unit operator.

Keywords – Time Scales, Proportional Fractional Derivative, Dynamic-Algebraic Equation System, Proportional Dynamic Systems On Time Scales, Projector Matrix.

References

1. Hilger, S. (1988). Ein Makettenkalkl mit Anwendung auf Zentrumsmanigfaltigkeiten, Ph. D. Thesis, Universtat Wurzburg.
 2. Anderson, D. R., Ulness, D. J. (2015). Newly defined conformable derivatives, *Advances in Dynamical Systems and Applications*, 10(2), 109-137.
 3. Segi Rahmat, M. R. (2019). A new definition of conformable fractional derivative on arbitrary time scales, *Advances in Difference Equations*, 2019(1), 1-16.
 4. Segi Rahmat, M. R., Noorani, M. S. M. (2021). A new conformable nabla derivative and its application on arbitrary time scales, *Advances in Difference Equations*, 2021(1), 1-27.
 5. Anderson, D. R., Georgiev, S. G. (2020). *Conformable Dynamic Equations on Time Scales*, Chapman and Hall/CRC.
 6. Georgiev, S. G. (2023). *Dynamic Calculus and Equations on Time Scales*. Walter de Gruyter GmbH & Co KG.
-



Improving the Diagnosis of Chronic Kidney Disease through Machine Learning Classifiers

Muhammad Ismail^{1*}, Muhammad Saad², Yaqoob Khan³, Hazrat Bilal⁴, Abrar Ali Shah⁵, Jouhar ud din⁶

¹Department of Electrical Engineering, University of Engineering and Technology Mardan, 23200 Mardan, Pakistan;

²Department of Electrical Engineering UET Peshawar, Main Campus Peshawar, Pakistan;

³Department of Electrical Engineering UET Peshawar, Jalozai Campus Peshawar, Pakistan;

⁴Department of Electrical and Computer Engineering COMSTAS University Islamabad, Abbottabad Campus, Pakistan;

⁵Department of Computer Science and Engineering Oulu University Finland;

⁶Department of Physics Abdul Wali Khan University Mardan.

m.ismail012018@gmail.com, 19pwele5604@uetpeshawar.edu.pk, 17jzele0175@uetpeshawar.edu.pk, hbilalkhan666@gmail.com,
ashah23@student.oulu.fi, jouharuddin1989@gmail.com
(m.ismail012018@gmail.com) Email of the corresponding author

Abstract – Chronic kidney disease (CKD), one of the most prevalent and deadly illnesses affecting people worldwide, does not show symptoms until a person's kidneys have suffered irreversible damage. Anaemia, hyperlipidemia, kidney failure, nerve damage, pregnancy issues, and an increased risk of various diseases are just a few of the severe side effects that are associated with the advancement of chronic kidney disease (CKD). Millions of people lose their lives to this illness every year. It may be challenging to diagnose CKD because there are no notable symptoms that can be used as a benchmark. Occasionally, when the diagnosis is persistent, data might be interpreted incorrectly. Using a machine learning classifier, this study diagnoses patients with CKD. This study employs three machine learning (ML) techniques: Random Forest (RF), Random Tree (RT), and Decision Table (DTa). Several performance metrics, including accuracy, TPR, FPR, recall, and mean absolute error (MAE), are taken into account. These predictive models are developed using a dataset on chronic kidney disease that includes 279 attributes that were obtained from Kaggle in order to determine which classifier is the most accurate at predicting CKD. Our goal is to make it easier to apply machine learning methods that use dataset attribute reports to accurately detect CKD. The primary output of the study is a machine learning (ML) model that achieves the highest predicted accuracy and outperforms standard diagnostic methods in the diagnosis of chronic renal disease. The study also compared the performance of each model. We were able to predict this disease with the Random Forest model more accurately than ever before, at a 76.23% accuracy level.

Keywords – Chronic Kidney Disease, Machine Learning, Random Forest, Performance Metrics



Navigating Process Mining: A Case study using pm4py

ALI JLIDI, LÁSZLÓ KOVÁCS

Institute of Information Technology, University of Miskolc, Hungary
Institute of Information Technology, University of Miskolc, Hungary

jlidi.ali@student.uni-miskolc.hu

Abstract – Process-mining techniques have emerged as powerful tools for analyzing event data to gain insights into business processes. In this paper, we present a comprehensive analysis of road traffic fine management processes using the pm4py library in Python. We start by importing an event log dataset and explore its characteristics, including the distribution of activities and process variants. Through filtering and statistical analysis, we uncover key patterns and variations in the process executions. Subsequently, we apply various process-mining algorithms, including the Alpha Miner, Inductive Miner, and Heuristic Miner, to discover process models from the event log data. We visualize the discovered models to understand the workflow structures and dependencies within the process. Additionally, we discuss the strengths and limitations of each mining approach in capturing the underlying process dynamics. Our findings shed light on the efficiency and effectiveness of road traffic fine management processes, providing valuable insights for process optimization and decision-making. This study demonstrates the utility of pm4py in facilitating process mining tasks and its potential for analyzing real-world business processes.

Keywords – *Process-Mining, Pm4py, Event Log, Alpha Miner, Inductive Miner, Heuristic Miner, Process Discovery*



Prevalence of *Strongylus spp* infection in donkey's population from Gjirokastra district, Albania

Ilir Dova^{1*}, Rezart Postoli¹, Dhimitër Rapti¹, Majlind Sulce¹ and Enkeleda Ozuni¹

¹Faculty of Veterinary Medicine, Agricultural University of Tirana, Albania

*(idoval@ubt.edu.al) Email of the corresponding author

Abstract – The study was carried to determine the prevalence of *strongylus* spp infection in working donkey's from Gjirokastra region, during spring - summer 2023. Internal parasites are the major cause of morbidity and mortality in working donkeys. For that purpose 40 fresh fecal samples were collected from the animals, and examined by improved modified McMaster method. The infection rate of strongylidae spp resulted 100 %. The data of the study revealed high prevalence of infection with *strongylus* spp. in both groups of donkeys. Further study is needed with the aim to identify and prevent heavy infection of donkeys used as working animals by local farmers of the district from *strongylus* spp.

Keywords – Donkeys, *Strongylus Spp*, Gjirokastra District



Ball bearing Remaining Useful Life estimation using the Support Vector Regression and the Principal Components Analysis.

Riadh Euldji ^{1*}, Mouloud Boumahdi ², Mourad Bachene ² and Euldji Rafik ²

¹ *Laboratory of Applied Automation and industrial Diagnostic, University of Djelfa, Djelfa 17000, Algeria.*

² *University of Medea, Department of Mechanical Engineering, Medea 26000, Algeria.*

**(r.euldji@univ-djelfa.dz.) Email of the corresponding author*

Abstract – Ball bearings are critical components in all rotating machines and its failure becomes a hard task to handle. This paper aims to propose the use of machine learning techniques to determine the Remaining Useful Life (RUL) of ball bearing based on vibration data collected using Condition Monitoring (CM) and feature reduction. There-Time domain features are extracted from the raw vibration signal, including Root Mean and Square(RMS), Root Amplitude (RA), and the RANGE where the health indicator is created using the dimensionally reduction by Applying the Principal Components Analysis (PCA) technique. Support Vector Regression (SVR) is used to model the nonlinear degradation of the constructed health indicator and its results are fed into the Hammerstein-Wiener approach to forecast the future state of the critical component. The RUL is determined based on the forecasted result. The overall all of the proposed techniques is compared to the Artificial Neural Network (ANN), which outperformance the model in terms of Root Mean Square Error (RMSE).

Keywords – Condition Monitoring (CM), Remaining Useful Life (RUL), Support Vector Regression (SVR), Principal Components Analysis (PCA), Artificial Neural Network (ANN)



Ball bearing health monitoring using the Support Vector Regression and the Decision Tree Approach

Riadh Euldji ^{1*}, Mouloud Boumahdi ², Mourad Bachene ² and Euldji Rafik ²

¹ *Laboratory of Applied Automation and industrial Diagnostic, University of Djelfa, Djelfa 17000, Algeria.*

² *University of Medea, Department of Mechanical Engineering, Medea 26000, Algeria.*

**(r.euldji@univ-djelfa.dz.) Email of the corresponding author*

Abstract –Rotating machines present an essential tool in all the industries and production lines and one of its critical components are the Ball bearings, ball bearings deterioration leads to several problems such as the failure of the machine at an unexpected moment and thus a complicate maintenance decision making. This paper aims to enhance the proper monitoring of the ball bearing based on the Support Vector Regression (SVR) and the Decision Tree (DT) algorithm for effective maintenance decision making. The time domain features are extracted from the vibration monitored signal, and then a selection phase is launched to choose the most appropriate features, the SVR is trained using the selected features to track the evolution health state of the critical components, the proposed model is compared to other models including the Autoregressive Integrated Moving Average (ARIMA), Autoregressive Integrated Moving Average with Explanatory variable (ARIMAX), the proposed model surpasses all the remaining models in terms of Root Mean Square Error (RMSE), Mean Square Error (MSE), coefficient of determination (R²). The overall of the proposed methodology ensures the effectiveness of the proposed monitoring model, which should be further applied and developed for tasks regarding rotary machines.

Keywords – *Condition Monitoring (CM), Support Vector Regression (SVR), Decision Tree (DT), Autoregressive Integrated Moving Average (ARIMA), Autoregressive Integrated Moving Average with Explanatory variable (ARIMAX),*



Comparative Analysis of Transmission Line Models Across Varying Lengths: A Comprehensive Study on Relative Comparison in Terms of Current, Voltage, Power, Loss, Regulation and Efficiency

Cemil ALTIN^{1*}

¹Electrical and Electronics Engineering Department/Faculty of Engineering and Architecture, Yozgat Bozok University, Turkey

*(cemil.altin@yobu.edu.tr)

Abstract – In this study, the absolute differences between long, medium and short transmission line models in terms of sending end voltage, current, power factor, apparent power, active power, reactive power, voltage regulation, voltage drop, active power loss, line efficiency, charging current and voltage rise as the total length of the transmission line is varied are investigated. According to the results obtained, it was seen that the long transmission line models performed excellent calculations for medium and long transmission lines, while they were able to accurately calculate many parameters of short transmission lines. It has been observed that the parameters of the short transmission line that cannot be calculated correctly are due to the neglected admittance. As a result, it has been shown that the values of transmission lines of all lengths can be calculated accurately with the long transmission line model. It has also been observed that approximate and exact models give very close values to each other in transmission lines up to 500 km. It has been proven that using the approximate model for all lines between 80-500 km will not cause any problems, as the approximate model, which is easier to apply than the exact model, gives the same results as the nominal pi model on lines up to 250 km.

Keywords – Transmission Line, ABCD Parameters, Nominal Pi, Line Models, Approximate Model



Purification, Applicability and Characterization of the Natural Algerian Clay for Anionic Dye Removal: Kinetic, Isotherm and Thermodynamic Studies

Atia Djamel^{*,1}, Zobeidi Ammar², Besserni Rabia¹, Mecheri Razika³

¹ Laboratory of Applied Chemistry and Environment (LCAE), Department of Chemistry,
Faculty of Exact Sciences, University of El Oued, 39000, El-Oued, Algeria.

² Pollution & Waste Treatment Laboratory, Department of Chemistry, Faculty of Exact Sciences,
University of El-Oued, P.O.Box. 216, El-Oued 39000 Algeria

³ Pollution & Waste Treatment Laboratory, Department of Chemistry, Faculty of Mathematical Sciences and Mathematics,
University Kasdi Merbah Ourgla, 300000 Algeria

**(atia-djamel@univ-eloued.dz) Email of the corresponding author*

Abstract – Removal of dyes by low-cost adsorbents is an effective method in wastewater treatment. Algerian natural clays were determined to be effective adsorbents for removal of an acidic dye (Congo red) from aqueous solutions in batch processes. Characterizations of the clays were carried out by Fourier-transform infrared spectroscopy (FTIR), x-ray diffraction (XRD), and scanning electron microscopy (SEM). Effects of the operational parameters such as adsorbent dosage, initial dye concentration, solution pH and temperature were investigated on the adsorption performance. Adsorption isotherms like Langmuir, Freundlich and Temkin were used to analyze the adsorption equilibrium data and the Langmuir isotherm was the best fit. Adsorption kinetics was investigated by pseudo-first-order, pseudo-second-order and the results showed that the adsorption system conforms well to the pseudo-second-order model. The thermodynamic parameters of adsorption (ΔS° , ΔH° and ΔG°) were obtained and showed that the adsorption processes were endothermic. Adsorption efficiency of CV increases with pH decreases for clay. The adsorption efficiency increased with increasing temperature, indicating that the adsorption of Congo red on clay was endothermic. This fact is confirmed by calculating ΔS° . The positive change of the entropy indicated that randomness became greater at solid/solution interface and there was an affinity of the clays toward CV. The clay conformed well to the pseudo-second-order model. Langmuir, Freundlich and Temkin isotherm models were used to describe adsorption equilibrium. The experimental data were well fitted by the Freundlich isotherm. The adsorption reaction is spontaneous because ΔG° negative.

Keywords – Clay, Adsorption, Congo Red, Isotherm Clay



Investigating the possibilities of using biopolymers nowadays.

Annamaria Polyákné Kovács ^{1*}, Vivien Konyhás ²

^{1,2} Energy, Ceramics, and Polymer technology Institute, University of Miskolc, Hungary

[*annamaria.polyakne@uni-miskolc.hu](mailto:annamaria.polyakne@uni-miskolc.hu)

Abstract –In this study, the applicability of PLA and TPS composites was investigated using various mechanical tests. In connection with the increasingly prominent and worldwide plastic pollution, the issue of biodegradable plastics has also become a current environmental protection topic. The market for biopolymers is currently small, but it represents a continuously and rapidly growing segment in the plastics and packaging industry, as well as in the production of disposable products. The versatility of biopolymers will certainly be fulfilled in the coming decade, and will also gain ground in engineering applications (electronic items, medical products, automotive products, 3D printing). Furthermore, the banning of single-use plastic products in the European Union will probably strengthen the research, product development and regulatory background of biopolymers. Although the topic is fashionable in scientific life, it is difficult to navigate the field due to the large number of available products with different compositions and properties and a variety of qualification standard procedures. In order to efficiently regulate the rapidly growing market, standardization processes are necessary for both production and quality assurance (degradation tests, labeling). Last but not least, in order for biopolymers to really be a solution – not just another problem – we must also deal with them as a type of waste and close the circle.

Keywords – Biodegradable Polymer, Mechanical Analyzing, Natural Fillers, TPS, Composite



Thermoanalytical testing of engineering plastics

Annamaria Polyákné Kovács ^{1*}, Tamás József Szabó ²

^{1,2} Energy, Ceramics, and Polymer technology Institute, University of Miskolc, Hungary

[*annamaria.polyakne@uni-miskolc.hu](mailto:annamaria.polyakne@uni-miskolc.hu)

Abstract – In this study, we examine different polymers, which can be classified as technical plastics, using thermoanalytical methods. From the results of these measurements, we were also able to gain insight into various crystal structure information. The crystallinity of polymers (its quality and extent) is significantly affected by the thermal and mechanical history, which greatly influences the properties (e.g.: strength, modulus), so its examination and knowledge are of practical importance. The arrangement of polymers in the solid phase is investigated by morphology, which primarily deals with the phenomenological description of already formed formations. The process of crystallization for low molecular weight substances has been studied for a long time. Compared to the regularities experienced there - as we will see later - polymers present special problems, which arise from the fact that structural units existing at different levels of magnitude can be observed, from the size range visible to the eye to the molecular size ranges. DSC is used to measure thermal effects, study thermal processes and characterize, identify or compare materials. More specifically, DSC can be used to determine the heat capacity and the enthalpy change of phase transitions (heat flow) as a function of time or temperature. The test materials represent a wide spectrum of engineering plastics. The reason for this is that they are present in a wide range of industrial uses, not only in the automotive industry but also in other areas. As a result, materials come into contact with many phenomena and are exposed to environmental effects, during which knowledge of their exact thermal properties is essential. During the study, we examined different PA, PEEK, PK, POM, PBT composites with DSC and DMA analysis.

Keywords: DMA, DSC, PBT, PEEK, PK, POM, PA, Composite, Thermal Analysis.



The influence of cutting tool wear On IT for AS13

Mohamed RAHOU

IS2M, Higher school of applied sciences, Algeria

am_rahou@yahoo.fr

Abstract – Determining manufacturing tolerances has a significant influence on the functioning of a product and especially on the production cost. In this paper, we propose an experimental study, focused on three stages, highlighting the influence of cutting tool wear on manufacturing tolerances for the machining of aluminium parts AS13. The first stage allows machining without eliminating manufacturing errors such that manufacturing tolerances are found as a function of total errors. In the second step, the results of the first step are filtered in such a way that we have tolerances based on random errors. Finally, from the two previous steps, we deduce the effect of tool wear on IT.

Keywords – *Cutting tool wear , IT , AS13*



PROTECTIVE EFFECT OF SAPONIN RICH EXTRACT AGAINST ROS IN PANCREATIC β CELLS

Anfel Benmanseur^{1*}, Fatma Zahra Hab¹, Rania Derguine², Rechda Amel Tachour¹, Mustapha Tacherfiout¹, Bachra Khettal¹ Malek Rezgui³, Widad Sobhi³

¹ Department of Microbiology, Faculty of natural sciences, University of Abderrahmane Mira, 06000, Bejaia, Algeria

² Department of Biochemistry, Faculty of natural sciences, University of Ferhat Abbas, 19000, Sétif, Algeria

³ Biotechnology research center, 25000, Constantine, Algeria

*(anfel.benmanseur@univ-bejaia.dz)

Abstract – Pancreatic β cells are vulnerable to damage caused by Reactive Oxygen Species (ROS), which can contribute to the progression of diabetes. This study examines the protective effects of a saponin-rich extract against harm caused by reactive oxygen species (ROS) in pancreatic β cells. The extract from *Anabasis articulata* is well-known for its high saponin content and antioxidant activity. It underwent rigorous extraction processes. Pancreatic β cells were exposed to streptozotocin that induce ROS and oxidative stress, followed by treatment with various concentrations of the saponin-rich extract. The measurement of total oxygen species was carried out using the fluorescent probe DCFDA. The results were quantified using a spectrophotometer plate reader. The results indicate the relative intensity of cell staining with DCFDA after treatment with the saponin-rich extract. These findings highlight the potential of saponin-rich extracts to protect pancreatic β cells against oxidative stress, indicating their therapeutic relevance in diabetes management. Further investigations are necessary to clarify the precise molecular mechanisms underlying these effects and to optimize formulation for improved efficacy and bioavailability.

Keywords – Saponin-rich extract, Reactive Oxygen Species (ROS), Pancreatic β cells, Oxidative stress, Antioxidant



Green weapon, the Allelopathic potential of Essential oils for weed suppression

Soltane Sabrine^{#1}, Benmeddour Tarek²

[#]Department of Nature and Life Sciences; Laboratory of Genetic, Biotechnology and Valorisation of Bioresources, University of Mohamed khider Biskra, Algeria..

sabrane.soltane@univ-biskra.dz

Abstract – In African agriculture, weeds have been identified as the primary culprits behind the largest yield losses in major crops and significant challenge to food security .

Allelochemicals are secondary metabolites produced by plants that can have various effects on neighboring plants, which can either inhibit or stimulate growth. In this article we will explore the activity of essential oils extracted from aromatic plants as allelochemicals and their application in weed control. By adopting environmentally friendly approaches we can decrease our reliance on chemical herbicides, which not only have negative effects on the environment and human health but also. Developing green and sustainable methods is crucial for our environment and future well being.

As a result of the completed research; to maximize allelopathic effects for weed control, it is essential to choose an adequate extraction method, taking into account both the chemical profile of the oil and practical consideration of yield.

The chemical composition of essential oils is complex and consists of a multitude of volatile compounds such as terpenoids, phenols, and aldehyde, among others. These constituents are responsible for the allelopathic effects. Terpenoids like carvacrol and thymol, as well as phenols like eugenol and cinnamaldehyde, have shown powerful herbicidal activities due to their ability to disrupt cell membranes and interfere with vital enzymatic processes in weeds.

Employing nano particles as carriers for bioactive compounds has gained significant attention in weed management. It enables targeted delivery and gradual dispersion of allelochemicals; this method increases the potency and lowers the quantity of chemicals needed. The nano-particles serve to protect essential oils from rapid degradation in the environment, ensuring prolonged action. This application amplifies the suppressive effects of these substances on weeds.

Let's explore how these natural compounds can contribute to sustainable and environmentally friendly approaches for green agriculture .

Keywords – Bioactive, Green, Sustainable, Agriculture, Weed, Allelochemicals, Nano-Particles, Control, Environment



A Decision Tree Approach for Detecting and Classifying Rolling Element Bearing Faults in Asynchronous Machines

Abdelhafid BENYOUNES ^{1*}, Abdelghafour HERIZI ², Riyadh ROUABHI ², Fayssal OUAGUENI ²

¹Department of Electrical engineering, Faculty of Technology, University of M'sila, Algeria

²LGE Research Laboratory, Department of Electrical engineering, Faculty of Technology, University of M'sila, Algeria

*abdelhafid.benyounes@univ-msila.dz

Abstract – This paper presents a modern approach for the detection and classification of rolling element bearing faults in asynchronous machines using decision tree algorithms. These algorithms offer a robust and interpretable method for fault diagnosis, overcoming the limitations of traditional methods that often require complex signal processing and expert knowledge.

The proposed approach utilizes readily available motor data, such as vibration signals and electrical parameters, as input features for the decision tree model. This eliminates the need for specialized sensors or invasive procedures. The decision tree is trained on a dataset of labeled fault and healthy conditions, enabling it to effectively identify and classify different types of rolling element bearing faults.

The paper demonstrates the effectiveness of the proposed method through experimental validation on real-world data from asynchronous machines. The results show that the decision tree model achieves high accuracy in fault detection and classification, outperforming traditional methods in terms of simplicity, interpretability, and computational efficiency.

This work offers a valuable contribution to the field of condition monitoring and fault diagnosis, providing a reliable and practical tool for early detection and classification of rolling element bearing faults in asynchronous machines. This can significantly improve machine reliability, reduce maintenance costs, and prevent catastrophic failures.

Keywords – Fault Diagnosis, Rolling Element Bearing Faults, Decision Tree, Asynchronous Machines, Vibration Signals, Condition Monitoring



Uncovering the Anti-inflammatory Potential of Phosphoramidates: A Comprehensive Study on Molecular Docking, DFT, and ADMET Analysis for the Development of Novel Therapeutic Agents

Dehmchi Djenet Amel ^{1,2*}, Bouchareb Fouzia ^{1,2} and Berredjem Malika ²

¹ Department of Chemistry, Faculty of Science and Technology, Chadli Bendjedid University, BP : 73, El Tarf 36000, Algeria.

² Applied Organic Chemistry Laboratory (LCOA). Biomolecule Synthesis and Molecular Modeling Group. Faculty of Science, Badji Mokhtar University. BP : 12, 23000 Annaba, Algeria.

*(djenet23@yahoo.com/d.dehmchi@univ-eltarf.dz) Email of the corresponding author

Abstract – The development of novel therapeutic agents for anti-inflammatory therapies is of great importance in the field of medicine. Phosphoramidates and phosphoramidates, well recognized for their significance as drugs and prodrugs, have gained significant attention due to their diverse pharmacological activities, including anti-inflammatory properties. In this study, a comprehensive investigation was conducted using molecular docking, Density Functional Theory (DFT), and ADMET analysis to explore the potential of three specific bisphosphoramidate compounds as anti-inflammatory drugs. Molecular docking was employed to assess the interaction between these compounds and their respective receptors, providing insights into their binding affinity. DFT calculations were utilized to study the electronic structure, energy levels, and other important properties of the compounds. Furthermore, ADMET analysis was performed to evaluate their absorption, distribution, metabolism, excretion, and toxicity profiles. By integrating these approaches, we gained valuable information on the most favorable conformations of the phosphoramidate derivatives and their potential as novel anti-inflammatory drug candidates. This multidisciplinary approach enhances our understanding of the molecular interactions and properties of these compounds, facilitating the discovery and development of promising therapeutics specifically targeting anti-inflammatory therapies.

Keywords – ADMET, anti-inflammatory, DFT, molecular docking, phosphoramidates.



Eco-Friendly Synthesis of Novel organometallic Complexes Using Bis(phenylamino) phenylphosphine oxide and Bis(tert-butylamino) phenylphosphine oxide

Dehmchi Djenet Amel ^{1,2*}, Bouchareb Fouzia ^{1,2} and Berredjem Malika ²

¹ Department of Chemistry, Faculty of Science and Technology, Chadli Bendjedid University, BP : 73, El Tarf 36000, Algeria.

² Applied Organic Chemistry Laboratory (LCOA). Biomolecule Synthesis and Molecular Modeling Group. Faculty of Science, Badji Mokhtar University. BP : 12, 23000 Annaba, Algeria.

*(djenet23@yahoo.com/d.dehmchi@univ-eltarf.dz) Email of the corresponding author

Abstract – Transition metals have become increasingly important in medicinal chemistry due to their unique properties that can be exploited in drug design. These metals have demonstrated the ability to effectively treat various human diseases, including cancers, infections, inflammatory and neurological disorders, and diabetes. Transition metals possess the ability to alter their oxidation state and interact with negatively charged molecules, which contributes to their high biological activity. This has resulted in a growing interest in the development of metal-based drugs, which have shown promising pharmacological applications and offer potential therapeutic opportunities for combating a range of diseases. Organophosphorus compounds, including phosphoramidates, have been synthesized to form many important complexes. Various types of transition metal complexes are available that can be effectively utilized for carrying out diverse transformations. Phosphoramidates are particularly attractive due to their modular scaffold and ability to coordinate in a variety of ways, making them versatile compounds for drug development. The goal of this research was to synthesize novel organometallic complexes using Bis(phenylamino)phenylphosphine oxide and Bis(tert-butylamino)phenylphosphine oxide under microwave activation. Microwave radiation offers a promising approach to accelerating chemical reactions with greater efficiency, particularly in cases where conventional processes fall short or cause environmental harm. This approach offers the advantage of limiting pollution by minimizing waste production, eliminating the need for waste disposal and treatment.

Keywords – Phosphoramidates, Microwave, Organophosphorus, Transition Metals.



Inequality And Social Protection Policies (The Case of Albania)

Lindita Kiri

Department of social sciences, Qiriaz University, Tirana, Albania

(linditakiri@yahoo.com) Email of the corresponding author

Abstract – Social protection schemes are a separate set of rules supported by one or more institutional units that regulate the provision of social protection benefits and their financing. The paper aims to describe the current systems of social protection, both contributory and non-contributory, and to evaluate trends and performances in accordance with the structure and levels of social expenditures. Social protection systems since the beginning have had a great impact on the improvement of socio-economic conditions in European countries. The creation of welfare systems has influenced the redistribution of income and, consequently, the reduction of the level of inequality. An analysis of inequality is made according to the models of social welfare systems in Albania. The Albanian system of social protection is characterized by a relatively low level of expenditure. In 2017, Albania spent only 9.2 percent of GDP on social protection (excluding health insurance), which was less than half the EU average and significantly below neighboring EU aspiring countries. This reflects low beneficiary coverage (except for old-age pensions) and low benefit levels.

Keywords – *Social Welfare Policies; Income Components; Inequality; Income Redistribution,*



Enhancing hydrogen recovery in methanol sono-pyrolysis: The influence of methanol concentration under an argon atmosphere

Aissa Dehane^{*1}, Slimane Merouani¹, Atef Chibani²

¹Laboratory of Environmental Process Engineering, Department of Chemical Engineering, Faculty of Process Engineering, University Constantine 3 Salah Boubnider, P.O. Box 72, Constantine 25000, Algeria

²Research Center in Industrial Technologies CRTI, P.O.Box 64, Cheraga, Algiers 16014, Algeria

^{*}aissaleon15@gmail.com

Abstract – This study examines the influence of methanol concentration in the bulk liquid on the maximal sonochemical efficiency for hydrogen production, methanol conversion, and the range of the active bubble range. The used model is based on a series of ordinary differential equations that consider the non-equilibrium evaporation and condensation of water vapor and methanol at the bubble wall, thermal conduction both within and outside the bubble, and the heat generated by chemical reactions. The study revealed that varying the methanol concentration (0–100% (v/v)) has a minor impact on the range of active bubbles affecting methanol consumption. In contrast, hydrogen production exhibits a gradual reduction in the range of active bubbles for methanol concentrations exceeding 20%. The highest sonochemical efficiency for hydrogen production, methanol conversion, and the broadness of active bubble ranges (for both H₂ production and CH₃OH conversion) is achieved at 80% argon concentration and methanol concentrations ranging from 7% to 20%.

Keywords – Methanol, Sonolysis, Hydrogen Production, Active Bubbles Range, Methanol Conversion.



Planktonic communities of Lake Cadagno, Piora Valley

Stela Ruci^{1*}, Eni Hoxha², Anisa Toska³, Shpëtim Vata⁴

^{1,2,3,4} *Department of Biology, Faculty of Natural Sciences, University of Tirana, Albania.*

**Corresponding author e-mail: stela.ruci@fshn.edu.al*

Abstract - The aim of this study is to analyze the species composition of zooplankton and phytoplankton living in the mixolimnion, monimolimnion, and particularly the chemocline layers of Lake Cadagno. Lake Cadagno, situated in the Piora Valley, has been the subject of significant scientific interest due to its unique water column stratification. A total of 61 species were identified in the lake during sampling conducted across three layers - mixolimnion, chemocline, and monimolimnion - in July 2023. Most species belonged to the ciliate group, comprising 14 species. The mixolimnion layer exhibited the highest species diversity. In the monimolimnion layer, a notable diversity of microalgae was observed, predominantly Chlorophyta and Diatom groups. The most prevalent groups across the three layers were Ciliophorans in the mixolimnion, Chlorophyta, and Diatoms in the chemocline and monimolimnion layers. The significance of Lake Cadagno's unique characteristics in sheltering diverse zooplankton, phytoplankton and bacterioplankton species can be attributed to its physio-chemical conditions.

Keywords: stratification, microalgae, ciliate group, sampling, layers.



Enhancing the efficiency of solar cell based graded perovskite absorber: SCAPS-1D software

A. YOUSFI*, O. SAIDANI

ETA Laboratory, Department of electronics, Faculty of technology, University Mohamed El Bachir El Ibrahimi
of Bordj Bou Arréridj-34030, Algeria

*(abderrahim.yousfi@univ-bba.dz) Email of the corresponding author

Abstract –In this paper, an investigation through a numerical simulation study of the impact of a graded absorber layers of solar cell-based perovskite using SCAPS-1D software under AM1.5 is being done. The simulated structure includes an absorber layer of Cesium Tin-Germanium Tri-iodide ($\text{CsSn}_{0.5}\text{Ge}_{0.5}\text{I}_3$) sandwiched between IGZO and Cu_2O layers. To achieve this aim, we compare our simulation results with experimental data from literature and find out that there is a good agreement between the two outcomes. It's found that by setting module thicknesses to specific values it is possible to reach 28 % maximum conversion rate perovskite-based solar cells with triple absorber layers structures are able to give power conversion efficiency. This letter of maximum PCE can be realized by choosing certain thicknesses for each layer or film used in fabricating them as has been demonstrated here. To show how different thickness values can affect the performance of the cell; it was shown that when optimized, these values lead to about 29% enhancement in the PCE. The three-layer architecture achieves as much as 29% increase in PCE compared to its planar counterpart.

Keywords – Perovskite solar cell, $\text{CsSn}_{0.5}\text{Ge}_{0.5}\text{I}_3$; PCE; ETL/HTL; SCAPS-1D



Food Insecurity: A Study on Drivers, Dimensions, and Challenges

Addala Benmehdi ^{*,1}

¹National Graduate School of Political Science, Algeria

^{*}(Addala.bm2@gmail.com) Email of the corresponding author

Abstract – The study aims to identify the drivers leading to food insecurity, emphasizing the crucial importance of food security as part of the strategic priorities of nations, which strive to achieve sufficient, safe, and nutritious food that meets the dietary needs of all people at all times, improving their food preferences for an active and healthy life through enhancing food security and promoting agriculture that considers nutritional considerations. Among the key drivers leading to food insecurity are climate fluctuations and extreme weather conditions negatively affecting agricultural productivity, as well as natural disasters such as floods, droughts, and extreme heat. Economic contraction has also negatively impacted agricultural systems, unemployment rates, and wages. Recent years have seen conflicts such as the Russo-Ukrainian War, political disruptions, and the COVID-19 pandemic as major drivers of food insecurity. The study has reached several conclusions, including:

- Food security is directly related to the agricultural sector, necessitating the enhancement of agricultural systems that employ climate-smart techniques and produce a more diverse range of food items to improve the resilience of food systems and increase farmers' income.
- Food insecurity threatens the economic, political, and social stability of a country.
- Any food supply shortage leads to inflation, pressures on financial and tax systems, as well as famine and malnutrition.

Keywords – Food security, Agricultural sector, Climate fluctuations, War.



Modeling of thermal deformation of concrete at different curing temperatures using two-phase composite material models

Farid Bouziadi^{1,*}, Nefissa Belkacem², Touhami Tahenni³, Abdelkader Haddi⁴, Bensaid Boulekbache¹, Mostefa Hamrat¹

¹Laboratory of Materials Sciences and Environment, Hassiba Benbouali University of Chlef, Algeria

²Laboratoire de Contrôle, Essais, Mesures et Simulations Mécaniques, Hassiba Benbouali University of Chlef, Algeria

³Laboratory of Acoustic and Civil Engineering, Djilali Bounaama University of Khemis Miliana, Khemis Miliana, Algeria.

⁴Univ. Artois, IMT Lille Douai, Junia, Univ. Lille, ULR 4515, Laboratoire de Génie Civil et géo-Environnement, Béthune, France

*Corresponding author: bouziadi.farid@gmail.com

Abstract- This study aims to propose a new approach to predict the thermal deformation behavior of building element at different temperature levels (20 °C, 50 °C, 80 °C), by using nonlinear finite element analysis. The new approach is based on the coupling between Burger's rheological model, two-phase composite material models and maturity concept. Burger's rheological model is employed to predict the thermal deformation. Furthermore, the maturity approach is employed to evaluate the mechanical properties of concrete. However, the thermal properties of concrete used in building element are estimated by two-phase composite material models. The obtained results show that increasing the temperature amplifies the rate and the magnitude of the thermal deformation and stress generated by thermal shrinkage.

Keywords: Concrete; Thermal Deformation; Two-Phase Model; Maturity Concept; Burger's Rheological Model.



Varying Base Pressure and Groundwater Level Effect on Settlement of Clayey Soil Under Circular Loading

Emrah Dağlı*

¹Civil Engineering/Faculty of Engineering, Zonguldak Bulent Ecevit University, Türkiye

*(emrahdagli@beun.edu.tr)

Abstract – Settlement of clayey soil depends on various factors. Groundwater level and base pressures are main responsible ones. In this study, base pressure and groundwater level impact on soil settlement were investigated 11 different ground water level (0-10 m below the ground surface) and 18 different base pressures (0-900 kPa) were used for this purpose. 198 cases were analysed with Settle 3D software. Soil layers used were 10 m sand layer, following 10 m of clayey layer and 10 m sand layer again which was totally 30 m. Bousinessq method was selected for stress computations. Settlements were calculated for 10 to 18250 days (50 years). Graph between base pressure and settlement were drawn for maximum settlement of all cases. Base pressure values made settlement values exceeded 7.5 and 12.5 cm were also evaluated. Results showed that there can be created a relationship of 2nd degree polynomial between base pressure and settlement. Settlements for all cases were below 7.5 cm when the base pressures were 100 kPa and lower. Settlement of Case 1 (groundwater level at the beginning of clay layer) were approximately 1.35 times of Case 11 (groundwater level at the end of clay layer). Change in groundwater level and level of base pressure must be taken into account while computing settlements of engineering structures.

Keywords – Base pressure, Clayey Soil, Groundwater level, Settle 3D, Settlement.



Ultrasound Water Bath and Ultrasound Probe Assisted Phenolic Extraction From Red Beet Peels: Investigation of Their Anticancer Activity in Colon Cancer Cells

Tuğçe KARADUMAN YEŞİLDAL *¹

¹ Department of Molecular Biology and Genetics, Faculty of Arts and Sciences, Aksaray University, Turkey.

*(tugcekaraduman48@gmail.com)

Abstract – Cancer, which causes thousands of deaths worldwide every year, is considered one of the most important health problems of our time. Chemotherapy and radiotherapy are the most widely used techniques in cancer treatment. However, many drugs used in chemotherapy and radiotherapy also show cytotoxicity to normal cells. In addition, chemotherapeutics show activity against broad cellular or molecular targets due to their non-specific distribution in the body. For all these reasons, there are intensive efforts to find natural alternatives to chemotherapy in cancer treatment. In addition to the vitamins and minerals they contain, fruits and vegetables in our daily diet also contain many natural bioactive compounds. These natural bioactive compounds have been found to play an active role in the characterization of these foods as cancer preventive. In addition, many bioactive compounds have been reported to have special colors with pigments. When foods containing red pigments are examined, it has been found that they have anticancer, anti-inflammatory and antioxidant properties. However, experiments on different conditions for the extraction of bioactive components and the mechanisms underlying these effects are still ongoing. The main objective of this study was to evaluate the anticancer activity of polyphenolics obtained from red beet peel by ultrasonic water bath and ultrasonic probe assisted phenolic extraction using human colon cancer cell line (HT-29) by MTT assay and colony formation assay. Our analyses show that the phenolic extract of red beet peel showed dose-dependent antiproliferative effect and inhibited colony formation in HT-29 cells. In conclusion, the phenolic extract from red beet peel selected in this study was found to have anticancer activity in human colon cancer cells.

Keywords – Red beet peel, phenolic extract, HT-29, anticancer activity, colony formation assay.



Exploring the Anti-inflammatory Properties of Phosphonamides: A Docking Study for the Development of Novel Therapeutic Agents

Dehmchi Djenet Amel ^{1,2*}, Bouchareb Fouzia ^{1,2} and Berredjem Malika ²

¹ Department of Chemistry, Faculty of Science and Technology, Chadli Bendjedid University, BP : 73, El Tarf 36000, Algeria.

² Applied Organic Chemistry Laboratory (LCOA). Biomolecule Synthesis and Molecular Modeling Group. Faculty of Science, Badji Mokhtar University. BP : 12, 23000 Annaba, Algeria.

*(djenet23@yahoo.com/d.dehmchi@univ-eltarf.dz) Email of the corresponding author

Abstract – The development of novel therapeutic agents for anti-inflammatory treatments holds significant importance in the medical field. Phosphoramidates and phosphonamides, known for their medicinal significance as drugs and prodrugs, have garnered attention due to their diverse pharmacological activities, including anti-inflammatory properties. In this study, we conducted a docking study using Maestro from the Schrödinger Suite to investigate the potential of three specific bisphosphonamide compounds as anti-inflammatory drugs. The docking study focused on assessing the interaction between these compounds and their respective receptors, providing valuable insights into their binding affinity. By utilizing this approach, we gained valuable information on the most favorable conformations of the phosphonamide derivatives and their potential as novel anti-inflammatory drug candidates. This docking study, performed with Maestro from the Schrödinger Suite, enhances our understanding of the molecular interactions and potential therapeutic applications of these compounds in targeting anti-inflammatory pathways.

Keywords – Anti-Inflammatory, Molecular Docking, Maestro, Phosphonamides.



Optoelectronic Properties and Device Performance of pérovskite inorganique Solar Cells: A Simulation Approach

Abdelkader Bouhenna ^{1*}, Kada BOUALEM ¹, Nabil Beloufa^{2,3}, Soufi Hadjer⁴, Aboubakr seddik kebaili⁵

¹Science of Materials and Applications Laboratory (LSMA) /Physics Department /university of An Témouchent ,Algeria.

²Hydrometeorological Institut for Formation and Research IHFR ,Oran, Algeria.

³Laboratory of Micro and Nanophysics (LaMiN)National Polytechnic School Oran, ENPO-MA, BP 1523, El M'Naouer, 31000,Oran, Algeria.

⁴Unité de recherche matériaux et énergies renouvelables, université de tlemcen, abou bekr belkaid , BP 119 tlemcen 13000.Algeria

⁵Unité de Recherche Matériaux, Procédés et Environnement (URMPE) de l'UMBB

* aekbouhenna48@gmail.com

Abstract - For accurate modelling of the electrical output characteristics of photovoltaic solar cells, the basic semiconductor equations are the hole and electron continuity equations and the Poisson equation. It is available free of charge to the photovoltaic research community and can be freely downloaded. It runs on a Windows operating system environment. With this software you can analyse the characteristic curve $I - V$, spectral response (QE) of a device, power conversion efficiency (PCE), form factor (FF), short-circuit current I_{sc} , open-circuit voltage V_{oc} , energy bands of the materials used in the solar cell and concentration of the different materials used by solving the basic semiconductor equations. The study of the different structures will consist of studying the FTO/WS₂/RbGeI₃/MoO₃ cell. The steps to be followed for the two parts will be as follows:-Study of the influence of the thickness of the ETL layer- Study of the influence of the thickness of the absorbing layer- Study of the influence of temperature- Study of the N_A doping density of the absorbing layer.

Keywords – FTO/WS₂/RbGeI₃/MoO₃- PCE - ETL-solar cell



Removal of pharmaceutical micropollutants by Zn/Al layered double hydroxide from water: Kinetics and equilibrium studies

Ghemit Rima^{*1}, Makhloufi Abdesslem^{2,3}, El koli Meriem²

¹ Laboratory of Multiphase Polymeric Materials, Ferhat Abbas University, Sétif 19000, Algeria

² Laboratory of biopharmacy and pharmacotechnics. Ufas1. Sétif, Algeria

³ Industrial engineering department, Abbas Leghrour University, Khenchla 40000, Algeria

* Email of the corresponding author esssalim@yahoo.fr; mekhloufi_abdesslem@univ-khenchela.dz

Abstract – Zn/Al layered double hydroxide adsorbent was prepared by coprecipitation method then the product (ZnAl) was calcinated to obtain ZnAl-C. The sample was characterized by FTIR, XRD and PHzch, then evaluated for the ability to remove diclofenac (DIC) and Ibuprofen (IBU) from aqueous solution at different conditions. The adsorption isotherms of the drugs obeyed both the Langmuir and Freundlich isotherm models with the saturation adsorption amount onto ZnAl-C of 747 mg/g for DIC and of 173 mg/g for IBU. Hydrophobic interactions play an important role during the sorption process. In addition, ZnAl-C could be regenerated and reused for adsorption after four cycles.

Keywords – Diclofenac, Ibuprofenlayered Double Hydroxide, Adsorption, Isotherm, Regeneration



Determination of the level of lead in tissues of Mediterranean mussels from the Shëngjin coast, Albania

Egon Andoni^{1*}, Lek Prendi², Enkeleda Ozuni¹ and Blerina Luke³

¹Faculty of Veterinary Medicine, Agricultural University of Tirana, Albania

²National Authority of Veterinary and Plant Protection, Tirana, Albania.

³Directory of Veterinary, Ministry of Agricultural and Rural Development, Albania

*(eandoni@ubt.edu.al) Email of the corresponding author

Abstract – The purpose of the investigation was to evaluate the concentration levels of lead (Pb) in Mediterranean mussels (*Mytilus galloprovincialis*) caught in the Shengjin coastal area, Albania. A total of 45 mussel tissues were utilized to determine the levels of lead. All the samples tissue were analyzed by Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) Thermo iCAP 6000 series. The lower value of lead resulted 0.83 (µgr/gr) and the highest value resulted 4.01 (µgr/gr). The mean value of lead in tissue of Mediterranean mussels resulted higher than the permissible limits for human consumption suggests from the Albanian legislation. In order to have a clear view of lead accumulation and other heavy metals in the bay of Shëngjin, further studies are needed in the near future.

Keywords – Lead, Shengjin Bay, Mediterranean Mussels, Limit, Concentration.



The Rock Art of Neolithic Man at Ain Al-Naqah, Djelfa: A Glimpse into the Past

Alala Saihi ^{*,1}

¹Department OF History and Geography/ Higher School of Teachers, Laghouat, Algeria

^{*}(a.saihi@ens-lagh.dz) Email of the corresponding author

Abstract – The Ain Al-Naqah site, located in the Djelfa province of central Algeria, stands as a remarkable testament to the artistic and cultural achievements of Neolithic man. This ancient rock art site, nestled amidst the rugged terrain of the Saharan Atlas Mountains, offers a tantalizing window into the beliefs, traditions, and daily lives of our Neolithic ancestors. Discovered in the early 20th century, the Ain Al-Naqah site has since become a focal point for researchers and archaeologists seeking to unravel the mysteries of North Africa's prehistoric past. The site is home to a diverse array of rock engravings and paintings, which collectively paint a vivid picture of the Neolithic societies that once thrived in this remote corner of the Sahara. One of the most striking features of the Ain Al-Naqah rock art is the sheer variety of motifs and themes depicted. The human depictions offer a fascinating insight into the social and cultural structures of Neolithic communities, with many engaging in activities such as hunting, herding, or participating in ritualistic ceremonies. The attention to detail and expressive nature of the figures suggest a highly developed artistic tradition and a deep connection between people and the natural world. Another striking feature of the Ain Al-Naqah rock art is the variety of motifs and themes depicted. The site features an assortment of human and animal figures, intricate geometric patterns, and abstract designs. The use of color in the rock art, while often monochromatic, adds a sense of movement and energy to the art. As researchers continue to study and interpret the site, new insights into the lives and beliefs of Neolithic men are constantly emerging. The rock art serves as a powerful testament to the ingenuity, creativity, and resilience of our distant ancestors, providing a rare opportunity to connect with the past and better understand the foundations of our modern societies.

Keywords – Ain Al-Naqah site, Algeria, Djelfa, Neolithic, Rock art.



The self-compacting concrete (SCC) formulation methods and their effect on the physico-mechanical properties of an experimental study

Rachid Rabehi ^{*,1}, Mohamed Rabehi ¹, Mohammed Omrane ¹, Ouassila Bahloul ², Said Zaouai ¹ and Mohamed Amieur ³

¹University of Djelfa, Civil Engineering Department, Algeria

²University of Batna2, Civil Engineering Department, Algeria

³National School of Built and Ground Work Engineering, Algeria

^{*}(rachid.rabehi@univ-djelfa.dz) Email of the corresponding author

Abstract – The concrete industry recognizes self-compacting concrete (SCC) as one of the most revolutionary and efficient developments. In devising self-compacting concrete, the role of the formulation method is critical and could influence the fresh and hardened properties of the concrete. There are very limited studies regarding formulation methods for self-compacting concrete and their effect on concrete properties, especially in the Algerian construction industry. Therefore, this study is aimed at determining the most influential formulation method for the fresh and hardened properties of SCC. It is essential to understand and determine the most influential formulation method in order to produce an economical and practical self-compacting concrete. This can be achieved by improvising the existing concrete mix or innovating a new mix design based on the most influential formulation method. The effectiveness of the new mix design can then be evaluated by its performance in a fresh and hardened state. This research will be conducted based on an experimental study that consists of several laboratory works in order to accomplish the objectives of the study. To plan the experiment, we conducted an extensive literature review to understand the fundamentals of self-compacting concrete, ensuring the approaches used in this study are both relevant and technically correct. The literature review study covered subjects regarding the basic principles and rheology of SCC, fresh and hardened properties, mix design, and the use of mineral admixtures in SCC. The findings are used as a guide and references for the experimentation.

Keywords – Formulation method, Fresh properties, Physico-mechanical properties, Self-compacting concrete (SCC).



Modern Teaching Strategies and Methods in Education

Brahim Belhaouari Toufik*, Romana Aissa ² Zerrouk Ali ³

¹Faculty of Humanities and Social Sciences/Psychosocial Research Lab, Yahia Farres Médéa University, Algeria

²Faculty of Humanities and Social Sciences/psychosocial Research Lab, Yahia Farres Médéa University, Algeria

³Faculty of Humanities and Social Sciences, Education Science for Guidance Lab, Yahia Farres Médéa University, Algeria

*(brahmt@yahoo.com)

Abstract – This study aims to identify strategies and methods teaching in modern education and factors that lead to the use of strategy or method. The current research has used descriptive research to achieve its objectives. The use of modern teaching techniques is significant in the field of practical knowledge and the requirements for the latter's development, given the rapid flow of knowledge and the enormous amount of information caused by modern means and the difficulty of taking note of all developments that are taking place globally in the field of knowledge; Modern technology has also provided liquid and tools that have played a major role in developing learning methods from the end of the last century to the present day. And these means also contributed to the development of methods of learning and learning and the provision of an effective and positive climate that will help to stimulate students' interest, motivation, confront their fears and know their real abilities and contribute to ensuring the real quality of the educational process and achieving the desired upgrading and maturity of knowledge. Through effective educational means and activities, taking into account individuals' individual differences, which has helped to develop many talents and cognitive, emotional and intellectual abilities in all categories.

Keywords – Strategies; Methods; Teaching; Modern Education



The waste of plastic in building materials

Hammache Soumia*, Belmouhoub Amer ²

¹ *Department of civil and hydraulic engineering, University Mohamed khieder biskra, Algeria,*

²*Department of civil engineering, University 20 august 1955 skikda, Algeria*

**(soumia.hammache@univ-biskra.dz) Email of the corresponding author*

Abstract – The utilization of plastic waste in building materials is gaining attention as a sustainable solution to reduce environmental impact. Plastic waste can be incorporated into construction materials like bricks, tiles, concrete, and roads, serving a dual purpose of waste reduction and resource conservation. Studies show that plastic waste can be effectively used in producing high-strength bricks with thermal and sound insulation properties, reducing the need for clay and other mined materials. However, caution is advised as excessive plastic waste incorporation may lead to a decrease in compressive strength, necessitating the identification of optimal plastic waste content for enhanced thermal resistance without compromising strength. Plastic bricks have emerged as an economical and environmentally friendly alternative to traditional clay bricks, showcasing promising results in water absorption and compressive strength tests.

Keywords: *Waste-Plastic-Building, Materials-Compressive, Strength-Concrete .*



Pharmacoeconomic analysis cost-effectiveness of cosmetic ingredients

Neli Markova¹ Stefka Valcheva-Kuzmanova²

¹Department of Chemistry, Faculty of Pharmacy, Medical University of Varna, Bulgaria

²Department of Pharmacology and Clinical Pharmacology and Therapeutics, Faculty of Medicine, Medical University of Varna, Bulgaria

Neli.Markova@mu-varna.bg Email of the corresponding author

Abstract – Cosmetic products are designed for the skin and ensure its maintenance and good condition. For a more economically efficient result, it is necessary to carry out an economic evaluation of the resources invested and the results achieved. An economic evaluation is a comparative analysis of the cost-benefit outcomes of various alternatives.

Fifteen ingredients designed for oily and acne-prone skin were studied. For four of the cases, the efficacy was established in two ways with an in vitro test and an in vivo clinical study. Efficacy has been proven with the results of an in vitro 5 α -reductase activity inhibition test and in vivo efficacy clinical tests. Cost-effectiveness analysis were performed, determining the average cost per unit outcome (CER). There are many methods for evaluating performance, none of which is accepted as a common standard. Most often, efficacy is determined by a clinical in vivo efficacy study, which, although a subjective method, comprehensively considers the influence of the ingredients on all acne-causing factors. The results of "cost-effective" analysis show that is a complex based on Butyl Avocadate the most suitable, regarding the results of the in vivo efficacy test. It is second-choice alternative based on the analysis of proven in vitro efficacy, which however addresses only one of the acne-causing factors.

Cost-effectiveness analysis is the appropriate method for analyzing ingredients with the same purpose and leading to the same type of results.

Keywords –cost-effectiveness analysis, acne, cosmetic ingredient, inhibition of 5 α -reductase.



Influence of fly ash powder in rheological behavior of ecofriendly concrete

Hamza SOUALHI^{1,*}, Salim SAFIDDINE², Akram Salah Eddine BELAIDI¹, El-Hadj KADRI³, Tien-Tung NGO³,
Lynda Amel CHAABANE⁴

¹LRGC laboratory, Civil Engineering Department, University of Laghouat – Algeria

²LME laboratory, Civil Engineering Department, University of Médéa – Algeria

³L2MGC laboratory, Civil Engineering Department, University of CY Cergy-Paris – France

⁴LPCMA laboratory, Civil Engineering Department, Sidi Bel Abbès University, Algeria

*(hamza_s26@yahoo.fr) Email of the corresponding author

Abstract – This research examines the rheological characteristics of concrete mixes containing various industrial wastes as a partial replacement for cement, with the aim of creating concrete with a reduced environmental impact. A control mix composed solely of Portland cement was compared with other mixes containing combinations of cement and fly ash at various replacement rates ranging from 0% to 60%. Using a new concrete rheometer, the plastic viscosity and shear threshold of the concretes were measured at different degrees of slump. The recently created rheometer is portable, convenient for use on building sites, and straightforward to operate in a lab. The rheometer is composed of three primary components: a steel vane, a cylindric container, and an agitator with electronic speed control and a torque meter that records the torque applied for each speed. A technique that translates torque and velocity data into shear stress vs shear rate was used to quantify rheological parameters. The results indicate that the type and rate of substitution of materials influence the rheological properties of low environmental impact concrete. More specifically, an increase in the substitution rate leads to an increase in the plastic viscosity of concretes made with different types of materials added in this study.

Keywords – Rheology, Plastic viscosity, Yield stress, ecofriendly concrete, fly ash



Determining the structure of a single crystal thiourea derivative compound involves a combined approach that utilizes both computational and experimental methods, incorporating analyses of electronic properties

Nour Eddine Benharkat^{*1}, Abdelkader Chouaih² Nourdine Boukabcha^{1,2}

¹Department of Chemistry/ Laboratory Chemical Plant – Water – Energy, Hassiba Benbouali University of Chlef, Algeria

²Department of Chemistry/ Laboratory of Technology and Solid Properties (LTPS), Abdelhamid Ibn Badis University of Mostaganem, Algeria

^{*}(n.benharkat@univ-chlef.dz) Email of the corresponding author

Abstract – New organic compound C₉H₁₃N₃S has been further investigated using density functional theory (DFT) with 6-31G(d,p) basis set combination to obtain optimized geometry. A good agreement is observed between experimental XRD structure and B3LYP optimized geometry. Structural investigation by single crystal XRD reveals that C₉H₁₃N₃S crystallizes in monoclinic system with space group P 2₁/C and the unit cell parameters are $a = 9.4518(8) \text{ \AA}$, $b = 8.3119(7) \text{ \AA}$, $c = 13.4442(10) \text{ \AA}$ and $\alpha = 90^\circ$, $\gamma = 90^\circ$, $\beta = 97.559^\circ$ (6). Frontier molecular orbitals (FMOs) and molecular electrostatic potential (MEP) studies have been performed at B3LYP/6-31G(d,p) level to calculate EHOMO–ELUMO gap as electronic properties.

Keywords – Crystallography, X-ray diffraction, Single crystal X-ray diffraction, DFT, Computational Chemistry, Theoretical Chemistry.



Dynamic behavior of carbon nanotube reinforced porous beam employing the first shear deformation theory

DJILALI DJEBBOUR Kenza^{*1,2}, NEBAB Mokhtar³, AIT ATMANE Hassen^{1,2}, BENNAI Riadh^{1,2}, Sallai Hind Hidayet⁴

¹ Laboratory of Structures, Geotechnics and Risks, Department of Civil Engineering, Hassiba Benbouali University of Chlef, Algeria.

² Department of Civil Engineering, Hassiba Benbouali University of Chlef, Algeria.

³ Department of Civil Engineering, Faculty of Technology, University of M'Hamed BOUGARA Boumerdes, Algeria.

⁴ Département des sciences, Centre universitaire Nour Bachir El-Bayadh, Algérie, Laboratoire d'instrumentation et matériaux avancées.

*(djilalidjebbourkenza@gamil.com)

Abstract – This study introduces a novel first-order shear deformation theory (FSDT) for analyzing the free vibration of porous beams reinforced with carbon nanotubes (CNTs). By reducing the number of unknowns and governing equations, the theory is streamlined, featuring only four unknowns in the displacement field compared to the five or more in alternative shear deformation theories. The distribution of CNT materials across the beam's height is modeled using Voigt models, with four variables representing different CNT variants. This approach incorporates transverse shear deformations and ensures zero-tension conditions on beam surfaces through a shear correction factor, derived from Hamilton's principle. The study also accounts for the effect of porosity on beam behavior. Examining various aspects such as distribution types of CNTs, mode values, thickness-to-length ratio (L/h) values, and porosity, the research reveals significant influences on the inherent vibration characteristics of FG-CNT beams. The findings contribute novel insights into the subject matter, setting a benchmark for future investigations in the field.

Keywords – Carbon Nanotube Reinforced Composite Beams, First-Order Shear Deformation Theory (FSDT), Free Vibration, Porous Beam



LAPAROSCOPIC SURGERY IN THE MANAGEMENT OF UNUSUAL LOCALIZATION OF ECHINOCOCCOSIS

Assia Haif ^{*}, Djelloul Achouri ², Meryem Benmarce ³

^{1,2}Department of Pediatric Surgery / hospital university center of Setif, Algeria

^{1,2,3}Laboratory of Applied Pediatric Surgery, Ferhat Abbas University Setif 1, Algeria

³Faculty of Natural and Life Sciences, Ferhat Abbas University Setif 1, Algeria

**(a.haif@univ-setif.dz) Email of the corresponding author*

Abstract – Echinococcosis is common term currently used according to an international consensus on terminology, it designates the disease (s) related to infection with parasites of the *Echinococcus* (E) genus. Algeria is considered as endemic areas. In children, echinococcosis mostly involves the lungs and, less frequently the liver. It may occur in the spleen (1-3%), peritoneum (3-5%), kidneys (2%), brain (2%) and, more rarely, the heart, bones, pancreas.

We report in this work our experience on laparoscopic surgery in the management of exceptional localization of hydatid cyst. This is a retrospective study; we reviewed the data of case series in patients with unusual location of echinococcosis between 2015 to 2022. Abdominal pain was the most frequent clinical signs, abdominal mass in some cases and worsening of general status in other cases. Biological parameters were within normal limits, Abdominal ultrasound, practiced in all cases, completed by abdominal computed tomography (CT) showed a cystic lesion. The distribution of cysts is located in: spleen, diaphragm, omentum, psoas, pancreas and kidney. All cysts were successfully managed in our department by laparoscopy. Medical treatment with oral Albendazole is associated with surgery. No recurrence of the cyst during the follow up period, the cosmetic result was excellent. There was no mortality.

Echinococcosis can affect any organ in the body from head to toe. However, hydatid cyst should be kept in mind when a cystic lesion is encountered anywhere in the body. Laparoscopic surgery approach should follow the same principals with those of the liver with preservation of as much tissue as possible. We suggest that the laparoscopic approach could be safe and feasible in the treatment of patients with uncommon localization of hydatid disease.

Keywords – Echinococcosis, unusual, children, laparoscopic, Abdominal



Laparoscopic management of cysts mimicking hepatic cystic Echinococcosis in children (A case series)

Assia Haif *, Djelloul Achouri ²

^{1,2}Department of Pediatric Surgery / hospital university center of Setif, Algeria

^{1,2}Laboratory of Applied Pediatric Surgery, Ferhat Abbas University Setif 1, Algeria

**(a.haif@univ-setif.dz) Email of the corresponding author*

Abstract – Laparoscopic treatment of liver echinococcosis cyst has become popular. In parallel the diagnostic approach of cystic liver lesions is based on the number of lesions and their distribution. The etiologies of cystic masses in children are different and the role of imaging in their characterization and pre-therapeutic evaluation is essential. The main differential diagnoses of hepatic hydatid cysts can be discovered intraoperatively by minimally invasive surgery.

The clinical data contained seven patients with hepatic cystic who underwent laparoscopic surgery in the Department of Pediatric Surgery, SETIF, Algeria from 2015 to 2022.

Of reported seven patients, five are male and the remaining two are female. Abdominal pain was the most frequent clinical signs. Biological parameters were within normal limits, Abdominal ultrasound, practiced in all cases, completed by abdominal computed tomography (CT) showed a hydatid cystic. For all patients, surgical procedures were performed under laparoscopy. Total cystectomy in four patients, fenestration or subtotal cystectomy in three patients respectively. A histopathological feature confirmed the nature of the cysts. During the follow-up period, there was no recurrence.

Laparoscopic liver surgery is a safe and effective approach, it is an alternative to conventional surgery and a reproducible method. Laparoscopic surgery approach should follow the same principals with those of open surgery. This surgical technique can rectify the diagnosis of hydatid cyst, the histopathological examination confirms the nature of the cystic lesion.

Keywords – Children, Cyst, Echinococcosis, Laparoscopic, Liver



Sustainable Waste Management Strategies for Mitigating Pollution and Promoting a Circular Economy

Abderrahime BHAR^{1*}, Salma SAKINI² and Saloua JEMJAMI³

^{1,2,3} Laboratory of Applied Chemistry and Environment, Science and Technology Faculty (FSTS) of Settat, P.O. Box: 577 Road Casa, Settat, Morocco

*abdo.bhaar@gmail.com

Abstract – This study addresses the escalating challenge of waste generation due to population growth and changing consumption patterns. The research explores various leachate treatment methods, including reverse osmosis and biological basins, highlighting their role in minimizing pollution from landfills. However, it emphasizes the need for further development in waste volume reduction before discharge.

A promising approach for biogas recovery through leachate evaporation using biogas combustion heat is presented. This method, particularly beneficial in regions with high-moisture waste, increases leachate temperature and evaporation rates, contributing to a reduction in landfill volume. The case study of Meknes, Morocco, exemplifies this strategy's effectiveness.

The study emphasizes the importance of capturing biogas, a significant source of methane found in landfills. The Meknes case highlights successful biogas capture and treatment, resulting in a reduction of over 11,700 tons of CO₂ equivalent emissions. Additionally, the potential for on-site electricity generation and thermal energy utilization for neighboring industries is explored. Implementing a circular economy model for waste management is crucial. The case of Meknes controlled landfill exemplifies waste sorting, composting, and energy recovery initiatives. The controlled landfill unique leachate treatment process, utilizing a combination of membranes and bioreactors, allows for treated leachate reuse for irrigation and facility operations.

In conclusion This research promotes a multi-pronged approach to sustainable waste management, encompassing waste volume reduction, advanced leachate treatment, biogas capture and valorization, and embracing a circular economy model. The successful case study of Meknes landfill demonstrates the potential for significant pollution reduction and resource recovery through innovative waste management strategies.

Keywords – Waste; leachate; biogas; valorization; mitigation.



Decoding the Facebook Equation: Unraveling the Impact on Students' Psychological Well-being and Educational Journey

Ghulam Safdar^{*1}, Mahnoor Bibi²

¹Assistant Professor, Department of Media & Communication Studies, Rawalpindi Women University, Rawalpindi, Pakistan.

²MPhil Scholar, Department of Media & Communication Studies, Rawalpindi Women University, Rawalpindi, Pakistan.

*(safdarsting@gmail.com)

Abstract – The purpose of the study was to investigate how Facebook affects students' psychological well-being and in their educational purpose. The study calls for a understanding of Facebook's role in the lives of students. The study was conducted under the light of “*Cultivation Theory*” and research design of the study complied using quantitative. The survey approach was employed in the study to gather information from (N=100) respondents using purposive sample technique by including males and females of Rawalpindi and Islamabad, Pakistan. The self-design questionnaire based on Likert scale (close-ended questions) including demographic information, general questions about Facebook use and related to the psychological well-being and educational purpose. The questionnaire was distributed among the target public through Facebook, WhatsApp, Instagram added in the lists of the researchers and the data collection time period was 1 week. Findings of the study was shown both positive and negative impacts. Positive aspects include enhanced communication and social connection, while negatives may involve increased distraction, reduced academic performance, and potential mental health concerns. With the positive and negative outcomes, the study concluded that excessive use may lead to distraction, decreased academic performance, and potential mental health issues. Striking a balance between social media engagement and academic responsibilities is crucial for students.

Keywords – Facebook, Mental Health, Education, Psychological Well-being, Students



PLASTIC PERIL: THREATS TO CAMEL BIODIVERSITY AND ECOSYSTEMS IN THE ARABIAN PENINSULA

DJEDDI Khaled*, HOUSSOU Hind², OUCHTATI Dounia³, DJEDDOU Benabid Amira³⁴

¹ Institute of Agronomic and Veterinary Sciences/ Laboratory of Sciences and Techniques of the Living Souk Ahras University, Algeria

² Institute of Agronomic and Veterinary Sciences/ Laboratory of Sciences and Techniques of the Living Souk Ahras University, Algeria

³ Institute of Agronomic and Veterinary Sciences/ Laboratory of Sciences and Techniques of the Living Souk Ahras University, Algeria

⁴ Institute of Agronomic and Veterinary Sciences/ Laboratory of Sciences and Techniques of the Living Souk Ahras University, Algeria

*(k.djeddi@univ-soukahras.dz) Email of the corresponding author

Abstract – The ecological impacts of plastic pollution extend far and wide, affecting diverse ecosystems and wildlife populations globally, including camels in their habitats. Camels, as herbivores, are particularly susceptible to ingesting plastic waste while foraging, leading to severe health problems such as intestinal blockages, risk of sepsis, dehydration and malnutrition. In the United Arab Emirates (UAE) and across the Arabian Peninsula, research reveals a concerning pattern of camel mortality linked to the ingestion of anthropogenic waste, particularly plastic bags and rope, resulting in the formation of polybezoars within their digestive systems. Since 2008, over 300 camels have been observed post-mortem with polybezoars in the UAE alone, highlighting the severity of the issue. Plastic contamination not only directly affects camel health but also disrupts their natural habitats, contaminating water sources and hindering vegetation growth. These disruptions have long-term consequences, affecting camel population dynamics and genetic diversity. In conclusion, plastic pollution poses a serious threat to camel biodiversity by directly harming individual camels, degrading their habitats, impacting population dynamics, and presenting conservation challenges. Sustainable solutions and collaborative efforts are needed to combat plastic pollution and protect the unique biodiversity of camels for future generations.

Keywords – Biodiversity, Camel, Plastic, pollution, Polybezoars.



A Pilot Study of Post-Partum Hemorrhage's Risk in Sétif, Algeria

Romya Bourouba ^{*1}, Safia Djellid ¹, Hadil Sid ¹ and Farida Djabi ²

¹ Department of Biology and Animal Physiology, Faculty of Nature and Life Sciences, University Ferhat Abbas Sétif 1, Sétif, Algeria.

² Department of Medicine, Faculty of Medical Sciences, University Ferhat Abbas Sétif 1, Sétif, Algeria.

*(brromyla@yahoo.fr)

Abstract – Postpartum hemorrhage (PPH) is a severe public health problem and the leading cause of maternal death worldwide that needs to be treated right away. The main objective of this case-control study is to identify some risk factors and hematological parameters in women with PPH. This study was carried out on 25 PPH cases compared to 160 normal-delivery women recruited from Sétif and Aïn Azel hospitals. Epidemiological data were collected through a completed survey. The frequency of postpartum hemorrhage was 13,51% out of total births. The average age of women affected by hemorrhage was 32.28 ± 5.48 years, and they were hypotensive. The related risk factors were ruptured cervix (32%), placental remnants (24%), placental adhesion (8%), and placental retention (4%). In addition, the investigation of hematological parameters showed a significant decreased Platelet count ($107.44 \pm 36.31 \times 10^9$ /L) and decreased prothrombin rate (0.817 ± 0.207). If bleeding continues for a prolonged period or with large clots after delivery, there may be a risk to the mother's life. Therefore, it is important to have availability of urgent effective medical care to deal with it, reduce risks, and ensure the mother's safety and well-being.

Keywords – Postpartum hemorrhage, risk factors, hematological parameters, Sétif.



Essential oil of *Mentha spicata* leaves from Algeria : chemical composition and antibacterial activity

Khiari Mohame^{*1,2}, Kechrid Zine²

¹Department of Biology, Faculty of Sciences, University of Souk ahras, 41000, Algeria.

²Applied Biochemistry and Microbiology Laboratory, Department of Biochemistry, Faculty of Sciences, University of Annaba, 23000, Algeria.

^{*}(mohamedkhiari@yahoo.fr)

Abstract –The antibacterial activity of plant extracts has been a subject of interest in both traditional medicine and modern research. The use of medicinal plants today is the form of the most widespread medicine worldwide, where utilizing aromatic plants as interesting source of phytochemicals constitute one of the largest scientific concerns. The extract of *Mentha spicata* has several biological uses such as antioxidants, anti-inflammations, antispasmodics and antimicrobials. Thus this work was focused to investigate chemical composition and antibacterial activity of essential oil from *M. spicata* leaves (MSEO) collected from Djelfa regions, Algeria. MSEO was extracted from the leaves using clevenger apparatus then carried out by GC/MS technique. Furthermore, the antibacterial activity of MSEO was valuated with three bacterial strains: *Staphylococcus aureus*, *Proteus mirabilis* and *Klibesiella pneumoniae*. Commercial antibiotics were used as references. The phytochemical analysis indicated that leaf of *M. spicata* comprising anthocyanins, leucoanthocyanins, flavonoids, tanins and terpenoids. The obtained results showed also that MSEO is rich in Carvone and Limonene; and exhibited a potent antibacterial effect compared to controls. The present research demonstrated the antibacterial activities of *M. spicata* essential oil against three strains of bacteria. It was suggested that *M. spicata* essential oil could be use as an antibacterial agent.

Keywords –*Mentha spicata*; essential oil; chemical composition; antibacterial activity; Djelfa



Some Features of the Color-singlet Quark-Gluon Plasma with the Contribution of Different Terms to the Density of States Used in the Projection Method

Amal Ait El Djoudi*¹ and Hayet Sahi^{1,2}

¹Laboratoire de Physique des Particules et Physique Statistique, Ecole Normale Supérieure-Kouba, Algiers, Algeria

² Physics Department, University M'hammed Bougara Boumerdes , Algeria

*(amal.aiteldjoudi@g.ens-kouba.dz) Email of the corresponding author

Abstract –In the present work, we investigate some features of the hadronic matter undergoing a deconfinement phase transition to the state of matter called Quark-Gluon Plasma (QGP), at high temperature and zero baryonic density. We account for the requirement that the QGP may be in a color-singlet state by projecting its partition function on the color-singlet SU(3) representation using the projection method. The quarks and gluons density of states used in the calculation is that given by the Multiple Reflection Expansion (MRE) approximation, where the surface and curvature terms are considered additionally to the volume term. We study the influence of considering the curvature term, as well as the surface one on the obtained QGP color-singlet partition functions, and on some related physical quantities characterizing the QGP, evolving with temperature at zero chemical potential. We compare with our previous results obtained within the contribution of the volume term only in the density of states.

Keywords –Confinement; Quark-Gluon Plasma; Projection method; Partition function; zero chemical potential.



Effect of fibers on the mechanical strength and durability performance

Ibrahim HichamBakhti¹, Omar Taleb¹, Ahmed Soufiane Benosman^{2,3}, Assia Djerbi ⁴

¹ Department of Civil Engineering, Faculty of Technology, University of Tlemcen,EOLE ,PB 230, Tlemcen, Algeria

²Ecole Supérieure en Sciences Appliquées de Tlemcen, ESSA-Tlemcen,BP 165 RP, Bel Horizon, Tlemcen 13000, Algeria

³Department of Civil Engineering, LABMAT Laboratory, ENPO Maurice Audin, BP. 1523, El Mnaouer, Oran 31000, Algeria
⁴Univ Gustave Eiffel, Cerema, UMR MCD, F- 77454 Marne-la-Vallée, France

¹bakhti.ih13@gmail.com

Abstract –A concrete structure may encounter various environmental conditions during its service life. The durability of such a structure is defined by its ability to withstand these conditions without requiring significant repairs or rehabilitation. In recent years, in-depth studies have focused on the mechanical properties of fiber-reinforced concrete.

Evaporation of surface water from concrete contributes to the development of shrinkage cracks in the paste, leading to the generation of tensile stresses as the concrete undergoes the initial strengthening process. The cracks initiated by the contraction of the paste appear in the first hours following the pouring of the concrete into the formwork, preceding the achievement of its initial strength. These cracks establish critical points in the vulnerability of the concrete to the penetration of harmful substances, which can lead to corrosion and damage to the concrete material, thereby decreasing performance, maintenance effectiveness, service life, the aesthetics and resistance of concrete structures.

This study specifically investigates the impact of varying amounts of fibers on concrete properties, evaluating parameters such as compressive and tensile strength.

The use of fibers has been explored to improve both the mechanical performance and durability of mortar. Various properties including compressive, tensile and flexural strength, water absorption and chloride resistance were examined.

Keywords – Compression, Tensile, Water Absorption, Chloride Resistance, Cracks.



Machine Learning-Based Classification of Partial Discharge Signals for Power Asset Condition Monitoring

Mohammed Ayoub Sahnoune*, Boubakeur ZEGNINI ¹ and Tahar SEGHIER ¹

¹ Laboratoire d'étude et de développement des matériaux semiconducteurs et diélectriques, Amar Telidji University of Laghouat, Algeria

*(ma.sahnoune@lagh-univ.dz) Email of the corresponding author

Abstract – Partial discharge (PD) is a widespread phenomenon in high-voltage electrical equipment that can lead to insulation degradation and eventual failure. Accurate detection and classification of PD signals is crucial for the condition monitoring and predictive maintenance of these critical assets. This study presents a machine learning-based approach for the automated classification of PD signals measured in the field. The method employs a combination of time-domain, frequency-domain, and time-frequency domain feature extraction techniques to capture the complex signatures of different PD sources. Several supervised learning algorithms, including support vector machines, random forests, and convolutional neural networks, were evaluated and optimized for PD signal classification. The proposed approach was validated using a comprehensive experimental dataset comprising different PD defect types under varying operating conditions. The results demonstrate classification accuracies exceeding 90%, outperforming conventional PD analysis techniques. The developed framework provides a robust and scalable solution for PD diagnosis, enabling improved asset health monitoring and more reliable maintenance planning in high-voltage power systems.

Keywords – Partial discharge (PD), Condition monitoring, Signal classification, Machine learning, Power system assets



Machine Learning Techniques for Software Fault Prediction: A Distinctive Systematic Literature Review

Aleena Rafique, Sania Bhatti

Department of Software Engineering, Mehran University of Engineering & Technology, Jamshoro, Pakistan
Department of Software Engineering, Mehran University of Engineering & Technology, Jamshoro, Pakistan

aleenarafiq2018@gmail.com

Abstract – Software faults significantly undermine the quality and reliability of software systems, emphasizing the critical need for effective fault prediction and mitigation strategies during the software development lifecycle. This study conducts a comprehensive survey of 291 research papers sourced from Google Scholar and IEEE databases, employing rigorous search criteria to investigate the efficacy of machine learning techniques for software fault prediction. Our analysis focuses on methodologies aimed at anticipating software faults through machine learning approaches, with evaluation metrics including precision, accuracy, and the F1 score. While our findings highlight promising avenues for fault prediction, we acknowledge limitations such as potential bias from search criteria and database selection. To advance future research in this domain, we recommend broadening survey criteria and integrating additional databases to ensure a more comprehensive analysis of available literature.

Keywords – Software Fault Prediction, data mining techniques, feature selection, f-measure, reliability assurance.



Use of fly ash in the manufacture of ceramics to improve several properties

BAALI Saad^{*1}, MAZA Mekki², RAHMOUNI zine EL Abidine³ and TEBBAL Nadia⁴

¹Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

²Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

³Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

⁴Civil engineering Department / Geomaterials Development Laboratory, University of M'sila, Algeria

^{*}(saad.baali@univ-msila.dz) Email of the corresponding author

Abstract - Fly ash is a fine residue that is produced during the combustion of coal in coal-fired power plants. They are transported by combustion gases and collected from the chimneys of power plants. Fly ash is mainly composed of fine particles of silica, alumina, iron and other metal oxides.

The use of fly ash in the manufacture of ceramics can improve several properties, such as mechanical strength (they can act as reinforcing agents in ceramics, thus increasing their resistance to bending, compression), strength wear and abrasion (making them more durable in environments subject to heavy wear, this makes them suitable for applications such as flooring, refractory bricks), durability (The addition of ash Fly ash can help control the density and porosity of ceramics), thermal shock resistance and dimensional stability (Fly ash often contains refractory components such as silica and alumina, which improve the thermal stability of ceramics). By judiciously incorporating fly ash into ceramic manufacturing, it is possible to obtain more efficient, durable and economical materials for a variety of industrial and technical applications.

Keywords: fly ash, construction materials, ceramics, durability.



The influence of stiffeners on the behaviour of the T-stub in bolted joints

BOUBEKRI Amel¹, RAS Abdelouahab² and BOUMECHRA Nadir ³

¹Civil engineering, Abou Bekr Belkaid University, Tlemcen, Algeria

² Civil engineering, Abou Bekr Belkaid University, Tlemcen, Algeria

³ Civil engineering, Abou Bekr Belkaid University, Tlemcen, Algeria

¹ boubekriamel40@gmail.com

Abstract – The present work focuses on the numerical study by finite element analysis of the behavior of the tension zone of a steel assembly of the column-beam type with end plate connections under cyclic loading. This zone is represented by a T-stub with two rows of bolts, used as the analysis model in the European code dedicated to the calculations of steel structures (Eurocode 3-1.8). However, the presence of stiffeners in the tension zone of bolted steel connections can completely alter their behavior, which is not taken into consideration in the aforementioned standard.

To evaluate the mechanical performance of the T-stub with two rows of bolts under monotonic loading, a numerical model by volumetric finite elements with 8 nodes was developed and compared with experimental results in terms of Force-Displacement curves. Subsequently, this model was used as a basis to develop a T-stub model with stiffeners. This allowed estimating the contribution of the stiffeners of the protruding end plate connection on their behavior under cyclic loading.

Keywords – Steel joints – T-stub – cyclic behaviour – stiffeners.



Proving the Existence of Solutions for Fractional-Integro Differential Equations with Deformable Derivative in Banach Spaces

Bellabes Zineb^{1*}, Naima Boussekine¹

¹department Of Mathematics, A.Z University Of Relizane, Algeria

*(Zineb.Bellabes@Univ-Relizane.Dz)

Abstract – In this paper, we delve into the study of a specific mathematical tool known as the deformable derivative, which has garnered attention for its unique properties and diverse applications across various fields. Our investigation focuses on uncovering additional properties of the deformable derivative, which we then utilize to analyze the existence of solutions to a particular type of integro-differential equation. The integro-differential equation we consider is represented as:

$D^{\alpha} y(t) = a(t) + h(t, y(t)) \int_0^t K(t, s) g(s, y(\phi(s))) ds, \quad t \in [0, 1],$ with the initial condition $y(0) = c$, where

$D^{\alpha} y(t)$ denotes the deformable derivative of y with $0 < \alpha < 1$. This equation encompasses a wide range of phenomena, rendering it a subject of significant interest across various scientific disciplines. To establish the existence of solutions to this equation, we employ Krasnoselskii's fixed-point theorem. This theorem provides a powerful mathematical tool for proving the existence of solutions under certain conditions, which we carefully examine and satisfy within our framework. Moreover, we complement our theoretical analysis with an illustrative example to showcase the practical implications of our findings. This example serves to elucidate the concepts discussed and provide a concrete application of our theoretical results

Keywords – Deformable derivative, Krasnoselskii's fixed point theorem, Integro-differential equations, mild solution



Effect of using demolition waste in concrete formulation

Ben Ammar Ben Khadda*

¹*Civil and Hydraulic Engineering Department, University of Biskra, Algeria*

**(b.benammar@univ-biskra.dz)*

Abstract – The recycling of waste materials from demolition of constructions and structures (waste generated by crushing quarries, marble waste and brick waste) in the form of powder in concrete and is of global concern. The aim of this study is to study the effect of cement replacement in percentage of marble and brick powder on the physic-mechanical properties of concrete. The results indicate an improvement in the properties of concrete using marble powder. The results showed that the compressive strength of concrete increases with the content of 10 % of marble powder.

Keywords – Concrete, waste, marble powder, brick powder, compressive strength.



Preparation and Characterization of Cementitious Matrix Composites Reinforced with Malva (Malva sylvestris) Fibers

YALAOUI Kattia*, ZEMBOUAI Idris ² KACI Mustapha³

¹ Génie des Procédés / Université Abderrahmane Mira, Bejaia, Algeria

² Génie des Procédés / Université Abderrahmane Mira, Bejaia, Algeria

³ Génie des Procédés / Université Abderrahmane Mira, Bejaia, Algeria

*kattia.yalaoui@univ-bejaia.dz

Abstract - The construction sector is facing major environmental challenges due to the depletion of fossil resources. To meet these challenges, researchers have turned to the use of plant fibers in cement[1], offering an environmentally-friendly alternative to conventional materials reinforced with synthetic fibers. Plant fibers are attractive because of their biodegradability, abundance, renewability and low cost, making it possible to create cost-effective, environmentally-friendly building materials [2].

Poor adhesion between hydrophilic plant fibers and the cementitious matrix limits their use as reinforcing agents in cementitious composites. To solve this problem, methods such as chemical modification of the fibers have been employed to create interactions with the cementitious matrix[3]. Studies have shown that chemical treatment of plant fibers enhances their adhesion to the cementitious matrix, resulting in improved mechanical performance of the materials. This study aims to exploit a new variety of fiber extracted from the stems of Malva (Malva sylvestris), an annual or biennial herbaceous plant in the Malvaceae family[4], native to Europe, Asia and northern Africa. This widespread plant offers an interesting opportunity in the search for more sustainable and ecological building materials. The chemical composition[4] of Malva fibers has been identified and characterized by FTIR and XRD.

For the manufacture of cementitious matrix composites, Malva fibers, both treated (NaOH 5%) and untreated, are added to the matrix at different concentrations (0.5%, 1%, 1.5%, 2%). The results of the study showed that alkaline treatment of Malva fibers significantly improved the mechanical and physical properties of the composites, compared with untreated fibers.

Keywords: Malva, Cementitious, Composites, Chemical modifications, Mechanical properties.



Investigating the Impact of CaCO₃ Mineral Filler Incorporation on Mechanical Properties of HDPE Semi-Crystalline Matrix

Hadda BENACEUR*, Fatma Zohra BENABID ²

^{1, 2} LMPMP, Department of Process Engineering, Faculty of Technology, Ferhat ABBAS Sétif 1 University, Algeria

*haddabenaceur53@gmail.com

Abstract – Research and development in the field of polymers has evolved over the years, leading to the emergence of composite materials. These composites involve incorporating particles into a polymer matrix, thereby improving product properties and expanding the applications of plastics. In this study, we aimed to develop and characterize HDPE/CaCO₃ composites. CaCO₃, a mineral filler, was added at different rates (5%, 10%, and 20%) using the smelting process. The samples were analyzed using FTIR and flow index measurements. The results show that the loading significantly influences the modification and improvement of the properties of HDPE. The characteristic bands of HDPE are still present in IR analysis, but a new peak attributed to CaCO₃ appears. The intensity of an HDPE strip decreases with increasing filler loading, indicating interactions between filler and polymer. Additionally, the incorporation of CaCO₃ results in a slight decrease in the melt flow index and an increase in the viscosity of HDPE. This can be explained by the formation of aggregates at higher loading rates, which hinders material flow and increases viscosity.

Keywords – composites, HDPE, mineral filler, modification, improvement.



The Computational Studies of a Novel Benzimidazole Derivative, its Crystal Structure, and Hirshfeld Surface Analysis

Khaled Drim^{*}, Youcef Megrouss², Mokhtaria Drissi³

¹Department of chemistry / Laboratory of Plant Chemistry - Water - Energy, HASSIBA BENBOUALI University of Chlef, Algeria.

²Department of chemistry / Laboratory of Technology and Solid Properties (LTPS), HASSIBA BENBOUALI University of Chlef, Algeria.

³Department of chemistry / Laboratory of Technology and Solid Properties (LTPS), IBN KHALDOUN University of Tiaret, Algeria

^{*}[\(k.drim@univ-chlef.dz\)](mailto:k.drim@univ-chlef.dz) Khaled Drim

Abstract – The purpose of this work is the characterization of a new compound of one of the benzimidazole derivatives. This organic material was characterized by using two complementary approaches: the experimental approach using physicochemical analysis techniques and the theoretical approach using quantum mechanical methods. First, theoretical calculations using density functional theory (DFT), implemented under Gaussian16 software, were carried out to model the molecular system composing our benzimidazole compound. Subsequently, physicochemical analyses by X-ray diffraction on single crystal (XRD) and spectroscopic measurements are carried out in order to identify the structure as well as the properties of our studied material. The crystallographic structure of our organic material was determined by direct methods and refined by the least squares method under the WINGX software. We exploited a high-resolution X-ray diffraction of a single crystal for the determination of the geometric parameters (interatomic distances, valence angles, dihedral angles). Intramolecular charge transfer, electric dipole moment μ and the HOMO-LUMO energy levels were calculated using the (DFT/B3LYP) method with 6–311G (d, p) basis set. The Hirshfeld surface technique is a distinct approach that allows one to comprehend the intermolecular connections and extract insights on the patterns in the arrangement of crystals. Finally, all of the theoretical results obtained are in perfect agreement with the experimental ones. This document presents the formatting instructions for the Proceedings of the International Conference on Scientific and Innovative Studies.

Keywords – Crystal, Benzimidazole, Hirshfeld, X-ray diffraction, DFT.



Optimizing Poultry Feeds: Influence of Processing Techniques on Soybean Protein Utilization and Amino Acid Availability

Muhammad Umair Asghar ^{*,1}, Qurat Ul Ain Sajid ¹, Martyna Wilk ¹ and Mariusz Korczyński ¹

¹Department of Animal Nutrition and Feed Science, Faculty of Biology and Animal Science, Wrocław University of Environmental and Life Sciences, Poland

* e-mail: muhammad.asghar@upwr.edu.pl

Abstract – In poultry nutrition, the digestibility and bioavailability of amino acids from soybean-based diets play a crucial role in optimizing growth performance and feed efficiency. Soybeans are a primary source of protein in poultry feeds, providing essential amino acids necessary for muscle development, feather growth, and overall health. However, the inherent anti-nutritional factors (ANFs) in soybeans, such as trypsin inhibitors, lectins, and phytic acid, can impair protein digestion and hinder amino acid utilization in poultry. This review explores the effect of various processing methods on soybean digestibility and the bioavailability of amino acids in poultry diets. Processing techniques, including heat treatment, enzymatic hydrolysis, fermentation, and extrusion, aim to mitigate the ANFs present in soybeans while enhancing nutrient digestibility and utilization by poultry. Heat treatment, such as steam and roasting, can deactivate trypsin inhibitors and lectins, improving protein digestibility in soybeans. Fermentation by beneficial microorganisms can reduce phytic acid levels and improve mineral and amino acid bioavailability in soybean-based diets. Extrusion processing involves high temperature and pressure, effectively inactivating ANFs and increasing the digestibility of soy proteins. Understanding the impact of processing methods on soybean digestibility and amino acid bioavailability is essential for formulating poultry diets that maximize nutrient utilization and promote optimal growth performance. By selecting appropriate processing techniques, poultry producers can mitigate the adverse effects of ANFs in soybeans and improve the nutritional quality of feeds, ultimately enhancing the health and productivity of their flock.

Keywords – Poultry nutrition, soybean processing, amino acid digestibility, anti-nutritional factors, feed efficiency, growth performance



Unlocking Equine Nutrition: Enhancing Mineral Absorption through Microbial Phytase Supplementation

Qurat Ul Ain Sajid^{1,*}, Muhammad Umair Asghar¹ and Mariusz Korczyński¹

¹Department of Animal Nutrition and Feed Science, Faculty of Biology and Animal Science, Wrocław University of Environmental and Life Sciences, Poland

*(qurat.ul.ain.sajid@upwr.edu.pl) Email of the corresponding author

Abstract – In equine nutrition, the effect of phytic acid on mineral absorption is a critical aspect that influences health and performance. This review article explores intricate relationship between phytic acid and mineral absorption in horses, emphasizing the significant impact of phytic acid on equine nutrition. Phytic acid, prevalent in plant-based feeds incorporated into equine diets, serves as the primary storage form of phosphorus. However, its presence also poses challenges due to its inhibitory effect on the absorption of essential minerals such as calcium, magnesium, zinc, and iron. This inhibition occurs as phytic acid forms insoluble complexes with these minerals in the digestive tract, reducing their bioavailability for uptake by the horse's body. The consequences of impaired mineral absorption can be profound, impacting various physiological functions crucial for equine health. Calcium and phosphorus are essential for skeletal development and bone strength, while magnesium plays a key role in muscle function and metabolism. To address the challenge of phytic acid inhibition, recent research has focused on the use of exogenous microbial Phytase supplementation in equine diets. Microbial phytase is an enzyme capable of degrading phytic acid, thus releasing bound minerals and improving their availability for absorption. By enhancing mineral digestibility, microbial phytase supplementation offers the potential to optimize equine nutrition and support better health outcomes for horses. This review discusses the mechanisms of phytic acid inhibition, the importance of mineral absorption in equines, and the benefits of supplementing equine diets with microbial Phytase to optimize nutrient utilization and promote health outcomes in horses.

Keywords – Equine nutrition, phytic acid, mineral absorption, microbial Phytase, digestive health, nutrient bioavailability.



Analgesic and anti-lithiasic effects of Moroccan Citrus aurantium flowers and fruit aqueous extracts

L. El Yazouli¹, A. Baslam¹, J. Laadraoui¹, M. Ait laaradia¹, R. Aboufatima², A. Kibbou¹, M.A. El Amiri¹, S. Moubtakir¹ and A. Chait^{1*}

¹ Laboratory of Pharmacology, Neurobiology, Anthropobiology and Environment Department of Biology. Faculty of Sciences Semlalia. University Cadi Ayyad. BP 2390-40080. Marrakech, Morocco.

² Laboratory of genie biologic, Faculty of Sciences and Techniques, Sultan Moulay Slimane University, Beni Mellal, Morocco.

Abstract – Citrus aurantium holds widespread use in Moroccan society as a remedy for various diseases, owing to its significant pharmacological properties. The objective of this study was to investigate the antioxidant activity, analgesic potential, and anti-lithiasis properties of the aqueous extracts of both the flowers and juice of Citrus aurantium. To achieve this, we employed various techniques: antioxidant activity was assessed using 2, 2-Diphenyl-1-picrylhydrazyl (DPPH) and reducing power assays (FRAP), while the antinociceptive effect of the plant was evaluated through writhing and hotplate tests on mice. The urolithiasis model was induced in rats through the administration of ethylene glycol and ammonium chloride, and assessments were made based on variations in body weight, kidney histopathology, and biochemical analysis using urea and creatinine.

Our findings demonstrated significant antioxidant activity in both extracts (flowers and juice) of Citrus aurantium, represented by DPPH values of 5.42 ± 0.20 and 2.87 ± 0.42 , and FRAP values of 4.23 ± 0.05 and 1.67 ± 0.13 in flowers and juice, respectively. The obtained results also showed that Citrus aurantium extracts significantly reduced the number of writhes and increased the latency time in response to a thermal stimulus compared to the control group ($p \leq 0.001$). Both extracts (flowers and juice) of Citrus aurantium exhibited a protective effect on the kidneys by preventing the formation of oxalo-calcium crystals. The histopathological study of the kidneys in the groups treated with Citrus aurantium revealed a marked reduction in abnormalities observed in rats treated with Ethylene Glycol. Additionally, urea and creatinine values were reduced compared to the control group ($p \leq 0.001$), signifying an important anti-urolithiasic activity. Overall, Citrus aurantium demonstrated potent antioxidant, analgesic and antilithic activities, suggesting its potential as a valuable natural source of bioactive compounds with various therapeutic applications.

Keywords – Citrus aurantium; Uro-lithiasis; Histopathological examination; Biochemical parameters; Analgesic effect.



Performance of Training Data Size for Face Recognition

Fella Berrimi^{1*}

¹ LRSD Laboratory, Department of Computer Science
Faculty of Sciences, University of Ferhat Abbas Setif 1, Algeria

*(fella.berimi@univ-setif.dz) Email of the corresponding author

Abstract – Facial identification is one of the most challenging tasks for machine recognition. For humans, it is an important social skill. Humans can recognize faces even under different variations and alterations such as makeup, hairstyle, aging, and other physical effects. However, for machine recognition of faces, it remains a difficult stage. This field is of interest due to its potential applications in areas such as plastic surgery, security and personal identification systems, teleconferencing, and sign language. Developing a computational model for face recognition is quite challenging, as faces are complex, multidimensional, and convey meaningful visual stimuli.

Face identification involves encoding the most relevant information in the training faces that will best distinguish them from one another. Subsequently, the input face is compared with these faces to select the one with the best match.

In this paper, we investigate the impact of the training data size on recognition performance. The main concept of the proposed system is to represent each face class by a unique face key. This is because each class contains different images of the same person, and while these images may have very similar representations, the class can be effectively represented by a single face key. Based on our experiments with the ORL database faces, the proposed method results in a smaller training data set, which leads to reduced processing time (38 seconds), but also a decrease in recognition performance (0.94%) compared to the original methods (eigenfaces).

Keywords – Machine learning, training data size, face recognition



Adsorption of Rhodamine-B from aqueous solution by ZnS nanoparticles loaded on activated carbon

Mourad Termoul^{1*}, Salima Attouti¹, Mokhtar Benzekri Benallou¹, Zohra Mekibes¹, Nouredine Benderdouche¹, Benaouda Bestani¹

¹Laboratory of SEA2M, Faculty of Sciences and Technology, University Abdelhamid Ibn Badis-Mostaganem, Mostaganem, 27000, Algeria.

*termoulmourad80@yahoo.fr

Abstract – The present study focused on the adsorption of Rhodamine B by nanoparticle-functionalized activated carbon (ZnS-NP-AC). Activated carbon loaded with zinc sulfide nanoparticles was synthesized by a simple and cost-efficient method. This new material was characterized by FT-IR, SEM and XRD and BET analysis. The aim of this study was to evaluate the suitability and effectiveness of activated carbon loaded with zinc sulfide nanoparticles (ZnS-NP-AC) for Rhodamine B adsorption. The adsorption study was carried out in batch mode and the parameters influencing adsorption, including pH, contact time and adsorbent dose, were optimized. In general, adsorption process parameters have a significant effect on percent removal. Adsorption was studied using three (03) isotherm models, Langmuir, Freundlich and Temkin. The equilibrium data for Rhodamine B removal follow strongly the Langmuir monolayer adsorption with a high adsorption capacity in a short time. The highest R^2 values were obtained with the Langmuir model (0.98). The adsorption capacity, q_m , was $230 \text{ mg} \cdot \text{g}^{-1}$ at an initial pH of 6 and an equilibration time of 120 min at a temperature of 20°C and an initial dye concentration of $50\text{-}500 \text{ mg} \cdot \text{L}^{-1}$. The effect of temperature shows that adsorption is endothermic with $\Delta H = 6.205 \text{ kJ} \cdot \text{mol}^{-1}$, $\Delta S = 47.6 \text{ J} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$ and a decrease in Gibbs energy ($\Delta G = -8.56$ to $-28.63 \text{ kJ} \cdot \text{mol}^{-1}$). The kinetic study showed that RhB dye adsorption follows the pseudo-second-order kinetic model and intraparticle diffusion. In addition, the adsorption mechanism of RhB-ZnS-NP-AC is proposed, comprising three steps. The synthesized adsorbent is compared with other adsorbents in the literature, and indicates that the ZnS-NP-AC nanocomposite used in this study showed better results at high adsorption capacity compared with commercial activated carbon. The regeneration and reuse study suggests that the nano-adsorbent can be reused several times for purification/adsorption.

Keywords – ZnS nanoparticles, activated carbon, Rhodamine-B, Adsorption.



Analysis of the Impact of the Incorporation of Biomass Waste on the Thermal Conductivity of Plaster-Based Construction Materials

Adel Baghdad Zougar *¹, Ahmed Soufiane Benosman^{1,2}, Farid Brahim Houti^{1,3}, Abdelmadjid Lasledj¹, Imane Fatima Zohra Mesli³, Abdelhak Badache^{1,4}

¹ Département de Génie Civil, Laboratoire LABMAT, ENPO Maurice Audin, Algérie

² Ecole Supérieure en Sciences Appliquées, ESSAT, Temcen, Algérie

³ Département de Génie Civil, Laboratoire EOLE, Université Abou Bekr Belkaid, Algérie

⁴ Département de Génie Civil, Université Ahmed Zabana de Rélizane, Rélizane, Algérie

*baghdadzougaradel31@gmail.com

Abstract – This study examines the effects of incorporating waste biomass and fibers into gypsum-based construction materials on their thermal conductivity. So as the construction industry seeks more environmentally friendly solutions, the use of recycled materials and natural fibers appears to be a promising alternative. Thermal conductivity, essential for the energy efficiency of buildings, plays a crucial role in heat conservation and thermal comfort.

The addition of biomass waste such as rice straw and paper waste, as well as fibers such as cork, linen, wheat straw, agave and date fiber, could potentially modify this characteristic, thus offering possibilities for improving the thermal insulation of buildings. This study aims to provide practical recommendations to construction professionals and decision-makers by precisely assessing the impact of these modifications on the thermal conductivity of plaster -based construction materials.

The conclusions of this analysis could guide the formulation of concrete recommendations, thus contributing to the design of more ecological and sustainable buildings. In summary, this bibliographic research explores the potential implications of the integration of biomass and fiber waste on the thermal conductivity of plaster-based construction materials, thus offering innovative perspectives for reducing the energy consumption of buildings and their environmental impact.

Keywords – Biomass waste, Thermal conductivity, Plaster, Thermal insulation, Ecological construction, Energy efficiency



ASSESSING THE ROLE OF THE GREEN ECONOMY IN SUSTAINABLE DEVELOPMENT: A META-ANALYSIS FROM A GLOBAL PERSPECTIVE

Liridona Nikqi*, Duresa Kilaj²

¹Faculty of Business, University "Haxhi Zeka" Peja, Republic of Kosovo

²Faculty of Business, University "Haxhi Zeka", Peja, Kosovo. Ph.D. (cand) in Economics at South East European University, Tetovo, North Macedonia

*(liridonanikqi20@gmail.com)

Abstract – The purpose of this study is to identify and analyze the impact of the green economy on sustainable development at the global level. The aim is to understand how green economy practices and policies can contribute to economic growth, improved social welfare and environmental conservation. For the realization of this research, we used secondary data and the paper was designed in the form of a meta-analysis. For which we are based on reviews and research done in various sources of knowledge, information and relevant data, including papers, econometric models, detailed analysis, etc., carried out by various authors. The findings obtained from this research show that there is a positive relationship between the green economy (GE) and Gross Domestic Product (GDP) in some contexts, as well as a negative relationship between the green economy and poverty rates in developing countries. This shows that green economy practices and policies can influence economic growth and reduce unemployment, while having a positive impact on poverty reduction in developed countries. The results of this research can serve as a guide for policy makers, businesses, and international organizations in the design and implementation of policies and strategies for sustainable development. The green economy analysis provides recommendations for concrete measures to improve economic efficiency, reduce pollution and use natural resources, and promote innovative technologies and practices for sustainable development.

Keywords – Green economy, environmental impact, economic growth, social welfare.



Numerical implementation of a penalty method for nonlinear complementarity problem

Kebaili Zahira

University Setif1 UFAS / Algeria

Zehira.kebaili@univ.setif.dz

Abstract – A penalty method for solving nonlinear complementarity problems (NCPs) is proposed. By using this approach, the problem (NCPs) is approximated by a sequence of nonlinear equations containing a penalty term.. The merit of this method shows that the solution of the sequence of nonlinear equations converges to that of the NCP (NCPs) when the penalty parameter tends to positive infinity under mild assumptions. An algorithm is constructed and numerical examples indicate the feasibility of our method.

Keywords – Numerical implementation, nonlinear complementarity problem



Characterization and Evaluation of Recycled Textile Waste as Adsorbent for Wastewater Treatment

SAKINI Salma^{1*}, AZOULAY Karima¹, BHAR Abderrahime¹, MOUFTI Ahmed ¹ and JEMJAMI Saloua¹

¹ Laboratory of Applied Chemistry and Environment. Faculty of Science and Technology of SETTAT. Hassan I University. Morocco

* s.sakini@uhp.ac.ma

Abstract – Effluents from the textile industry constitute a major source of environmental pollution due to complex contaminants, notably organic pollutants. Effective treatment of these effluents is crucial for the protection of aquatic ecosystems and human health. Among various technologies, adsorption has emerged as a promising approach to remove pollutants from wastewater. This study explores the potential of using recycled textile waste from a Moroccan industry to treat textile effluent. The objective of this study is the identification and representation of the main chemical and structural characteristics of the adsorbent through surface chemical analysis (Fourier-transform infrared spectroscopy (FTIR), fluorescence spectroscopy, and X-ray diffraction (XRD)), as well as morphological analysis (scanning electron microscopy (SEM) and determination of the specific surface area using the BET method). Also, the study focuses on the effectiveness of the waste in removing Methylene Bleu (MB) taken as models of pollutants from aqueous solution

The findings indicate the coexistence of hydroxides and carbon chains within a diverse and heterogeneous morphology. The BET surface area is measured at 22.9740 m²/g, while the cumulative surface area of pores, determined through the BJH adsorption method, spans widths between 17.000 Å and 3,000.000 Å, yielding a value of 14.1028 m²/g. X-ray diffraction analysis confirms the presence of an amorphous structure.

The adsorption efficiency of the material was evaluated using aqueous solutions of cationic dyes (MB). The results demonstrate promising performance with a discoloration rate reaching 98% under the experimental conditions studied. This study highlights the potential of recycled textile waste as a cost-effective alternative to expensive industrial adsorbents and natural materials typically used for pollutant adsorption.

Keywords – Waste Valorization, Physicochemical Characterization, Adsorption, Cationic Dyes, Textile Wastewater Treatment.



Comparative Classification of Rice Varieties Grown in Turkey with CNN Architectures

Kıyas Kayaalp^{*1}

¹Computer Engineering, Technology Faculty, Isparta University of Applied Sciences, Turkey

^{*}(kiyaskayaalp@isparta.edu.tr)

Abstract – Rice is one of the most important staple food sources in the world and the productivity of rice crops needs to be increased to meet the needs of an ever-increasing population. The literature discusses the use of image classification techniques in rice cultivation and how these techniques contribute in areas such as analyzing the health of rice crops, detecting diseases and estimating crop yields. In rice cultivation, CNNs have been used for various applications such as detecting pests and diseases, estimating rice yield, and classifying rice varieties.

Arborio, Basmati, İpsala, Jasmine and Karacadağ rice are the most commonly grown in Turkey. A dataset consisting of 15000 images obtained from each of these rices in a controlled environment and 75000 images in total was used. CNN-based, VGG-16, ResNet50, Inception-v3, MobileNet and Xception models were tested for image classification. In the study, 70% of the dataset was allocated for training the models, while 15% was allocated for validation and the remaining 15% for testing. The accuracy values obtained from the test data of the models are as follows; ResNet50 80.34%, VGG16 84.69%, Inception-v3 98.28%, MobileNet 96.89%, Xception 95.05% and CNN 97.60%. The best classification rate was obtained with İpsala rice in all models except Inception-v3.

Rice, which is the most produced and consumed in the world, can be distinguished from each other by features such as texture, color and shape. Thanks to these features, it is possible to classify the seeds and evaluate their quality. As a result, in this study, the importance of image classification techniques for the analysis and classification of rice crops and the performance of CNN-based models are discussed comparatively. It is thought that these studies can make important contributions to the agricultural industry, such as improving the quality of rice production and providing early diagnosis of diseases.

Keywords – Rice varieties, Classification, CNN, Nondestructive classification, Deep learning



PUF-Based Lightweight Authentication Framework for RFID Systems

¹ Shabbir Ahmad, ¹ Fazal Muhammad, ¹ Hamza Ali, ¹ Muhammad Ismail, ² Sana Ullah

¹Department of Electrical Engineering, University of Engineering & Technology, Mardan, KPK (Pakistan)

²Department of Software Engineering, Faculty of Engineering, University of Malakand, Dir Lower 18800, Pakistan

engr.shabbirkhan7@gmail.com, fazal.muhammad@uetmardan.edu.pk, engr.hamarwat@gmail.com,
m.ismail012018@gmail.com, sana.ullahse@uom.edu.pk

Abstract – Radio Frequency Identification (RFID) systems have become an essential technology for Internet of Things (IoT) applications that require dependable and secure item identification. However, the widespread adoption of RFID systems is hindered by security and privacy concerns. While cryptographic techniques that incorporate Physically Unclonable Functions (PUFs) have been introduced to enhance tamper-resistant features, they remain vulnerable to attacks, particularly desynchronization. This research proposes an improved and privacy-preserving authentication protocol that is specifically designed for RFID systems. The proposed protocol capitalizes on an ideal PUF environment to effectively combat desynchronization attacks, ensuring robust security measures. A comprehensive performance evaluation was conducted to demonstrate the effectiveness, security, and practicality of the proposed solutions. The proposed solutions are particularly well-suited for resource-constrained RFID tags. The outcomes of this research contribute to mitigating the security and privacy challenges in RFID systems, thereby facilitating their secure and reliable integration across diverse IoT applications. This research has significant academic and practical implications for researchers and practitioners working in the field of IoT security and privacy, and can pave the way for the successful deployment of RFID systems in a wide range of applications.

Keywords – RFID Systems, Internet of Things, physically unclonable functions, desynchronization attacks, authentication protocol, Privacy



Advances in Synthesis, Characterization, and Industrial Applications of Phenol Formaldehyde Resins

Buket Erzen¹, Mukaddes Karataş¹, Şermin Deniz¹ and Ercan Aydoğmuş^{1*}

Firat University, Department of Chemical Engineering, 23119, Elazığ, Türkiye

*(ercanaydogmus@firat.edu.tr) Email of the corresponding author

Abstract – In this research, it has been determined that the ratio of phenol to formaldehyde is an important factor in determining the properties of the resulting resin. In experimental studies, molar ratios ranging from 1/1.5, 1/2, 1/2.5 and 1/3 to phenol/formaldehyde are used. With higher phenol ratios, resins with better thermal stability and chemical resistance are obtained. However, considering production costs, optimization studies have been carried out according to the final product's desired characteristics and the application's special requirements. It appears that the amounts of phenol and formaldehyde used in the production process depend on the phenol/formaldehyde ratio selected according to the desired properties. In the reaction between phenol and formaldehyde to form phenol formaldehyde resin, high temperature, and pressure can be preferred to facilitate the reaction and achieve higher yield. In this study, physical interactions and chemical reactions are monitored at atmospheric pressure at temperatures of 60 °C, 75 °C, 90 °C, and 105 °C. Higher temperatures and pressures generally promote faster reaction rates but can also lead to increased energy consumption and equipment costs. Catalysts are often used to accelerate the reaction between phenol and formaldehyde and increase the efficiency of resin production. Acidic catalysts such as sulfuric acid or hydrochloric acid are frequently used to catalyze the chemical reaction between phenol and formaldehyde. Besides, basic catalysts such as sodium hydroxide or sodium carbonate are also preferred in alkaline phenol formaldehyde resin production processes. This research monitors physical and chemical interactions using a sodium hydroxide catalyst. The manufacturing process of phenol-formaldehyde resins is often optimized through experimental trials and statistical analysis to maximize resin yield, quality, and cost-effectiveness. In this research, experimental design is used to optimize process parameters such as temperature, pressure, catalyst concentration, and reaction time, according to response surface methodology (RSM). Among the optimization goals, it is preferred to maximize resin yield, obtain the desired properties (viscosity, curing time, mechanical durability), and minimize production costs. The production of phenol-formaldehyde resins depends on the ratio of phenol to formaldehyde, amounts of reactants, reaction conditions, catalyst selection, and optimization parameters. According to these factors, efficient and cost-effective resin production is envisaged in industrial applications.

Keywords – Phenol Formaldehyde, Reaction Parameters, Resin Properties, Characterization, Optimization



Advancing Crop Protection through Convolutional Neural Networks: A Multi-Plant Disease Classification Study

Essa Khan¹ and Gulistan Raja²

¹ Department of Electrical Engineering, University of Engineering and Technology, Taxila, 47080, Pakistan

² Department of Electrical Engineering, University of Engineering and Technology, Taxila, 47080, Pakistan

¹(essa.khan@students.uettaxila.edu.pk)

²(gulistan.raja@uettaxila.edu.pk)

Abstract – Agriculture plays a pivotal role in sustaining human life by serving as the primary source of food, yet its vulnerability to diseases poses a significant threat to global food security. The effective management of these diseases is paramount to ensuring crop productivity and safeguarding the stability of food systems worldwide. This study introduces a novel approach based on convolutional neural networks (CNNs), leveraging the robust DenseNet169 architecture, for disease classification across four distinct plant species: potato (*Solanum tuberosum*), tomato (*Solanum lycopersicum*), grapes (*Vitis vinifera*), and apple (*Malus domestica*). The classification task encompasses identifying late blight, early blight, and healthy states for potato and tomato; black rot, leaf blight, and healthy states for grapes; and apple scab, black rot, and healthy states for apple. Remarkably, the proposed model demonstrates exceptional performance, achieving an impressive accuracy rate of 99.5% on the classification task. This significant outcome underscores the transformative potential of deep learning techniques in revolutionizing precision agriculture practices. By automating disease diagnosis through advanced machine learning algorithms, such as CNNs, this study pioneers a paradigm shift in agricultural management. The implementation of automated disease detection enables timely interventions, mitigating crop losses and enhancing overall agricultural sustainability. This research not only showcases the efficacy of deep learning methodologies but also underscores their instrumental role in addressing critical challenges faced by the agricultural sector.

Keywords – Plant disease classifications, Convolutional Neural Networks (CNNs), DenseNet169, Precision Agriculture, Food security, Disease Diagnosis.



Mechanical Properties of Glass Fiber/Epoxy Composites Effects of Number of Plies, Fiber Contents, and Angle-Ply Layers

Ali Ari*

¹ Department of Weapon Industry Technician, Vocational School of Higher Education, Ostim Technical University, 06374, Ankara, Turkey,

*(ali.ari@ostimteknik.edu.tr) Email of the corresponding author

Abstract – In this study, fabrics in different orientations were produced using glass fibers. 16 different composite samples were produced with 16 different fabrics with different orientations and weights. The same type of glass fiber fabric samples was prepared in several layers, weighing approximately 4000 g. Composite plates (30x30 mm) were prepared by impregnating polyester resin (PR) (CE 92 N8, Cam Elyaf A.Ş., TÜRKİYE) using the hand-laying technique after each layer. Polyester resin (CE 92 N8, 98.7%), catalyst (cobalt, 0.3%), and hardener (methyl ethyl ketone peroxide, 1%) were mixed and applied to the preforms under atmospheric conditions. After the resin was applied to the fabric by hand-laying method, a 24-hour curing process was applied. After curing, the curing process was kept in the 90-degree curing oven for 3 hours. After the curing process, the weight of the composite plates was approximately 14000 g. After the post-curing process, the samples were cut in a 45-degree direction to prepare tensile and compression test samples. The results obtained are as follows: The composite sample consisting of 6 layers of fabric with 0/45/90/-45⁰ glass fiber orientation has the highest tensile strength at 19 MPa. In terms of compressive strength, the 8-layer sample of fabrics with a 45/90/-45 orientation has the highest compressive strength at 16 MPa. By making different orientations in the fiber directions, the tensile strength was increased from 170 MPa to 419 MPa, and similarly, the compressive strength was increased from 152 MPa to 316 MPa.

Keywords – Glass-fiber, Composite, Angle-ply layers, Mechanical properties, Fabrics



Threat to the Survival of Camels in Algeria: Impact of Ecosystem Pollution and Abortive Pathologies (Toxoplasmosis and Brucellosis)

DJEDDOU BENABID Amira^{1*}, HOUSSOU H.¹, DJEDDI K.¹ and OUACHTATI D.¹

¹Institut of Agronomic and Veterinary Sciences, Souk Ahras University, Algeria;
Laboratory of Sciences and Techniques of the living, Souk Ahras University, Algeria.

*corresponding author: a.djeddoubenabid@univ-soukahras.dz

Abstract – The camel is the animal best adapted to desert climates and challenging survival conditions, thanks to its ability to efficiently utilize limited nutritional resources and transform them into edible products. Despite their resistance to harsh environmental conditions, the survival of camels is threatened by numerous factors, primarily those related to ecosystem pollution and abortive pathologies. Air pollution from emissions resulting from industrial activities can be the cause of serious respiratory problems in camels. Additionally, water and soil pollution from toxic substances can lead to insufficient drinking and feeding, resulting in weight loss in adult subjects, the death of young subjects under one year and poor resistance to pathogens. Camel births become rare, and abortions occur more frequently. Brucellosis (*B.abortus*, *B.melitensis*) and Toxoplasmosis (*T.gondii*) are major abortive conditions affecting camels worldwide. Besides their medical and economic implications, they pose a barrier hindering the progress and development of camels. These pathologies can be associated with significant reproductive losses in camels particularly abortions. An epidemiological study on brucellosis was conducted from 2011 to 2012 in three provinces in southern Algeria, involving 537 serum samples collected from male and female camels. Using two tests, the Rose Bengal Plate Test and the Complement Fixation Test. The high number of positive samples (8%) was from the Biskra region. Also, a cross-sectional study was conducted from October 2015 to August 2018 to assess the seroprevalence of Toxoplasma gondii infection in 320 camels in southeastern Algeria using the ELISA technique. The prevalence of the infection was found to be 15% in camels.

Keywords – Abortion, Camel, Brucellosis, Toxoplasmosis, Pollution.



Model Predictive Current Control of the Shunt Active Power Filter based on Renewable Energy System

Ahmed ELOTTTRI^{*}, Lakhdar MAZOUZ², Abdellah KOUZOU¹, Ali TETA¹ and Nihel Bouthaina SALLAI³

¹Applied Automation and Industrial Diagnostics Laboratory (LAADI), Faculty of Science and Technology University of Djelfa, Algeria.

²Renewable Energy Systems Applications Laboratory (LASER), Faculty of Science and Technology, Ziane Achour University, Djelfa 17000, Algeria.

³ Faculty of Science and Technology University of Sidi Bel Abbès, Algeria

^{*}(ahmed.elottri@univ-djelfa.dz) Email of the corresponding author

Abstract – This study presents a novel approach to enhance the performance of shunt active power filters (SAPFs) within renewable energy systems through Model Predictive Current Control (MPCC). With the increasing integration of renewable energy sources into power systems, the demand for effective power quality improvement techniques has surged. Shunt active power filters play a crucial role in mitigating harmonics and reactive power issues caused by nonlinear loads and fluctuating renewable energy sources. However, conventional control strategies often face challenges in achieving optimal performance under varying operating conditions. In response, this study proposes an MPCC-based control strategy tailored to the dynamics of SAPFs within renewable energy systems. The proposed approach leverages the predictive capabilities of model predictive control to anticipate future system behavior and optimize current control actions accordingly. Through simulations and experimental validations, the effectiveness of the MPCC-based SAPF is demonstrated in terms of harmonic mitigation, reactive power compensation, and dynamic response under different operating conditions. The results highlight the superior performance and robustness of the proposed control strategy compared to conventional techniques, offering a promising solution for enhancing the power quality of renewable energy systems while ensuring efficient utilization of resources.

Keywords – MPCC, SAPF, PV system.



Google Earth Engine (GEE) Platformu Kullanılarak Arazi Örtüsü Değişimi Analizi

Fatma Çiğdem Han^{1*}, Hüseyin Kemaldere²

¹Geomatik Mühendisliği ABD / Fen Bilimleri Enstitüsü, Zonguldak Bülent Ecevit Üniversitesi, Türkiye

²Harita Mühendisliği Bölümü / Mühendislik Fakültesi, Zonguldak Bülent Ecevit Üniversitesi, Türkiye

*(hanfatmacigdem@gmail.com)

Özet – İnsanoğlunun yayılmacı ve işgalci yapısının bir sonucu olarak ortaya çıkan ormansızlaşma ve yapılaşma gibi değişimler günümüzün en önemli sorunları arasında yer almaktadır. Ülkemizde de görülen bu durum, bu özet bildiride, Sakarya ilinin Karasu ve Kaynarca ilçe sınırları içerisinde yer alan Acarlar Longozu özelinde ele alınmıştır. Bu çalışmada; Acarlar Longozu’nun 2010-2023 yılları arasındaki arazi örtüsü değişiminin analizi, Google Earth Engine (GEE) platformunda JavaScript kodlaması kullanılarak Landsat verileri ile gerçekleştirilmiştir. GEE’de ön işlemler sonrasında 2010 yılından 2020 yılına kadar her 5 yıllık periyotta, 2020 yılından 2023 yılına kadar ise 3 yıllık periyotta görüntü elde edilmiştir. Arazi sınıfları için eğitim ve test verileri oluşturularak makine öğrenme modellerinden biri olan rastgele orman algoritması uygulanmış ve sınıflandırma görüntüleri belirlenmiştir. Sınıflandırma görüntülerinde oluşturulan karışıklık matrisi üzerinden doğruluk analizleri kod editöründe yazılarak genel doğruluk, üretici doğruluğu, kullanıcı doğruluğu ve kappa değerlerine ulaşılmıştır. Her bir verinin sınıflandırma görüntüleri elde edildikten sonra 2010-2015, 2015-2020 ve 2020-2023 veri setlerinde orman sınıfı baz alınarak arazi örtüsü değişimi görüntüleri ve hesabının analizi yapılmıştır. Sonrasında arazi örtüsü değişim haritaları üretilerek veri setleri arasında karşılaştırma yapılmış olup bulguların analizi sunulmuştur. Arazi örtüsü değişim haritalarında önemli ölçüde değişim gösteren sınıflar belirtilmiştir. 2010-2015 veri seti için orman sınıfından yerleşim sınıfına 65 ha, ekin sınıfına 560 ha ve yeşil alan sınıfına 383 ha alan değişimi tespit edilmiştir. 2015-2020 veri seti için ormandan yerleşim alanına 61 ha, ekin sınıfına 235 ha değişim olurken yeşil alan sınıfına 417 ha değişim görülmüştür. 2020-2023 veri setinde ise ormandan yerleşim alanına 12 ha, ekin sınıfına 272 ha değişim olup yeşil alan sınıfına ise 307 ha değişim tespit edilmiştir.

Anahtar Kelimeler – Acarlar Longozu Sulak Alanı, Arazi Örtüsü Değişimi, Landsat, Google Earth Engine, Rastgele Orman Algoritması



LED-induced photocatalytic removal of the AG25 dye using calcium nanoferrites synthesised by green chemistry

Salima Daoui^{1*}, Fatiha Abdelmalek¹ Batoul Benidriss¹ Sabri Khalifa² Rachida Bendahman¹ Ahmed Addou¹

¹ Department of Process Engineering / Laboratory of Environmental Science and Valorization, University Abdelhamid Ibn Badis Mostaganem, Algeria

² Department of Materials and Components / Faculty of Physics, USTHB, Algiers, Algeria

*salima.daoui.etu@univ-mosta.dz

Abstract –CaFe₂O₄ nanoparticles, synthesised by green chemistry using sol-gel auto-combustion, from carob leaves were used for the removal of AG dye in aqueous solution. Characterisation was carried out by X-ray powder diffraction, scanning electron microscopy coupled to energy dispersive X-ray spectroscopy, Fourier transform infrared spectroscopy and Raman spectroscopy.

The characterization techniques based on X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), and Raman spectroscopy showed that the NPs crystallize in the spinel cubic system Fd-3m (o_h^7). The application of these nanoparticles for the photocatalytic degradation of AG25 was studied by varying the following parameters: catalyst quantity (0.1; 0.2; 0.5; 0.75 and 1 g/L), dye concentration ((37.5, 75 and 100 μ M)), pH (2; 6.7 and 8), and exposure time to visible light (5; 10; 20; 30; 45 and 60 min). Optimization of several parameters based on experimental design, such as catalyst quantity, dye concentration, solution pH, and exposure time, was conducted. The results showed that at pH 2, with a catalyst quantity of 0.25 g/L, dye concentration of 37.5 μ M under a 100W LED visible light bulb, and within 20 minutes, 97% of AG25 was degraded.

Keywords – Green synthesis, CaFe₂O₄ nanoparticles, characterization; experimental design, AG25 dye, visible light LED



Electrochemical studies of the dichlorométhane (DCM) as a corrosion inhibitor for mild steel in 1M HCl

H. EL-IDRISSI^{1,2,*}, A. ELABBADI^{1,2}, Fatima Ez-zahra AABASSI¹, K. Benjelloun², H. Atlas³, M. Sfaira², T. Saffaj¹

¹Laboratory of Application Organic Chemistry, Faculty of Sciences and Techniques, Sidi Mohamed Ben Abdellah University, USMBA, BP 2626 route d'Immouzer-Fez, Morocco;

²Laboratory of Materials Engineering, Modeling and Environment, LIMME, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, USMBA, PO. Box 1796 Atlas Fez, Morocco;

³Laboratory of innovative materials and biotechnology of natural resources, Faculty of Sciences Meknes, Moulay Ismail University, Morocco.

* hafsa.elidrissi2@usmba.ac.ma

Abstract – The investigation delved into assessing the efficacy of the dichlorométhane (DCM) as a corrosion inhibitor for mild steel in a 1.0 M hydrochloric acid solution at 298 K. Electrochemical impedance spectroscopy (EIS) and potentiodynamic polarization were employed to scrutinize the corrosion inhibition performance. The results demonstrated a commendable level of agreement between the two techniques, affirming their mutual reliability. The electrochemical interface was effectively modeled using a sophisticated electrical circuit ($R_s + CPE_{dl} / (R_{ct} + CPE_f / R_f)$), where Constant Phase Elements (CPE) represented as $CPE(\alpha, Q)$ introduced a singular time constant. This modeling provided a comprehensive representation of the electrochemical behavior, revealing the predominant influence of charge transfer control in the corrosion process of mild steel. This observation, attesting to the prevailing influence of charge transfer control in the mild steel corrosion process, was effectively delineated in both Nyquist and Bode diagrams. These diagrams thoughtfully considered frequency dependence, providing a robust rationale for the judicious selection of the electrical circuit. Consequently, these compounds exhibit notable anticorrosive properties, serving effectively as corrosion inhibitors in acidic environments. This suggests their potential application in industries where mild steel is exposed to such conditions, contributing to improved durability. These results pave the way for practical corrosion control strategies, highlighting the promising role of the compounds in mitigating corrosion and extending the service life of mild steel components.

Keywords –Mild steel, corrosion inhibitor, dichlorométhane (DCM), corrosion inhibition performance, Electrochemical studies.



Prediction of the inhibition efficiency of quinoxaline derivatives against mild steel corrosion in hydrochloric acid 1M using interpretable machine-learning methods

H. EL-IDRISSI^{1,2,*}, M. Sfaira², T. Saffaj¹

¹Laboratory of Application Organic Chemistry, Faculty of Sciences and Techniques, Sidi Mohamed Ben Abdellah University, USMBA, BP 2626 route d'Immouzer-Fez, Morocco;

²Laboratory of Materials Engineering, Modeling and Environment, LIMME, Faculty of Sciences Dhar El Mahraz, Sidi Mohamed Ben Abdellah University, USMBA, PO. Box 1796 Atlas Fez, Morocco;

* hafsa.elidrissi2@usmba.ac.ma

Abstract – In the realm of materials science, the relevance of machine learning has surged. This is especially evident in the prediction of material properties, driven by the rapid convergence of artificial intelligence and big data. This research paper seeks to delve into the identification of the most effective machine learning method for predicting the corrosion inhibition efficiency (CIE) values of specific heterocyclic compounds. In pursuit of this objective, a quantitative structure-activity relationship (QSAR) model is employed, leveraging a machine learning (ML) approach to forecast the inhibition efficiency values of newly synthesized compounds. The study utilizes a quantitative structure-activity relationship (QSAR) model based on a machine learning (ML) approach to forecast the inhibition efficiency values of novel compounds. The investigation reveals the Gradient Boosting Regressor (GBR) model as the most proficient predictive model, supported by a superior coefficient of determination (R²) and a lower root mean square error (RMSE) compared to alternative models. This suggests that the GBR model demonstrates a heightened accuracy and precision in predicting corrosion inhibition efficiency. This technological advancement provides a valuable tool for predicting the corrosion inhibition properties of newly designed compounds before they undergo experimental synthesis.

Keywords – Machine Learning, Prediction, inhibition efficiency, hydrochloric acid 1M, quinoxaline derivatives,



Removal of the AG25 dye using a hybrid process combining cobalt nano-ferrite/UV/plasma-activated water treatment

Fatima.Z. Benkrifa¹, Fatiha Abdelmalek¹, Khalifa Sabri^{1,2}, El Batoul Benidris¹, Chaimaa Hachemi¹, Ahmed Addou^{1*}

¹Laboratory of Environmental Science and Valorization, Department of Process Engineering, University Abdelhamid Ibn Badis Mostaganem, BP188,27000 Mostaganem, Algeria.

²Department of Materials and Components, Faculty of Physics, USTHB, Algiers, Algeria.

*(ahmed.addou@univ-mosta.dz) Email of the corresponding author

Abstract - In this study, cobalt nano-ferrite CoFe_2O_4 (NFCo) was synthesized using the sol gel self-combustion method. Structural (XRD, FTIR and Raman), morphological (SEM with EDAX) and magnetic (VSM) properties were characterized. X-ray diffraction (XRD) analysis revealed the formation of a pure phase with a mixed spinel structure and an average crystallite size of 60 nm. Scanning electron microscope (SEM) observations revealed the existence of particle agglomerates and a porous morphology. FTIR analysis identified characteristic M-O vibrational peaks at the tetrahedral and octahedral sites, with the Raman study confirming the spinel structure. Magnetic analysis revealed that the coercive field increased resistance to demagnetization. Various oxidation processes, including UV, plasma-activated water (PAW) by gliding arc discharge (GAD), NFCo, as well hybrid UV, PAW/UV, NFCo/UV, PAW/NFCo and PAW/NFCo/UV systems, were used to assess the removal of the AG25 dye. Removal processes, mechanisms and photocatalysis were studied. Optimal conditions for efficient removal were identified for all processes studies.

The results indicated that NFCo nanoparticles did not exhibit a significant ability to decolorize AG25. Similarly, the use of UV alone, as well the combination of NFCo and UV, did not lead to any significant degradation of the dye. In contrast, the PAW/NFCo and PAW/NFCo/UV hybrid systems exhibited high photocatalytic activity, reaching an efficiency of 99.1%. this study highlights the potential of NFCo nanoparticles combined with plasma-activated water and UV as magnetic nano-photocatalysts to replace conventional heterogenous catalysts in water treatment, offering new prospects for more efficient methods of degrading organic pollutants in water treatment applications.

Keywords- PAW, CoFe_2O_4 , POA, AG25, photocatalysis



Determination of Natural Frequency Vibration of Crankshaft from Internal Combustion Engine with Finite Element Analysis

Ilyas Bozkurt*, Murat Horoz²

*Department of Mechanical Engineering, Architecture and Engineering Faculty, Mus Alparslan University, 49250 Mus, Turkey

²Nuclear Energy and Energy Systems Department Student, Architecture and Engineering Faculty, Mus Alparslan University, 49250 Mus, Turkey

*(i.bozkurt@alparslan.edu.tr)

Abstract – In this study, the vibration behavior of the crankshaft used in internal combustion engines was analyzed with a finite element program. The study was carried out with the *LS DYNA* finite element program. The shaft model created with *Solidworks* was then made into a finite element analysis by entering the material and boundary conditions in the *Lst-prepost* program. The effect of the type of material used in the study and its mechanical properties on the results of the calculations was analyzed. Steel and Aluminum Al6061-T6 were used as shaft materials. *Eigenvalue* material card was used for 10 different frequency modes. The maximum error for two different materials was determined to 25.2%. Therefore, it has been determined that the type of material used is an effective parameter on vibration. The results presented here are intended to shed light on future studies on crankshaft geometry changes.

Keywords – Internal combustion engines, crankshaft, vibration analysis, finite element method, LS DYNA



Determination of Frequency Vibration of Crankshaft with Different Mesh Structure with *LS DYNA* Finite Element Program

Ilyas Bozkurt

Department of Mechanical Engineering, Architecture and Engineering Faculty, Mus Alparslan University, 49250 Mus, Turkey

(i.bozkurt@alparslan.edu.tr)

Abstract – In this study, the vibration behavior of the crankshaft used in internal combustion engines was analyzed with a finite element program. The study was carried out with the *LS DYNA* finite element program. The shaft model created with *Solidworks* was then converted to finite element analysis by entering the material and boundary conditions into the *Lst-prepost* program. The effect of the mesh size used in the study on the calculation results was analyzed. Steel were used as shaft materials. The eigenvalue material card was used for 10 different frequency modes. The maximum error for different mesh size was determined as 2.2%. Therefore, it has been determined that the size of mesh used is an effective parameter on vibration. The results presented here are intended to shed light on future studies on crankshaft geometry changes.

Keywords – Internal combustion engines, crankshaft, vibration analysis, finite element method, *LS DYNA*



Pfa of some CFAR processors in a non-centered Lévy-distributed clutter

Slimane Benmahmoud^{1,*}, Abdelhalim Rabehi², Fayssal Ouagueni³ and El-Hadi Meftah⁴

¹Department of Electronic Engineering, University of M'sila, M'sila 28000, Algeria

²Laboratory of Telecommunications and Smart Systems, University of Djelfa, PO Box 3117, Djelfa, Algeria

³Department of Electrical Engineering, University of M'sila, M'sila 28000, Algeria

⁴Department of Electronics, Faculty of Electrical Engineering, USTHB, Algiers, Algeria
*(slimane34a@gmail.com)

Abstract –This study delves into a comprehensive exploration of the performance characteristics exhibited by three distinct categories of constant false alarm rate (CFAR) processors when operating in environments characterized by homogeneous non-centered Lévy-distributed clutter. Specifically, we undertake an analysis wherein we consider a range of values for the clutter's location parameter (δ), allowing us to derive integral-form expressions for the probability of false alarm (P_{FA}) associated with the cell-averaging (CA), greatest-of (GO), and smallest-of (SO)-CFAR processors. Our findings reveal a significant dependence of P_{FA} on the parameter δ , highlighting the critical role played by clutter characteristics in CFAR processor performance. Additionally, we provide precise formulations for the probability density function (PDF) governing the sum, minimum, and maximum of two sums of independent and identically distributed (i.i.d) Lévy random variates. To validate the accuracy of our analytical results, we conduct Monte Carlo simulations, the outcomes of which demonstrate an enhancement in the P_{FA} for the processors under investigation as the clutter location parameter δ increases. These findings offer valuable insights into the behavior and effectiveness of CFAR processors in cluttered radar environments, thereby contributing to the advancement of radar signal processing theory and practice.

Keywords –Constant False Alarm Rate (CFAR), Homogeneous non-centered Lévy-distributed clutter, Probability of false alarm (P_{FA}), Monte Carlo simulations, Clutter location parameter (δ).



Optimization of Urea Formaldehyde Resin Production: Understanding Chemical Reaction Kinetics and Process Parameters

Mukaddes Karataş¹, Buket Erzen¹, Şermin Deniz¹ and Ercan Aydoğmuş^{1*}

¹Fırat University, Department of Chemical Engineering, 23119, Elazığ, Türkiye

^{*}(ercanaydogmus@firat.edu.tr) Email of the corresponding author

Abstract – The synthesis of urea-formaldehyde resins involves a condensation reaction between urea and formaldehyde, typically carried out in an aqueous solution. The urea/formaldehyde molar ratio is a very important factor affecting the properties of the resulting resin and these ratios vary between 1/1.2 and 1/3. Higher formaldehyde contents cause resins to have better water resistance, but also lead to increased brittleness of the polymer. The chemical reaction is catalyzed by acidic or basic conditions, and acidic catalysts such as sulfuric acid or hydrochloric acid are commonly used. This reaction proceeds by adding formaldehyde to the amine groups of urea, leading to the formation of methylene bridges between urea molecules. The reaction is exothermic and temperature plays a crucial role in controlling the rate and extent of resin formation. In this study, the chemical reaction takes place at temperatures between 70 °C and 90 °C. According to the results obtained, higher temperatures generally support faster chemical reaction rates. Additionally, experimental studies have been carried out at atmospheric pressure. Optimization of process parameters, including temperature, pressure, catalyst concentration, and reaction time, is often accomplished using experimental design methodologies to maximize resin yield and desired properties while minimizing production costs. This comprehensive evaluation of chemical reaction kinetics and process parameters has been performed. Urea is crucial for the efficient and cost-effective production of formaldehyde resins and has implications for a wide range of industrial applications.

Keywords – Urea Formaldehyde, Reaction Kinetics, Process Optimization, Production Parameters, Characterization



Experimental Study and Modeling of Gentian Violet Dye Adsorption in Batch and Dynamic Modes on Eggshell Bioadsorbent

Nawal FERROUDJ*, Chamech MEZGHICHE² and Salsabil MEHALLI³

¹Laboratory of Biotechnology, National Higher School of Biotechnology (ENSB), Algeria

²Laboratory of Biotechnology, National Higher School of Biotechnology (ENSB), Algeria

³Laboratory of Biotechnology, National Higher School of Biotechnology (ENSB), Algeria

*(Ferroudj.nawal@gmail.com) Email of the corresponding author

Abstract – This work is part of the valorization of natural waste. Our study focuses on the preparation and characterization of a bioadsorbent, specifically eggshell powder. The objective is to investigate the adsorption of the violet gentian dye (VG) in batch and dynamic modes. In this study, we optimized and modeled certain parameters that influence the adsorption process, such as contact time, solution pH, initial dye concentration, bioadsorbent quantity, temperature, and agitation's velocity.

The maximum adsorption efficiency of VG was achieved at an initial concentration of 10 mg/L, using a mass of 2g of bioadsorbent (eggshells), at room temperature, with a basic pH of 12, a contact time of 40 minutes, and an agitation speed of 300 rpm. The adsorption of VG was studied using Langmuir, Freundlich, and Temkin isotherm models, with the data showing better agreement with the Langmuir model. The adsorption reaction of violet gentian on eggshells is exothermic, indicating heat release.

A dynamic study was conducted using a fixed-bed column packed with eggshells. This allowed us to determine breakthrough parameters for a flow rate of 0.83 mL/min and an initial concentration of 10 mg/min. The results demonstrate that adsorption on a fixed-bed can be modeled using the Thomas model.

Based on the results obtained in this study, we can confirm that eggshells have a strong potential as a natural adsorbent (bioadsorbent) and can effectively replace several other adsorbents.

Keywords – Bioadsorbents, Dynamic adsorption, Violet gentian, Optimization, Modeling.



Molecular Insights into Asthma Pathogenesis

Abi-Ayad FZ.^{1,3*}, Abi-Ayad M.⁴, Benfettah K.⁵, Amrani Y.², and Senhadji R.¹

¹DPT of Biology, Faculty of Nature and Life Sciences, University of ORAN1 Ahmed Ben Bella. ORAN, Algeria.

²Department of Infection, Immunity & Inflammation, University of Leicester, School of Medicine. Leicester, United Kingdom.

³Department of Biology, Faculty of Nature and Life Sciences, University of Tlemcen, Algeria

⁴Department of Biology, Faculty of Sciences and Technology, University of Ain Temouchent, Algeria

⁵ Mohguen Hospital, Service of Pneumology, Mohguen, Oran, Algeria

Abstract – Asthma is characterized by chronic inflammation in the lungs, leading to structural changes known as airway remodeling, which includes alterations in epithelial integrity, increased mucus production, smooth muscle proliferation, and abnormal blood vessel formation. These changes contribute to airway obstruction, hyperresponsiveness, and fibrosis, worsening asthma severity and resistance to treatment. Key cytokines involved in asthma pathogenesis are Th2 cytokines, particularly IL-4, IL-5, and IL-13, which drive inflammation and structural changes in the airways. Mast cells, eosinophils, and other immune cells play crucial roles in perpetuating inflammation and remodeling. Non-Th2 asthma phenotypes, such as neutrophilic asthma, also contribute to airway inflammation and may have different treatment responses. Therapeutic approaches targeting Th2 cytokines and their receptors, including monoclonal antibodies, aim to mitigate asthma symptoms and prevent structural changes in the airways. These treatments show promise in managing asthma, particularly in subsets with eosinophilic inflammation. Overall, understanding the complex interplay between immune responses, cytokines, and structural alterations in asthma is essential for developing effective treatments.

Keywords – Airway Remodeling, Asthma, Cytokines, Immune cells, Inflammation.



SOCA-CFAR processor: its Pfa in an Erlang-distributed clutter

Slimane Benmahmoud^{1,*}, Abdelhalim Rabehi², Fayssal Ouagueni³, and El-Hadi Meftah⁴

¹Department of Electronic Engineering, University of M'sila, M'sila 28000, Algeria

² Laboratory of Telecommunications and Smart Systems, University of Djelfa, PO Box 3117, Djelfa, Algeria

³Department of Electrical Engineering, University of M'sila, M'sila 28000, Algeria

⁴ Department of Electronics, Faculty of Electrical Engineering, USTHB, Algiers, Algeria

*(slimane34a@gmail.com)

Abstract – In this study, we present a detailed analysis focusing on the derivation of a closed-form expression for the probability of false alarm (P_{FA}) pertaining to the smallest-of cell-averaging constant false alarm rate (SOCA-CFAR) processor. This analysis is conducted within the context of a homogeneous Erlang-distributed clutter environment. Notably, our derived expression reveals an intriguing finding, indicating that the P_{FA} remains independent of the rate parameter λ governing the Erlang clutter distribution. Additionally, as an intermediate step in our analysis, we provide precise formulations for the probability density function (PDF) governing both the sum and the minimum sum of independent and identically distributed (i.i.d) Erlang random variates. Furthermore, to validate the accuracy and robustness of our analytical results, we conduct numerical simulations, which consistently demonstrate an augmentation in the P_{FA} of the SOCA-CFAR processor with an increase in the shape parameter k of the Erlang clutter distribution. Importantly, the accuracy of our analytical findings is rigorously confirmed through Monte Carlo simulations, ensuring the reliability of the presented outcomes and their practical applicability in radar signal processing contexts.

Keywords –Constant False Alarm Rate (CFAR), Homogeneous non-centered Erlang-distributed clutter, Probability of false alarm (P_{FA}), Monte Carlo simulations, the rate parameter λ .



An Optimized Solar Photovoltaic-Powered Green Hydrogen System

Toufik Sebbagh*

¹Department of Mechanical Engineering, University of Skikda, Algeria

[*t.sebbagh@univ-skikda.dz](mailto:t.sebbagh@univ-skikda.dz)

Abstract – The energy sector faces a critical imperative to discover sustainable and eco-friendly energy sources, and hydrogen emerges as a promising candidate. This research paper centers on the modeling, analysis, and techno-economic assessment of an autonomous photovoltaic (PV) system. Specifically tailored to power industrial operations, this system concurrently produces green hydrogen through water electrolysis. The focal point is on leveraging renewable resources for hydrogen generation, notably for fueling hydrogen-based vehicles. The investigation, conducted in Skikda, Algeria, encompasses a case study involving thirty-two cars, each equipped with a 5 kg hydrogen storage tank. Employing an integrated methodology that blends modeling, simulation, and optimization techniques, the techno-economic scrutiny reveals that the proposed system offers a competitive, cost-efficient, and environmentally friendly solution, priced at 0.23 \$/kWh. The evaluated standalone PV system delivers around 24 GWh/year of electrical energy and yields 7584 kg/year of hydrogen. These findings underscore the potential of the proposed system to surmount challenges in the power sector. It offers a sustainable and effective solution for both electricity generation and hydrogen production, thereby contributing significantly to environmental preservation and energy sustainability. The integration of renewable energy sources and hydrogen production presents a promising avenue for addressing the pressing needs of the power sector while advancing towards a more sustainable energy future.

Keywords – Green hydrogen, Photovoltaics, Optimization, Energy Conversion, Techno-economic



Evaluation and study of some chemical characteristics of liquid waste from concrete factories

REBIZI Mohamed Nadjib

Organic Chemistry and Natural Substances Laboratory, Faculty of Exact Sciences and Computer Science, University of Djelfa, PO Box 3117, Djelfa 17000, Algeria.

(mn.rebizi@univ-djelfa.dz)

Abstract – The aim of this work is to examine the impact of industrial effluents resulting from wastewater generated by concrete factories on the environment. Our study allowed us to collect, analyze, and interpret data on discharges over a period of one year. In this work we evaluated the extent of environmental pollution, especially with heavy metals, by determining the concentrations of heavy metal elements in the liquid waste of the concrete production plants of the National Construction Company ‘Cosidar’ in Djelfa, where we monitored the following standards. Celsius temperature, pH, chemical demand for oxygen (DCO), and one of the most notable results obtained was pH=12.9, as the pH value exceeded national and international standards according to the World Health Organization. This is due to the large number of chemical additives in concrete production as well as the concentration of the following heavy metals: (Plomb, Cadmium, Chrome, Cobalt, Cuivre, Nickel, Zinc) exceed the reference values, which led to water pollution. This is due to the components of mineral origin and the materials used in preparing concrete.

Keywords – liquid waste; concrete factories; heavy metals; environment; industrial effluents.



Displacement Analysis of Soft Soils under Earthquake Effect

Ferhat Şahinkaya*

¹Civil Engineering Department, Yozgat Bozok University, Yozgat

*(ferhat.sahinkaya@yobu.edu.tr) Email of the corresponding author

Abstract – Soft soils, just like liquefiable soils, pose a major problem in the field of geotechnical engineering. Excessive displacements that occur due to soil-related problems are generally described as liquefaction. Especially in regions located on the earthquake zone, excessive settlements due to loss of bearing capacity in soft soils cause serious losses of life and property. In recent years, due to population growth, its use has become mandatory in areas with soft soil. For this reason, analyzing and examining the behavior of soft soils during earthquakes has become an important issue. In this study, a soft clay soil sample was analyzed under earthquake effect using Plaxis 2D, a finite element program. Acceleration time parameters of the earthquake that occurred in Izmir, Turkey on October 30, 2020 were used in dynamic analyses. Dynamic analyzes were carried out by applying the limit bearing capacity value (BC) obtained in the study as a distributed load on the soil at certain rates (25%, 50%, 75%, 100%). As a result of dynamic analysis, graphs were created with the displacement values taken from the midpoint of the foundation plate, and important information was obtained about the behavior of soft clay soils under earthquake effects. As a result, it has been shown through analysis that the excessive displacements that occur in the soil during the earthquake are not only due to liquefaction, but also pose a major problem in soft soils.

Keywords – Bearing capacity, Displacement, Soft soil, Earthquake effect, Finite elements.



The effect of using lightweight aggregates as a construction material in the development of mortar characteristics . An overview

Mohamed sadak Merrakchi ^{*}, Smain Benyamina ²

¹Department of Civil Engineering / Materials and Environment Laboratory (LME), Faculty of Technology, University Yahia Fares of Medea, Algeria

²Department of Technology /University of Khemis Miliana, Algeria

^{*}(merrakchi.medsadak@univ-medea.dz) Email of the corresponding author

Abstract –This work investigates the influence of incorporating lightweight aggregates as a construction material on the development of mortar characteristics. Lightweight aggregates offer potential advantages in terms of reducing the density of mortar while maintaining or improving its mechanical properties. The study evaluates how the use of lightweight aggregates affects key characteristics of mortar, such as compressive strength, density, porosity, and durability. By exploring this relationship, the research aims to provide insights into the feasibility and effectiveness of utilizing lightweight aggregates in mortar production, offering potential benefits for construction applications. It was found that most studies provided satisfactory results, particularly in terms of thermal insulation and energy saving. Results vary depending on the quality, density and composition of the lightweight aggregate.

Keywords – lightweight aggregates. Mortar. thermal insulation. energy saving. Durability.



GC/Cu/SiO₂ carbon paste electrode as a voltammetric uric acid sensor

Lydia Taguelmimt*, Dehbia Oukil², Laid Makhoulfi³ and Ouezna Hamouma⁴

¹ Process Engineering Department, University A-Mira, Algeria

² Faculty of Natural and Life Sciences, University A-Mira, Algeria

³ Process Engineering Department, University A-Mira, Algeria

⁴ Faculty of Exact Sciences, University A-Mira, Algeria

*taguelmimt.lydia@gmail.com

Abstract – This study reports on the development of a novel electrode based on carbon paste modified by copper supported on silica, aimed at evaluating its electrocatalytic activity for the oxidation of uric acid. The synthesis and characterization of this innovative material were carried out using various analytical techniques such as X-ray diffraction (XRD), scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). The electrochemical behavior of the modified electrode was investigated using cyclic voltammetry method. The results demonstrated that the newly developed electrode exhibited excellent catalytic activity towards uric acid oxidation compared to bare carbon paste electrodes. This work provides valuable insights into developing efficient catalysts for biomedical applications related to biosensing or clinical diagnosis involving uric acid detection in biological fluids.

Keywords – Electrode, Copper, Uric acid, Electrocatalysis, cyclic voltammetry



Study of the Thermodynamics of a Single-Effect Solar Absorption Refrigeration Machine

CHIKH Mohammed El-Amine^{*1}, BENRAMANE Mohammed ² and ALIANE Abdenour ³

^{*1, 2, 3} ETAP Laboratory, University of Tlemcen, Faculty of Technology, Department of Mechanics, BP230, 13000Tlemcen, Algeria.

^{*} chikhamine7@gmail.com

Abstract – Renewable energy-based air conditioning systems are gaining traction due to escalating heatwaves and the demand for summer comfort, especially in residential areas. Individual electric air conditioners contribute to electricity consumption peaks.

Solar energy, despite lower efficiency, aligns well with peak cooling demand. Absorption Refrigeration show promise amidst the evolving energy market.

The emergence of new absorption refrigeration machines offers a promising solution for cooling, thanks to a range of distinct benefits. These machines use more environmentally friendly refrigerants and harness free and clean heat sources, notably through solar heat integration. In our research, we aim to study the performance of a single-effect absorption system in a solar absorption refrigeration machine, with the goal of understanding how operating conditions can influence its performance.

Keywords – Include solar energy, Refrigeration, Absorption, Performance, COP.



Neural Network Application for predicting composite Insulator Flashover voltage under Contaminated conditions

Khaled Belhouchet^{1*}, Assam Zorig¹

¹ Department of Electrical Engineering, Faculty of Technology,
and Laboratory of Electrical Engineering (LGE), University of Mohammed Boudiaf, M'sila, Algeria.

* Corresponding author, e-mail: khaled.belhouchet@univ-msila.dz

Abstract – Increased focus on contaminated insulators at high voltage transmission lines has emerged due to their growing significance. This pollution may cause flashover voltage, potentially resulting in service interruptions and negatively impacting the power system's dependability. The occurrence of flashovers in power transmission line insulators poses a significant risk to the efficient functioning of power systems. This study aims to address the issue of predicting flashovers in composite insulators employed in power transmission lines. It achieves this by utilizing a neural network technique. The present research examines the utilization of Artificial Neural Networks (ANN) to forecast the flashover characteristics of composite insulators influenced by weather and environmental factors. The training data for ANN was sourced from tests conducted in a climate chamber under high voltage stress. The predicted parameters in this research include, flashover voltage, and surface resistance. The proposed ANN model offers a valuable tool for accurately predicting the flashover parameters of composite insulators affected by extreme humidity, and pollution levels. These findings will also contribute to a better comprehension of the flashover process in outdoor composite insulators.

Keywords – Composite Insulators, High-voltage, Pollution, Flashover, Artificial neural networks.



New combination based on marble powder in Binary and Ternary Blends of Self-Compacting Concrete

Hind Hidayet Sallai^{*}, Nasr-Eddine Bouhamou², Hafida Maarouf³, Kenza Djilali Djebbour⁴

¹Department of science /Nour Bachir El-Bayadh University Centre, Algeria

²Department of civil engineering and public works /Ain Temouchent University Belhaj Bouchaib, Algeria ³Department of civil engineering / Hassiba Benbouali University of Chlef, Algeria.

^{*}(sallaihind5@gmail.com) Email of the corresponding author

Abstract – The construction sector is estimated to be responsible for 3 tons or 25% of atmospheric carbon dioxide emissions. More specifically, the construction sector emits between 850 and 1000 kg of CO₂ per cubic meter. This varies depending on whether it is a new building (which emits more) or a refurbished building (which emits less). We must remember that only one construction material, cement, is used more intensively than the others, generating more emissions. Knowledge of the carbon impact of cement on the environment allows scientists to publish articles on incorporating additives and their effect on concrete. In the same context, the aim of this study is the valorisation of mud from the Brezina dam and marble powder in self-compacting concrete (SCC) and its effect on the physic mechanical properties of SCC Not only in terms of atmospheric carbon dioxide emissions but also in terms of the problem of dam siltation in Algeria so using of dredged sediments from dams as construction materials is a sensible and more ecological choice. Four formulations were studied; three SCCs were based on calcined Brezina mud and marble powder with substitution rates of 10%, 15% and 20%, including the control sample. The study showed that the SCC containing the optimum proportion of calcined mud and marble powder for mechanical behavior was more effective than those containing lower ratios.

Keywords – Carbon dioxide emissions, Mud, Brezina dam, Marble Powder, Mechanical Behavior



Maximizing Efficiency of Independent Solar Power Systems via Particle Swarm Optimization (PSO)

Khaled Belhouchet^{1*}, Assam Zorig¹

¹ Department of Electrical Engineering, Faculty of Technology,
and Laboratory of Electrical Engineering (LGE), University of Mohammed Boudiaf, M'sila, Algeria.

* Corresponding author, e-mail: khaled.belhouchet@univ-msila.dz

Abstract – Photovoltaic systems rank among the top renewable energy solutions. A significant disadvantage is their high initial investment. To reduce costs, optimizing the system's size is a viable approach. This paper aims to explore the potential of Particle Swarm Optimization (PSO) in enhancing the efficiency of independent solar power systems. Independent solar power systems are crucial for sustainable energy generation, particularly in remote locations or off-grid settings. The study investigates the application of PSO, a nature-inspired computational technique, to optimize various factors affecting solar power system performance, such as panel orientation, tilt angle, and energy storage management. By employing PSO algorithms, this research seeks to identify the optimal configuration that maximizes energy output while ensuring cost-effectiveness and minimal environmental impact. The results obtained from this study can significantly contribute to the advancement of renewable energy technologies and promote global efforts towards sustainable development and energy security.

Keywords – Power System, Optimal, photovoltaic, renewable energy, PSO.



Afetlerin İnsan Sağlığı Üzerindeki Etkileri ve Sağlık Hizmetlerinin İyileştirilmesi

Salih UYAR¹

¹Afet Yönetimi / Fen Bilimleri Enstitüsü, Sakarya Üniversitesi, Türkiye

salihuyar36@gmail.com

Özet – Afetler, insanların sağlığını olumsuz yönde etkilemekle birlikte, bireyler üzerinde çevresel, psikolojik, fiziksel, ekonomik ve sosyal yönden de problemler ortaya çıkarmaktadır. Afet sonrasında ortaya çıkan travmatik tablodan normal rutin yaşama dönüşün çok zor olması ve çoğu zaman problemlerin anlaşılabilmesi, büyük sıkıntılara sebep olmaktadır. Afetlerin oluşacağı vakit ve neticelerinin kestirilemediği gibi, toplumların ve vatandaşların bilgi düzeylerinin eksikliği de afetlerin neticelerini olumsuz yönde artırmaktadır. Hayatın sağlıklı akışı ve insanların sıhhatinin devamının sağlanabilmesi için, afetler meydana gelmeden önce her türlü çıkabilecek sorunlara karşı önlem alınmalıdır. Bu sebeptendir ki gerekli uygulama ve eğitim faaliyetleri hayata geçirilmeli, sağlık hizmetlerinin iyileştirilmesi ve geliştirilmesi sağlanmalıdır.

Bu çalışmada insanların yaşantılarında travma oluşturan afetlerin, olumsuz etkilerinin kısa sürüp ve azaltılabilmesi için, afetlerden korunma uygulamaları, bilinç ve farkındalığı artırma ile afet esnasında ve sonrasında insanlarda oluşan psikolojik, çevresel, sosyolojik, fiziksel ve ekonomik etkileri profesyonelce yönetip, her yönden üstesinden gelebilmek amaçlanmıştır. Afetler esnasında ve sonrasında olumsuz etkilenen ve hasar alan ve bir miktar sekteye uğrayan sağlık hizmetlerinin tekrardan oluşturulması, devamının sağlanması, hizmetlerde planlama yapılması, sağlık hizmetlerinin iyileştirilmesi ve geliştirilmesi ele alınmıştır.

Bu çalışma boyunca, kaynak yöntemi olarak, tarama yöntemi tercih edilmiştir. Tercih edilen yöntem ile, makaleler, tezler, internet kaynakları incelemeye alınmıştır. Oluşan verilerden elde edilen sonuç olarak, afetlerin her dönemindeki bireylerin, bilgi ve farkındalık seviyelerini artıracak ve sağlıktaki hizmet ve uygulamaların iyileştirilmesi seviyelerini artırmaya yönelik çalışma sonuçları çıkarılmıştır.

Afetler ile oluşan travmada, insan sağlığı üzerindeki çevresel, psikolojik, fiziksel, sosyal ve ekonomik etkilerin seviyeleri ve sonuçları gözlemlenmiştir. Öncesinde fark edip sonrasında daha etkin uygulamalar amaçlanmıştır. Afete karşı bilinçli toplum ve dirençli kurumlar oluşturmak hedeflenmiştir.

Anahtar Kelimeler – Afet, afet yönetimi, sağlık hizmeti, afet etkileri, travma psikolojisi.



AKADEMİK PERSONELİN BASINA BİLGİ VE DEMEÇ VEREBİLME ÖZGÜRLÜĞÜ VE SINIRLARI

ALPER ÇAĞLAR KOYUNCU

**(a.caglarkoyuncu@gmail.com) Başlıca yazarın mail adresi*

Özet – Akademik personele ilişkin mevzuatımızdaki tanımlara bakıldığında devlet ve vakıf üniversiteleri tüzel kişiliğe sahip olup, ifa edilen görevler gereği kamu görevlisi olunmaktadır. Bu açıdan bir değerlendirme yapmak gerekirse kamu personeli tabiri bir çatı kavram olup, 657 sayılı Devlet Memurluğu Kanunu'na tabi kadrolara atanmakla memur olunmaktadır. Akademik personeller ise 2547 sayılı Yükseköğretim Kanunu ve 2914 sayılı Yükseköğretim Personel Kanunu'na tabiidir. Akademik personellere de 657 sayılı kanundaki disiplin hükümlerinin uygulanması yönündeki düzenlemeler de Anayasa Mahkemesi kararı ile iptal edilmiştir.

Bu açıklamalar özellikle basın yayın organları tarafından sıkça görüşüne başvurulmuş akademik personeller için önem arz etmektedir. Zira Devlet Memurları Kanunu m. 15'e göre kamu görevleri hakkında basına, haber ajanslarına veya radyo ve televizyon kurumlarına bilgi veya demeç verilemez. Ancak buradaki önemli konu evvela akademik personellerin devlet memurları kanununa tabi olmaması ve Anayasa Mahkemesi'nin de bu yöndeki net kararıdır. Zira herhangi devlet memurunun basına bilgi ve demeç verememesi yalnızca yaptığı görev ve bağlı olduğu idarenin faaliyetleri ile sınırlı olmasına karşın uygulamada devlet memurlarının hiçbir şekilde demeç verememesi yönünde yasaklayıcı bir teamül oluşmuştur. Öyle ki bu yönde disiplin cezaları dahi verilmiş ancak; idari yargı ve özellikle de Danıştay tarafından bu kararlar bozulmuştur.

Sonuç olarak akademik personellerin yalnızca kendi branşıyla ilgili değil tüm toplumsal konularla ilgili olarak da basın yayın mecralarında demeç vermesi mümkündür. İstisnaen bilgi verilemeyecek konular ise görev yapılan kurumda yürütülen ve kendisinin soruşturmacı veya disiplin komisyonunda yer aldığı hususlar ile her somut olaya göre değerlendirme yapılması şartıyla idarenin işleyişini bozmaya elverişli konulardır.

Anahtar Kelimeler – Akademik Özgürlükler, kamu görevliliği, akademik personel, devlet memuriyet, bilgi ve demeç verme hürriyeti



Selim seyirli serebral hemoraji tablosu: Perimezensefalik subaraknoid kanama

Ali Zeynel A. Tak

Adıyaman Üniversitesi Tıp Fakültesi Nöroloji A.B.D.

Özet – Perimezensefalik anevrizmal kökenli olmayan subaraknoid kanama, tipik kanama paterni ve selim seyri ile bir subaraknoid kanama tipidir. Şiddetli baş ağrısı şikâyeti ile acil servisimize başvuran olgunun nörolojik muayenesinde patolojik özellik saptanmadı. Çekilen bilgisayarlı beyin tomografisinde (BBT) mezensefalon çevresine lokalize kanama gözlendi. Yapılan serebral angiografide (DSA) kanamaya sebep olabilecek patolojik bir oluşum saptanmadı. Halen takibimizdeki hastanın herhangi bir şikâyeti ve defisiti bulunmamaktadır. Bu çalışmada subaraknoid kanamalı bir hastada perimezensefalik kanama paternini iyi tanımlamanın gereksiz nöroradyolojik ve invaziv uygulamalar kaçınmak açısından ayrıca tanının halk arasındaki kötü şöhreti göz önüne alındığında hasta ve yakınlarına bu tablonun iyi seyirli gideceği bilgisinin verilmesinin önemini vurgulamayı amaçladık.

Anahtar Kelimeler – serebral hemoraji, Perimezensefalik subaraknoid kanama



Hareketli ve Sabit Tip Güneş Enerjisi Sistemlerinin Karşılaştırılması

Mehmet Kan^{1*}, Furkan Sülü¹

¹Makine Mühendisliği Bölümü / Mühendislik ve Doğa Bilimleri Fakültesi, Süleyman Demirel Üniversitesi, Türkiye

*(mehmetkan@sdu.edu.tr)

Özet – Güneş enerjisinin kullanımı günümüzde her geçen gün artmaktadır. Güneş enerjisi sistemlerinden en yüksek düzeyde faydalanmak için güneşten gelen ışığın açısına göre sistemler hareket ederler. Bu çalışmada, hareketli ve sabit güneş enerjisi sistemlerinin performansı nümerik olarak incelenmiştir. Ayrıca PVsyst hesaplama programı ile analizler gerçekleştirilmiştir. Hareketli ve sabit tip güneş enerjisi sistemleri Isparta konumunda simülasyon programında kurulmuştur. PVsyst yazılımı, solar pompa on-grid sulama sistemleri, off-grid (OFF-GRID) vb. alanlarda hesaplamalar yapmak için dünya çapında ve ülkemizde yaygın olarak kullanılmaktadır. Bu yazılım sayesinde santral inşaatı planlanan bölgelerin gölgeleme analizi gibi birçok veriye dayalı olarak yapılabilmektedir. PVsyst programında hesaplamaları sonucunda elde edilen veriler ışığında üretimin detaylı bir analiz sunulmaktadır. Bu üretim analizi, güneş enerjisi konusunda deneyimli EPC (Mühendislik, Tedarik ve Montaj) firmalarından elde edilen bilgiler temel alınarak formüle edilmiş ve maliyet fayda analizi için kullanılmıştır. Yıllık kazançlara bakıldığında sabit sistem yılda 23.438,05\$ kazandırırken hareketli sistem yılda 28.607,88\$ kazandırmaktadır. Buna göre hareketli sistem, sabit sisteme göre yılda yaklaşık %22 daha fazla kazandırmaktadır.

Anahtar Kelimeler – Güneş enerjisi, Güneş paneli, PVsyst, Hareketli güneş takip sistemi, Sabit tip güneş enerjisi sistemi



Contributions of geophysics to geothermal prospecting in the Essaouira basin: Seismic reflection

Ben Elhamdi Sabah^{1*}, Abdelhalim Tabit¹, Algouti Ahmed¹, Hadach Fatiha², Chaima Ben tabet¹, Abdennacer El Myr¹, Khadija Oudour¹

¹Laboratory: Geosciences, Geotourism, Natural Hazards and remote sensing/Faculty of sciences Semlalia in Marrakech, University Cadi Ayyad, Morocco

²Laboratory: Geosciences, Environment and Geomatic / Faculty of sciences Ibnou Zohr in Agadir, University Ibnou Zohr, Morocco

[*sabahben872@gmail.com](mailto:sabahben872@gmail.com)

Abstract – The exploration and understanding of the origins of geothermal sources require an understanding of the lithological nature of the subsurface terrain and its mode of deformation. This understanding can only be achieved through powerful studies such as geophysical studies, specifically seismic reflection surveys. Seismic reflection is a technique that provides insight into the vertical and lateral variation of formations with different types of deformation, namely faults and fractures, which can play a crucial role in the circulation of geothermal fluids. Seismic reflection can detect these structures and help understand their influence on the geothermal potential of a given area. By mapping the geological structure and identifying these key features, such surveys contribute significantly to the planning and development of geothermal resources. Understanding the subsurface geology through techniques like seismic reflection is essential for targeting drilling locations and optimizing geothermal reservoirs' exploitation. In summary, seismic reflection surveys are indispensable tools in geothermal prospecting, providing valuable information about subsurface conditions and geological features that impact the feasibility and effectiveness of geothermal energy extraction in a given terrain.

Keywords –Geothermal, Geophysics, Seismic reflection, Basin, Essaouira



Investigation of Starch Effect on Rutile-type Electrode Covers

Serhat Kaya¹, Mustafa Kaptanoğlu^{*2}

Metallurgy and Materials Engineering, Engineering Faculty, Firat University, Türkiye

*(*mkaptanoglu@firat.edu.tr) Email of the corresponding author*

Abstract – In this study, the effects of starches on covering and welding characteristics were investigated by using wheat and corn starch as flux components in the production of rutile-type covered electrodes. As it is well known, starches are organic matter and provide outgassing during the welding process and add binding properties to the cover. In this direction, 8 different electrodes with 4 different covering thicknesses were developed by mixing 5% by weight of grounded wheat and corn starch into a rutile type covering paste. Electrode productions were carried out by pressing in the mold under 150 bar pressure and using core wires with a diameter of 3 mm. Cover thicknesses are determined as 0.6-1.3-1.8-2.4 mm, respectively. The produced electrodes were dried at 150 C for 2 hours and made ready for welding tests. Optimum electrode thickness and starch type were determined by characterizing the produced electrodes depending on their covering thickness and the starch type they contain. End of the study, the cover pastes produced with wheat starch adhered to the core wire more tightly and allowed less crack formation on the cover. In addition, it was determined that the electrodes produced with wheat starch showed better welding performance than the electrodes produced with corn starch. In conclusion, the electrode with a 4.8 mm covering thickness gave optimum results in terms of covering strength, covering economy, electrode reusability, and welding performance.

This study was supported by a grant from the Scientific and Technological Research Council of Turkey, TUBITAK (Project No: 122M824).

Keywords – Rutile, covered electrode, welding, starch.



Investigation of Drying Time Effect on the Properties of Starch Added Rutile-type Electrodes

Mustafa Kaptanoğlu^{1*}, Akın Odabaşı², Ümmühan Kaya³, Ali İhsan Sayın⁴

^{1,2}Metallurgy and Materials Engineering, Engineering Faculty, Firat University, Türkiye

³Aviation Science and Technologies, Institute of Natural Sciences, Firat University, Türkiye

⁴Aircraft Maintenance and Repair Department, School of Civil Aviation, Firat University, Türkiye

(*mkaptanoglu@firat.edu.tr) Email of the corresponding author

Abstract – In this study, the effect of drying time on cover properties and welding performance was investigated by applying different drying times to rutile-type electrodes with wheat and corn starch additives in their cover. In this direction, 8 electrodes were produced in a mold pressing machine by mixing 5% by weight grounded wheat and corn starch into a rutile type cover cake. In the study, electrodes with 3 mm core wire and 1.8 mm cover thickness were preferred. The electrodes produced in the mold pressing machine were dried at 150 °C for 2,4,6 and 8 hours, respectively. The electrodes, which are ready for the welding process with the drying process, were evaluated in terms of the presence of cracks in the cover, the cover strength, reusability, and typical electrode and cover properties during and after welding. Arc welding tests were performed with electrode positive in the range of 100-120 A. End of the study, it was determined that with the increase in drying time, the presence of cracks in the electrodes decreased, the coating strength increased, the reusability increased and the welding performance improved. Especially in 6 hours of drying time, welding performance with the highest technical specifications was obtained. Besides, this drying time contributes to properties such as arc stability, easy arc formation, non-sticking, and easier removal of slag were observed. On the other hand, the use of wheat or corn starch does not make a serious difference was determined.

This study was supported by a grant from the Scientific and Technological Research Council of Turkey, TUBITAK (Project No: 122M824).

Keywords – Rutile, covered electrode, welding, starch, drying.



Determination of Some Antioxidant Activities in a Dietary Supplement Mixture Comprising Peas, Pumpkin, Sunflower Oil, Alkalized Cocoa, Flaxseed, Apple Pectin, Coconut, Organic Cane Sugar, and Bitter Bean

Halit Demir^{1*}, Raci Kaçmaz², Ufuk Memiş³ and Mahmut İlker Yılmaz⁴

¹ Department of Biochemistry, Van Yuzuncu Yil University, Turkey

² Van Public Health Laboratory, Van-Turkey

³ Dr. Ufuk Memiş Clinic, Gaziantep-Turkey

⁴Epigenetic Health Solutions, Ankara-Turkey

*(halitdemi@gmail.com) Email of the corresponding author

Abstract – Sunflower oil is one of the most important edible oils widely used in nutrition, considered a significant source of linoleic acid. Peas are rich in minerals such as magnesium, calcium, copper, zinc, and iron, which strengthen bones and protect the body against various diseases. Peas are also a potent antioxidant source, enhancing the immune system. The high antioxidant properties of flaxseed are mainly attributed to its high content of a nutrient called lignan. Flaxseed shells are particularly rich in lignan, containing 100 times more lignan than their closest competitor. Additionally, flaxseed contains omega-3. Antioxidants found in pumpkin, such as vitamins C and E, can support eye health by protecting eye tissues against the harmful effects of free radicals and reducing oxidative stress in tears. The Total Antioxidant Capacity (TAC), Catalase (CAT), Superoxide Dismutase (SOD), Glutathione Reductase (GR), Glutathione S-Transferase (GST), and Reduced Glutathione (GSH) levels in dietary supplements consisting of peas, pumpkin, sunflower oil, alkalized cocoa, flaxseed, apple pectin, coconut, organic cane sugar, and bitter bean were determined spectrophotometrically. TAC was found to be 1825 U/L; CAT enzyme activity was 1648 U/L; SOD enzyme activity was 2224 U/L; GR was 2423 U/L; and GST enzyme activity was 2715 U/L. In this study, the values of antioxidant activities such as TAC, CAT, SOD, GR, GST, and GSH were found to be significantly higher than those reported in previous scientific studies. Due to the high antioxidant activities of these mixed dietary supplements, their consumption during snacks is recommended for daily diet and nutrition.

Keywords – Antioxidant, CAT (Catalase), GR (Glutathione Reductase), GST (Glutathione S-Transferase), SOD (Superoxide Dismutase), TAC (Total Antioxidant Capacity).



Content of Some Antioxidant Activities in a Vanilla Dietary Supplement Mixture Consisting of Pea Protein, Pumpkin, Rice Flour, Coconut Oil and Powder, Beans, and Bitter Bean

Halit Demir^{1*}, Raci Kaçmaz², Ufuk Memiş³ and Mahmut İlker Yılmaz⁴

¹ Department of Biochemistry, Van Yuzuncu Yil University, Turkey

² Van Public Health Laboratory, Van-Turkey

³ Dr. Ufuk Memiş Clinic, Gaziantep-Turkey

⁴Epigenetic Health Solutions, Ankara-Turkey

*(halitdemi@gmail.com) Email of the corresponding author

Abstract – Medicinal and aromatic plants have been used for various purposes such as food, medicine, cosmetics, and spices since the beginning of human history. In recent years, there has been a significant increase in interest in plants as natural sources of antioxidants, leading to a growing number of studies investigating the use of medicinal and aromatic plants as natural antioxidant sources. Studies have shown that aromatic plants exhibit high antioxidant activities and contain numerous phytochemical compounds. The Total Antioxidant Capacity (TAC), Catalase (CAT), Superoxide Dismutase (SOD), Glutathione Reductase (GR), Glutathione S-Transferase (GST), and Reduced Glutathione (GSH) levels in a Vanilla Dietary Supplement Mixture consisting of Pea Protein, Pumpkin, Rice Flour, Coconut Oil and Powder, Beans, and Bitter Bean were determined spectrophotometrically. Total antioxidant capacity (TAC) was found to be 1912 U/L; Catalase (CAT) enzyme activity was 1820 U/L; Superoxide dismutase (SOD) enzyme activity was 2436 U/L; Glutathione reductase (GR) was 2312 U/L; and Glutathione S-Transferase (GST) enzyme activity was 2940 U/L. In this study, the antioxidant activity values such as Total Antioxidant Capacity (TAC), Catalase (CAT), Superoxide Dismutase (SOD), Glutathione Reductase (GR), Glutathione S-Transferase (GST), and Reduced Glutathione (GSH) were found to be significantly higher than those reported in previous studies. Therefore, due to their high antioxidant activities, these mixed dietary supplements are recommended for daily consumption and snacks.

Keywords – Antioxidant, CAT (Catalase), GR (Glutathione Reductase), GST (Glutathione S-Transferase), TAC (Total Antioxidant Capacity), SOD (Superoxide Dismutase).



Optimal Corrective Action for a Source Outage on DC Networks

Tuncay Altun*

¹ Department of Electrical Electronics Engineering / Faculty of Engineering-Architecture, Yozgat Bozok University, Turkiye

*(tuncay.altun@yobu.edu.tr)

Abstract – A contingency in a power grid is defined as an unexpected outage, i.e., loss or failure, of an individual or multiple network component. Optimal corrective action is indispensable in a such a case to evaluate the situation and generate pre-specified recovery approaches so that an islanded DC network assures its secure operation. Since DC networks are becoming prevalent in mission/safety-critical application such as unmanned aerial vehicles, electrical vehicles, data centers, etc., their resiliency against a contingency must be provided in an optimum manner. In this study a DC network is formulated as a combinatorial optimization problem such that non-linearity of power flow/balance equations are preserved while component statuses are integrated as binary variables. This formulation refers to a mixed-integer nonlinear programming problem that would be addressed with convex optimization approach. A second-order cone programming relaxation method is applied to overcome non-convexity on power flow/balance equations while a tree search strategy is employed to settle non-vital loads to be shed in case of an outage in a DC network. The proposed method provides optimal set-points for the survived sources and optimal on/off status for the non-vital loads based on their priority weights. The performance and validation of the proposed optimal corrective action method to mitigate contingency in a DC network is carried out using modified IEEE 14-bus system populated with 5 converters.

Keywords – Convex Optimization, Contingency Analysis, DC Networks, Load shedding, Optimal Corrective Action.



Petrographic Analysis of Beach Rocks from the Souiria Laqdimia Coastline in Morocco

Salma Ezzahzi^{1*}, Ahmed Algouti¹, Abdellah Algouti¹, Soukaina Baid¹, Hayat El khounaijri¹

¹Department of Geology, Geosciences, Geotourism, Natural Hazards and Remote sensing Laboratory (2GRNT) Faculty of Sciences Semlalia, University of Cadi Ayyad, BP 2390, 40000 Marrakesh, Morocco.

* salmaezzahzi01@gmail.com

Abstract – The beach rock formations along the Souiria Laqdimia coast in Morocco present an intriguing area of study due to their unique characteristics and the limited research conducted in this region. In our investigation, we concentrated on collecting rock specimens near the estuary of the Oued Tensift, a key location for understanding the geological and biological interactions affecting coastal formations.

The primary goal of our study was to conduct a detailed petrographic analysis of thin sections extracted from these collected beach rocks. This involved examining the microscopic features of the rocks to identify the mineralogical and textural components of the cement binding the rock particles. The analysis revealed that the predominant cements in these beach rocks are calcite and magnesian calcite. These findings are significant as they help elucidate the types of cementation processes occurring in coastal environments, particularly in terms of carbonate mineral precipitation under varying environmental conditions.

Moreover, our study provides insights into the biological aspects of beach rock formation, particularly through the identification of bioturbation. Bioturbation refers to the disturbance of sedimentary deposits by living organisms, which in this case involves the activity of organisms within the rock matrix that affects the deposition and cementation processes. The study specifically noted the role of burrows created by these organisms, which contribute significantly to the stabilization of pebbles and further influence the cementation process of the beach rocks.

These burrows not only help in anchoring the pebbles within the rock matrix but also modify the local environment in ways that affect the chemical processes leading to cementation. Such interactions between biological activity and geological processes are crucial for understanding the natural engineering that stabilizes and shapes the coastal rock formations.

This comprehensive examination of beach rocks in Souiria Laqdimia adds valuable knowledge to our understanding of coastal geology, highlighting the complex interplay between biological activities and geological processes in shaping beach rock formations. The findings from this study not only broaden our understanding of sedimentary rock formations in coastal areas but also contribute to the wider field of geosciences with implications for environmental conservation and coastal management.

Keywords – Beach rock, Coastline, Souiria Laqdimia, Petrographic study



Triple-Band Patch Antenna Design with Machine Learning Algorithms

Ali Töz*, Merih Palandöken ²

¹ Department of Electrical and Electronics Engineering, Faculty of Engineering and Architecture, Izmir Katip Celebi University, Turkey

² Department of Electrical and Electronics Engineering, Faculty of Engineering and Architecture, Izmir Katip Celebi University, Turkey

*(tozz.ali35@gmail.com)

Abstract – Wireless communication is crucial in many fields, such as engineering, transportation, inventory tracking, industrial automation, IoT, and mobile communication, due to advancing technology. Antennas are essential for signal transmission and reception in wireless communication, playing a vital role in ensuring the effective operation and efficiency of these technologies. Antenna design is essential for achieving objectives such as enhancing efficiency, improving communication quality, and extending communication range in communication systems. Machine learning algorithms can serve as powerful tools for optimizing the antenna design process and achieving more accurate results. This study presents the design of an antenna that operates in three bands and can be used in wireless communication technology with the support of machine learning. The antenna was designed using an FR-4 substrate with a dielectric constant of 4.4, a loss tangent of 0.02, and a thickness of 1.6 mm. Copper was used for the patch and ground sections. The antenna provides three impedance bandwidths: 856.81 MHz with a bandwidth of 158.27 MHz, 1298.4 MHz with a bandwidth of 38.5 MHz, and 2164.8 GHz with a bandwidth of 958.5 MHz. The geometric parameters of the antenna were input into the ML model. The data set comprises 1024 samples and the output data represents the magnitude of the reflection parameter (S11). Twelve regression algorithms were applied and compared, with the Random Forests algorithm producing the best result.

Keywords – Antenna Design, Machine Learning, Triple-band, Microstrip Patch, Wideband, Communication



Cognitive Processes in Reading Comprehension: A Theoretical Framework for Foreign Language Acquisition

Marija Todorova*

¹Faculty of Philology, Goce Delcev University, Stip, North Macedonia

*(marija.todorova@ugd.edu.mk)

Abstract – Reading comprehension is a cognitive process essential for language acquisition, particularly in the field of foreign language learning. This paper provides an in-depth exploration of the theoretical foundations of cognitive psychology in the context of reading comprehension in both second and third language acquisition (SLA/TLA). Through an examination of established theories such as schema theory and cognitive load theory, the paper seeks to explain the cognitive processes involved in reading comprehension among foreign language learners. By examining these theories, the paper aims to enhance our understanding of how learners acquire reading skills and develop reading proficiency in foreign languages and explains the cognitive mechanisms that facilitate this process. Furthermore, the paper discusses the implications of these insights for language educators and researchers, highlighting the importance of informed instructional practices and future research directions in the field of foreign language acquisition. Through this exploration of cognitive processes in reading comprehension, the paper contributes to advancing our knowledge of language acquisition and offers practical implications for optimizing instructional strategies in foreign language learning contexts.

Keywords – Reading comprehension, cognitive processes, theoretical framework, second language acquisition, third language acquisition.



DİJİTAL DÖNÜŞÜM BECERİ/YETKİNLİK MODELLERİ: SİSTEMATİK LİTERATÜR TARAMASI

Melike Gizem DAVUTOĞULLARI^{1*}, Ebru GÖKALP AYDIN²

^{1,2}Bilgisayar Mühendisliği / Fen Bilimleri Enstitüsü, Hacettepe Üniversitesi, Türkiye

(mgdavutogullari@gmail.com)

Özet – Teknolojinin hızla ilerlediği günümüzde dijital dönüşüm Endüstri 4.0’ın merkezinde yer almakta ve gerek sosyal hayatta gerek iş dünyasında değişikliklere yol açmaktadır. Bu dönüşüm yapay zeka, nesnelerin interneti, akıllı makineler, otomasyon gibi teknolojilerin entegrasyonu ile karakterize edilmektedir. Bu teknolojik ilerlemeler dünyanın içinde bulunduğu sosyal değişimler ile birlikte sosyal hayatı dönüştürdüğü gibi iş hayatını da değiştirmekte ve işgücü piyasasında yeni mesleklerin ortaya çıkmasına, beceri/yetkinlik dönüşümüne yol açmaktadır. İnsan Kaynakları yönetimi bu değişimleri benimseyerek var olan iş gücünü, yeni gelecek işgücünü en iyi şekilde kullanmak adına öğrenmeyi ve adaptasyonu destekleyen stratejilere sahip olmalıdır. Bu sebeple dijital dönüşümle beraber gelen yeni meslekler ve beceriler/yetkinlikler sistematik literatür taraması ile incelenerek literatürün mevcut durumu analiz edilmiş, gelecek çalışmalara yön vermek amacıyla boşluklar tespit edilmiştir. 5688 çalışma incelenmiş ve elemeler sonucu 17 çalışmadan oluşan havuzda yer alan çalışmalar incelenerek araştırma soruları yanıtlanmıştır. Literatürdeki boşluklar tespit edilmiştir ve bu alanda bir değerlendirme modeli geliştirilmesi ihtiyacı görülmüştür.

Anahtar Kelimeler – dijital dönüşüm, yeni meslekler, beceri, yetkinlik, sistematik literatür taraması, endüstri 4.0



Western High Atlas Morocco The complex reef of Cap Ghir, Upper Jurassic Oxfordian

Mohamed Lakhli*¹, Ahmed Algouti¹, Fatiha Hadach², Yahia Laadimi¹, Imane El kihal¹, Kaouthar Majdouli¹,
Khadija Lamrani¹, Khadija Oudour¹, Jaouad Aadaj¹, Hayat El khounaijri¹ and Naji Jdaba²

¹ laboratory: Geosciences, Geotourism, Natural Hazards and Remote Sensing/faculty of science Semailia, University Cadi Ayyad, Morocco

²Laboratory: Geosciences, Environment and Geomatic/faculty of science Agadir Ibno Zohr, Morocco

*mohamedlakhli54@gamil.com

Abstract – The Upper Jurassic of the Moroccan margin, particularly in the Agadir Essaouira basin, and specifically in its western part towards the Atlantic Ocean, is characterized by geological diversity. The reef association of Cap Ghir in the western High Atlas is mainly composed of bioconstructions such as colonies of stromatoporoids, which are abundant during the initial reef formation. These colonies exhibit massive or globular forms similar to those of corals. Other bioclastic elements such as bivalves and gastropods are also found, which contribute to reef construction and are often cemented by algal or microbial micrite. The area is characterized by an abundance of branches and masses, generally exhibiting Framestone and Bindstone textures, indicating a turbulent environment .

Keywords – Reef, Upper Jurassic, Oxfordian, Argovian, Rauracian, Sequanian, Cape Ghir, Agadir



Study of the placement of IoT sensors on the athlete's body especially the PPG sensor

Mourad ELGORMA*, Rachid MERZOUGUI² and Djillali MOUSSAOUI³

¹Department of telecommunication, STIC laboratory, University of Tlemcen, Algeria

²Department of telecommunication, STIC laboratory, University of Tlemcen, Algeria

³Department of telecommunication, STIC laboratory, University of Tlemcen, Algeria

*mourad.elgorma@univ-tlemcen.dz

Abstract – In this abstract, we present the internet of things technology, which, as we know, is revolutionizing various industries and changing the way we interact with everyday objects. Our study concentrates on sports. We want to examine the utilization of IoT technology in monitoring athletes' health, collecting data, and improving their training techniques, particularly focusing on the role of sensors and their placement on the athlete's body. In our work, we selected the oxygen saturation (spo2) and temperature, enabling us to measure them using the Max30102 sensor, connected to a microcontroller such as an Arduino board, and obtains photoplethysmography (PPG) data. So our job is to place the sensor in various places on the body and compare it to professional medical equipment. The placement, like on the wrist, finger, and earlobe. We will then analyze the data collected to determine the accuracy and reliability of the sensor readings. And compare it to the data measured by a professional device to determine the sensor technology's effectiveness. And determine the percentage of error in the sensor readings. This will help us understand how accurate the Max30102 sensor is at measuring vital signs and whether it can be used as a reliable alternative to medical equipment. By conducting these comparisons and analyses, we can determine the sensor's suitability for various applications, such as health monitoring devices or wearable technology. Overall, this study will provide valuable insights into the potential of using sensors for healthcare purposes.

Keywords – IoT, PPG sensor, Sport, health, SpO2



Sedimentological, Mineralogical Analysis, and Mapping of Natural Hazard Zones using GIS and Remote Sensing in the Fetouaka Watershed, Morocco

Abdennacer El myr *¹, Ahmed Algouti¹, Mourad Guernouche³, Fatiha Hadach², Khadija Oudour¹, Sabah Ben El Hamdi¹, Chaima Ben Tabet¹, Hayat El khounaijri¹

¹ laboratory : Geosciences, Geotourism, Natural Hazards and Remote Sensing/faculty of science Semlalia, University Cadi Ayyad, Morocco

² laboratory : Geosciences, Environment and Geomatic/faculty of science Agadir, University Ibnou Zohr, Morocco

³ OCP Group, Casablanca, Morocco

*elmyrabdennacer1@gmail.com

Abstract – The multidisciplinary study of the Fetouaka watershed, located in the High Central Atlas, assesses the impact of climate change on water resources and natural hazards. It uses hydrological, sedimentological, mineralogical approaches, and mapping of natural hazard zones, with technologies such as Geographic Information Systems (GIS) and remote sensing. The goal is to understand how climate change influences the hydrology of the region, including water availability, variations in streamflow, and changes in precipitation patterns. The study also analyzes the consequences of these changes on natural hazards, such as drought and floods, by mapping risk zones and identifying vulnerability factors. Three approaches are used: computer-based, field-based, and experimental.

The computer-based approach involves the use of remote sensing techniques, where satellite images are analyzed to monitor land use variations and morphological characteristics of the Fetouaka watershed.

The field-based approach involves direct observations and measurements on the ground. It will be dedicated to the description and validation of the results obtained from digital mapping.

The experimental approach focuses on the sedimentological and mineralogical characterization of sediments and/or soil collected from areas affected by risks such as drought, floods, water erosion, etc. Finally, all the results will be integrated, correlated, and spatially analyzed with climatic and topographic data.

The results of this study will provide valuable information for water resource management, adaptation planning, and natural hazard reduction. They will contribute to a better understanding of the complex interactions between climate, hydrology, soils, and environmental changes in the region.

Keywords – Fetouaka watershed, High Central Atlas, remote sensing, Natural Hazard.



TiCl₄ muamelesi ile Düşük Işık Yoğunluğunda DSP'lerin Foto Algılama Özelliklerinin Geliştirilmesi

Mücella ÖZBAY KARAKUŞ^{1*}

¹Bilgisayar Mühendisliği Bölümü / Mühendislik-Mimarlık Fakültesi, Yozgat Bozok Üniversitesi, Türkiye

*mucella.karakus@yobu.edu.tr

Özet – Bu çalışmada, Ruthenizer 535-4TBA (N-712) kodlu bir boyar madde kullanılarak DSP (Boyayla Duyarlılaştırılmış Fotovoltaik Cihaz - Dye Sensitized Photovoltaics) yapıları hazırlanmıştır. DSP yapıları oluşturulurken, bir gruba TiCl₄ ile muamele etme işlemi uygulanmışken, diğer gruba bu işlem uygulanmamıştır. DSP'lerin düşük ışık şiddetlerine karşı oldukça hassas olduğu bilinmektedir ve bu nedenle düşük seviyelerdeki aydınlatma değerleri için sensör uygulamalarında kullanılmaya uygun olduğu düşünülmektedir. Bu bağlamda, iki üretim yönteminin enerji dönüşüm verimine etkisinin yanı sıra sensör performansına etkisi de incelenmiş ve ayrıntılı bir rapor sunulmuştur. Çalışma kapsamında, standart aydınlatma altında ve toplamda 13 adımda kademeli olarak azaltılan düşük ışık koşullarında elektriksel ölçümler gerçekleştirilmiştir. DSP'lerin aydınlatma altında enerji dönüşüm verimi TiCl₄ ile muamele edilen örnek için 1000 W/m² aydınlatma altına % 9,33 iken 0,1 W/m²'de bu değer % 27,5 değerine kadar artmıştır. Ayrıca, Elektrokimyasal Empedans Spektroskopisi (EIS) analiziyle, yapıların elektrokimyasal özellikleri incelenmiş ve sensör karakterizasyonu için elektron ömrü, yükselme süresi ve düşüş süresi gibi parametreler de belirlenmiştir. TiCl₄ ile muamele edilmiş T-N712 ve TiCl₄ ile muamele edilmemiş N712 kodlu DSSC'ler için sırasıyla 4,1 ve 5,3 ns mertebesinde yanıt süreleri elde edilmiştir. Elde edilen verilerin ultra hassas ışık detektörlerinin üretimi için yeni bir yol sağlayacağı düşünülmektedir.

Anahtar Kelimeler – Boyayla duyarlılaştırılmış fotovoltaikler, Düşük ışık şiddeti, Optik sensörler, N712 boyar madde, TiCl₄ prosedürü



Household Size and Risk Aversion of Households in European Union

Yuliya Petrenko^{1*}

¹Department of Finance, University of Economics in Bratislava, Slovakia

^{*}(yuliya.petrenko@euba.sk) Email of the corresponding author

Abstract – The paper examines the effect of household size on risk aversion using data from the Household Finance and Consumption Survey (HFCS) conducted in European Union (EU) countries in 2010, 2014, 2017, and 2021. We assume that larger households are more risk averse meaning that households with more members are less likely to invest in shares, which are among the riskiest instruments. We test our assumption using the percentage of households owning shares as an inverse proxy for risk aversion in each household size group. We use regression analysis, the results of which show that from 2010 to 2017 there was a downward trend in the percentage of households owning shares, which can be explained by the accession of new EU members, whose households tend to be less inclined to invest. In terms of household size, the groups with one and five or more members had the lowest proportions of households owning shares throughout the investigated period. In addition to risk aversion, it can be assumed that one-member households have less reason to invest as they have no dependents, while households with five or more members do not have sufficient resources to invest due to high expenses.

Keywords – Household size, Risk aversion, Household finance, Household financial decision making, HFCS data

LPDA Design: Operating Frequency Range Of 20 GHz to 34 GHz

Hanane Metahri*, Mehadji Abri ²

¹Department of telecommunications/Faculty of technology, University Tlemcen, Algeria

²Department of telecommunications/Faculty of Technology, University Tlemcen, Algeria

*metahrihanane100@yahoo.com

Abstract – Log-Periodic dipole array (LPDA) antennas emerged in the 1960s and have since become widely recognized as the most prominent type of log-periodic antennas. The LPDA stands as a versatile solution in the realm of antenna technology, offering wideband coverage across a broad frequency spectrum. Its design, characterized by a logarithmic arrangement of dipole elements, ensures consistent performance over a range of frequencies. The LPDA's performance was simulated within the millimeter band, ranging from 20 to 34 GHz. First the proposed antenna is illustrated in Figure 1, LPDA consists of dipoles, a boom, and stub. The latter is used to help align the dipole elements accurately along the boom of the LPDA, which is essential for achieving the desired radiation pattern and performance of the antenna. The modeled antenna has three adjustable parameters : the size of the dipoles, the distance between them and the number of elements of the antenna. The material used for the dipoles is the Aluminum, a lossy metal. Two aluminum pipes in parallel were simulated to present the support structure. Results obtained from Simulations using the CST simulator indicate that the antenna array operates at 30.29 GHz with a return loss of approximately -47.60 dB as shown in Figure 2, and an average gain of about 7.25 dBi, which is largely positive across the entire frequency spectrum ranging from 20 to 34 GHz. Figure 3 show the antenna radiation patterns in 2D and 3D with a maximum directivity value of 7.65 dBi towards the dipole elements, and an efficiency of 91%. LPDAs find application in diverse fields such as telecommunications, broadcasting, radar systems, and amateur radio.

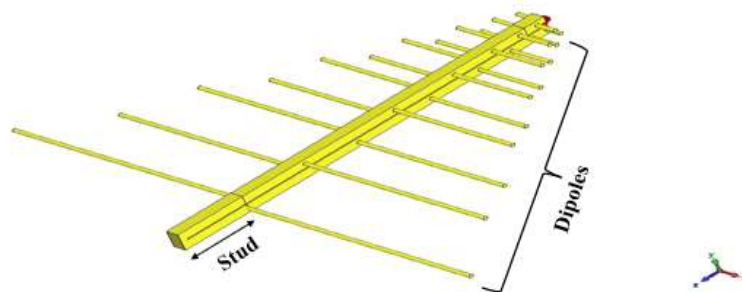


Figure 1. Structure of LPDA antenna.

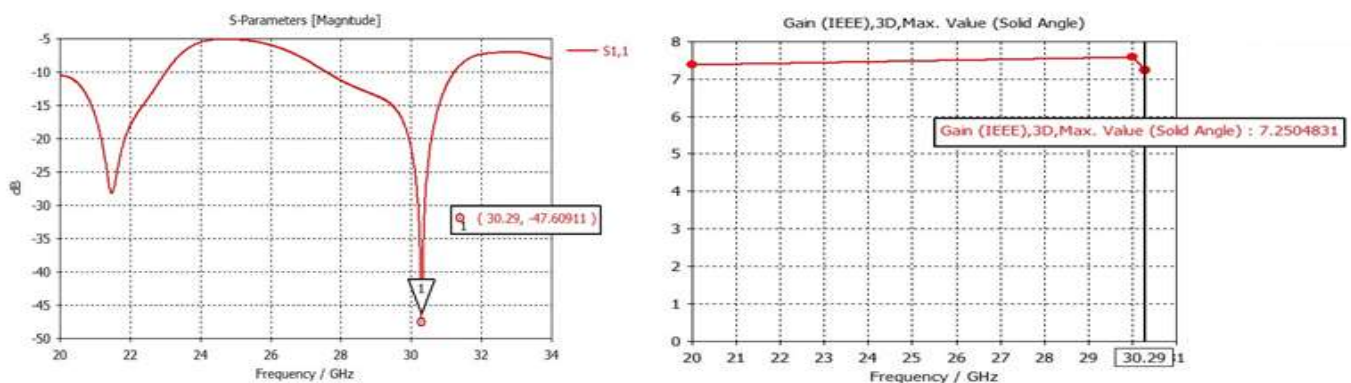


Figure 2. The return loss and gain of the LPDA antenna.

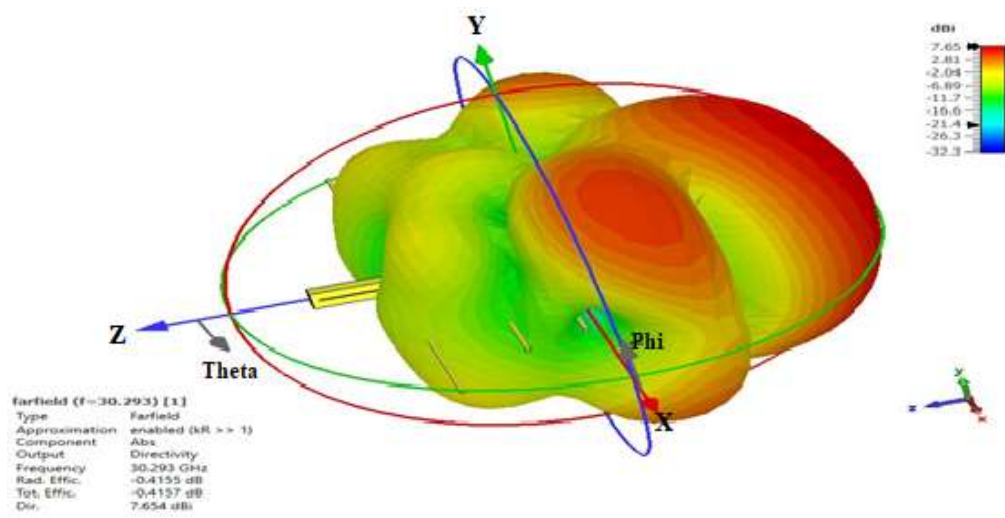


Figure 3. Radiation Pattern at 30.29 GHz in logarithmic scale.

Keywords – LPDA, Millimeter band, Gain, Directivity



Tarımda Kullanılan Herbisitlerin Topraktaki Enzimatik Etkileri

Çiğdem KÜÇÜK¹, *MERAL ÖDEMİŞ², R. Nihal AKSOY³

¹Biyoloji/Fen Bilimleri Enstitüsü, Harran Üniversitesi, Türkiye

²Biyoloji/Fen Bilimleri Enstitüsü, Harran Üniversitesi, Türkiye

³Biyoloji/Fen Bilimleri Enstitüsü, Harran Üniversitesi, Türkiye

*(mrlodemis@gmail.com)

Özet - Pestisit, tarım mahsullerinin üretimi, hasatı ve taşınması sırasında zarar veren böcekleri ve diğer zararlıları engellemek için kullanılan kimyasal maddelerdir. Ülkemizde farklı bileşimlerdeki pestisitlerden yılda kabaca 30 bin tona yakın kullanılmaktadır. Bu oran ABD’de 293000, İtalya’da 43000 ve İngiltere’de 30 bin ton olarak bilinmektedir. 1941’den günümüze kadar etkinliğini gösteren herbisitler, ekonomik olup çiftçiliği çok verimli duruma getirilmesine katkı sağlamakla beraber yabancı ot mücadelesinde çiftlikte işgücüne olan ihtiyacı azaltmaktadır. Topraklarda verilen herbisitlerin zamanla biriktirilmesi neticesinde, toprak enzimleri veya toprakta yaşayan mikroorganizmaların zarar gördüğü anlaşıp enzimlerin topraklara ulaşmasıyla kirleticilere karşı gösterdikleri tepkilerin ölçüt olarak kullanılmalarına dayanan birçok çalışma bulunmaktadır. Çalışmamızda ŞanlıUrfa ve etrafında genel olarak kullanılan herbisitlerden quizalofop-p-ethyl ve mesotrione + nicosulfuran uygulamalarının topraktaki enzim aktivitelerinin etkilerinin araştırılması amaçlanmıştır. Çalışmada kullanılan herbisitler 4 farklı dozda uygulanmış, 90 günlük inkübasyon süreleri boyunca topraklarda meydana getirdiği mikrobiyal biyokütle β -glukosidaz, dehidrogenaz değişimler gözlenmiştir. Çalışma sonucunda, mesotrione + nicosulfuran uygulanan topraklarda herbisidin artan dozları uygulandığı inkübasyonun 45. gününde β -glukosidaz aktiviteyi arttırdığı incelenmiştir. Topraklara farklı dozlarda quizalofop-p-ethyl uygulandığında ise β -glukosidaz aktivitede artış uygulanan tüm dozlarda inkübasyonun 45. gününde belirlenmiş, 60. günden itibaren ise azaldığı saptanmıştır.

Anahtar Kelimeler - Pestisit, herbisit, inkübasyon, dehidrogenaz



Toward the preservation of earthen architecture in Algeria

Narimane Rabehi^{*1} and Adel Sekhri²

¹Department of Architecture, LACOMOFA Laboratory, University of Biskra, Algeria

²Department of Architecture, LACOMOFA Laboratory, University of Biskra, Algeria. LHE Laboratory, University of Setif 1, Algeria

* narimene.rabehi@univ-biskra.dz

Abstract – Algeria boasts a rich cultural heritage, highlighting human creative genius, notably through earthen architecture, which constitutes some of the most beautiful archaeological and historical sites in southern Algeria. Human settlements seamlessly integrated into the landscape, despite environmental conditions, manifest as 'ksour' that have evolved to form a compact fabric with meticulously hierarchical dwellings and streets.

The Ksar Tadjmout, one of the five ksours in the city of Laghouat, has retained its original structure to this day, bearing witness to earthen architecture in Algeria. Historical analysis has shed light on how this establishment evolved over time, primarily aimed at preserving the historical and urban identity of each region through the recognition and preservation of these ksour.

Keywords – Ksar Tadjmout, preservation, historical analysis, southern Algerian, Laghouat.



Kaotik haritalarla zenginleştirilmiş yenilikçi optimizasyon yaklaşımı: Mühendislik problemine yönelik bir değerlendirme

Safa Dörterler^{1*}, Durmuş Özdemir² ve Hasan Temurtaş³

¹Bilgisayar Mühendisliği / Mühendislik Fakültesi, Kütahya Dumlupınar Üniversitesi, Türkiye

²Bilgisayar Mühendisliği / Mühendislik Fakültesi, Kütahya Dumlupınar Üniversitesi, Türkiye

³Bilgisayar Mühendisliği / Mühendislik Fakültesi, Kütahya Dumlupınar Üniversitesi, Türkiye

*(safa.dorterler@dpu.edu.tr) Başlıca yazarın mail adresi

Özet – Bu çalışmada Battle Royale Optimization (BRO) algoritmasına kaos teorisi entegre edilerek yeni bir optimizasyon yaklaşımı geliştirmiştir. Bernoulli Shift Harita, Cubic Harita, Duffing Harita, Intermittency Harita ve Liebovtech Harita olmak üzere beş farklı kaotik harita BRO algoritmasına entegre edilerek yeni modelleme yaklaşımları oluşturulmuştur. Geliştirilen modeller, gerçek dünya mühendislik problemlerinden biri olan Tubular Column Tasarım Problemi üzerinde test edilmiş ve klasik BRO algoritmasıyla karşılaştırılmıştır. Bu yeni yaklaşımın amacı, keşif ve sömürü yeteneklerinin daha iyi bir dengeye sahip olmasıyla daha etkili sonuçlar elde etmektir. Deneysel sonuçlar, kaotik BRO algoritmalarının klasik BRO'ya göre daha iyi performans gösterdiğini göstermektedir. Özellikle, Intermittency-BRO algoritması en iyi sonuçları vererek optimum maliyet açısından diğer yöntemlerden daha başarılı sonuçlar üretmiştir. Intermittency-BRO algoritması Tubular Column Tasarım Probleminin optimum değerini 26,4875 bularak en optimum sonucu bulmuştur. Diğer kaotik BRO algoritmaları da klasik BRO'ya göre daha düşük ortalama maliyetler ile daha tutarlı sonuçlar elde etmiştir. Ayrıca, literatürdeki diğer metasezgisel algoritmalarla karşılaştırıldığında, kaotik BRO algoritmaları en optimum çözümleri sunmuştur. Sonuç olarak, bu çalışma kaos teorisinin optimizasyon algoritmalarında kullanımının etkinliğini ve potansiyelini vurgulamaktadır. Kaotik BRO algoritmaları, çeşitli uygulamalarda etkili bir şekilde kullanılabilir ve güçlü bir optimizasyon aracı olarak öne çıkmaktadır. Özellikle, Intermittency-BRO algoritması, bu tür problemler için güçlü ve güvenilir bir çözüm sunmaktadır. Bu bulgular, kaotik BRO algoritmalarının mühendislik problemlerinde etkili ve güvenilir bir şekilde kullanılabilirliğini göstermektedir.

Anahtar Kelimeler – Battle Royale Optimizasyon, Kaos Teorisi, Kaotik Haritalar, Meta-sezgisel Algoritmalar, Tubular Column Tasarım Problemi.



The Implementation of Canadian Standards for Quality Assurance/Quality Control in the Mining Sector

Kaouthar Majdouli*, Ahmed Algouti¹, Abdellah Algouti¹, Khadija Lamrani¹, Mohamed Lakhilili¹, Yahya Laadimi¹, Naji Jdaba², Imane El Kihal¹

¹Laboratory: Geosciences, Geotourism, Natural Hazards and Remote Sensing/Faculty of Sciences Semlalia, University Cadi Ayyad, Morocco

²Laboratory: Geosciences, Environment and Geomatics/Faculty of Sciences Agadir Ibn Zohr, Morocco

K.majdouli.ced@uca.ac.ma

Abstract – The Qa/Qc (Quality Assurance / Quality Control) report plays a crucial role in the mining industry by ensuring the quality and integrity of surveying and sampling data for mineral resources. The Qa/Qc report is primarily used to monitor the accuracy and precision of test results and to detect errors or biases in the data. The impact of the Qa/Qc report on mineral resources can be significant. If surveying, sampling, and laboratory analysis data are unreliable due to quality issues, this can result in errors in mineral resource estimates. For example, poorly executed surveying data, improperly collected samples, or contamination during sample preparation can lead to underestimation or overestimation of mineral grades, which can have a negative impact on the economic feasibility of a mining project.

A rigorous Qa/Qc report can help minimize these errors and ensure data reliability. Reliable data is crucial for making informed decisions regarding mining exploration, project development, and mining production management. Governments, investors, and regulators often require detailed Qa/Qc reports to ensure that drilling and sampling data are accurate and that mineral resource calculations are precise, which can have a significant impact on mineral resource assessment and management. Implementing such programs requires better database preparation and data processing, as well as a dynamic and cooperative relationship with geologists and laboratories.

Keywords – Quality Assurance, Quality Control, Mining industry, Sampling data, Accuracy, Precision



Novel SMote Based Ensemble Model for Medical Multi Class Imbalanced Data Set

Mouna Lamari¹, *Nabiha Azizi², Nadjette Dendani², Aya Lihoum², Nacer Eddine Hammami³

¹LRI Laboratory, Faculty of Technology, Badji Mokhat University of Annaba, 23000, Algeria

²Labge Laboratory, Faculty of Technology, Badji Mokhat University of Annaba, 23000, Algeria

³Computer Engineering Department, College of Engineering and Computer Science, Mustaqbal University, Saudi Arabia

*(azizi@labged.net)

Abstract – Class imbalance, defined as a difference in the number of occurrences of the various classes in the issue, is present in many real-world classification datasets. Classifiers are known to suffer from this problem due to their accuracy-oriented design, which leads the minority class to be neglected. To overcome this issue, a number of balancing approaches have been widely adopted.

In this study, a classification system incorporating dynamic resampling approaches for the classification of imbalanced medical datasets is suggested. The major goal of our master thesis is to shed light on multi-class imbalanced data issues by adopting resampling techniques from SMOTE extensions for the classification of imbalanced multi-class data.

To beneficate of the different generated synthesis samples, our contribution consists on combining without duplication all datasets. The final decision will be ensured by the integration of a hybrid ensemble approach dubbed SMOTEBagging.

An empirical investigation on five imbalanced datasets was done to attain this objective and to evaluate the performance of the SMOTE extension methods before and after rebalancing data. As a first stage, a variety of resampling techniques were used to rebalance the data. Then, in a non-repetitive data fusion procedure, we integrate the results of each approach, and finally, we employ the resulting dataset to work with a hybrid ensemble method called SMOTEBagging.

The many tests we conducted on diverse datasets that the suggested approach performs quite well.

Keywords – Smote, Ensemble Model, Multi Class Imbalanced Data Set



Determination of Sediment, pH, Pressure, Temperature, and Similar Elements in Tanks with SCADA System: Yozgat Example

Muhammet Furkan KARAMAN^{1*}, Yunus GÖRKEM², and Şekip Esat HAYBER³

¹Graduate School of Science, Kırşehir Ahi Evran University, Türkiye

²Department of Electricity and Energy, Kırşehir Ahi Evran University, Türkiye

³Electrical-Electronics Engineering, Bursa Uludağ University, Türkiye

*(m.furkan-karaman@hotmail.com)

Abstract – Water is essential for human life. For water to be delivered to people in a clean and healthy manner, the tanks in which it is stored before being made available must also be reliable and clean. In order to prevent the risk of transmitting infectious diseases through water, it is of great importance to apply purification and disinfection processes to the water held in water storage tanks. For this reason, in real-time, it is necessary to monitor the sediments in the storage tank and their properties, such as pH, pressure, and temperature.

With SCADA systems, water flow is monitored remotely by providing central control and monitoring in drinking water distribution. Thanks to the collected data, adverse situations in the storage tanks can be automatically detected, and water distribution can be managed by intervening in the system when necessary. Additionally, water leaks can be detected, and all the water supplied to the network can be delivered to the user.

In this study, the data from 4 pumping centers and 13 water storage tanks in Yozgat province were examined, and all processes from the water source to the water storage tanks and the water supply to people's use were controlled remotely with the SCADA system. Water leaks in the network were detected by analyzing the water level, pressure, pH, and temperature changes resulting from sediment formation, and water quality data was obtained. While the total physical and administrative lost water rate was 64.35% and physical water loss was 27.59% before the use of SCADA, it was observed that the water losses decreased by 51% with the use of SCADA. Thanks to the system, detected sediment formations are prevented quickly, and water is delivered to the user cleanly and healthily.

Keywords – Tank, Water Tank, Storage Tank, pH, Temperature, Pressure, Sediment



Derin Öğrenme ile Görüntülerden Bina Çıkarımı

Serdar EKİZ^{1*}, Uğur ACAR¹

¹Harita Mühendisliği / Fen Bilimleri Enstitüsü, Yıldız Teknik Üniversitesi, Türkiye

*serdar.ekiz@icloud.com

Özet – Görüntülerden binaların çıkarılması, özellikle afetler sonrası değişiklik tespitleri ve şehirselle yönetimin planlanması gibi çalışmalar için gereklidir. Yıllardır farklı metodolojiler denenmiş olsa da, son zamanlarda derin öğrenme yönteminin kullanılması, bu tür çalışmaların sayısını ve başarısını artırmıştır. Bu çalışmada da bahsedilen yöntem, 180 adet yüksek çözünürlüklü hava fotoğrafı içeren, Inria veri seti ile birlikte kullanılmıştır. Orijinalde 5000x5000 piksel boyutunda olan görüntüler, hatalı olanlar ayıklanarak ve ardından 512x512 piksel boyutuna indirgenerek, toplam görüntü sayısı 10900'e çıkartılmıştır. Bunların %70'i eğitim, %20'si doğrulama ve %10'u test adımları için ayrılmıştır. Görüntülerden bina çıkarımında başarılı sonuçlar sunan U-Net modeli temel alınmıştır. Modelin kodlayıcı kısmında, önceden ImageNet veri seti üzerinde eğitilmiş ResNet mimarisinin, ResNet-50, SE-ResNet-50, ResNeXt-50 ve SE-ResNeXt-50 gibi farklı versiyonları kullanılmıştır. Böylece, ResNet mimarisine eklenen yapıların performansını ve modellerin başarısını karşılaştırmak amaçlanmıştır. Modellerin eğitim adımıdaki başarıları birbirlerine çok yakın olmakla birlikte, en başarılı sonucu SE-ResNeXt kodlayıcılı model vermiş, bunu SE-ResNet, ResNeXt ve ResNet kodlayıcılı modeller takip etmiştir. Test adımı da benzer şekilde, sırasıyla Doğruluk, IoU ve F1 Puanı parametrelerinde SE-ResNeXt-50 kodlayıcılı model, %97.36, %85.02 ve %90.94 sonuçlarını, SE-ResNet-50 kodlayıcılı model, %97.28, %84.82 ve %90.82 sonuçlarını, ResNeXt-50 kodlayıcılı model, %97.22, %84.77 ve %90.78 sonuçlarını ve ResNet-50 kodlayıcılı model, %97.00, %84.50 ve %90.60 sonuçlarını elde etmiştir. Çalışmanın diğer amacı, en başarılı modelin genel kullanılabilirliğini test etmek olduğundan, deprem öncesi ve sonrası görüntüler kullanılarak model değerlendirilmiştir. Buna göre, model kullanılarak çeşitli tespitler gerçekleştirildiğinde, yüzeysel yorumlama yapılarak hızlı aksiyon alınabileceğini söylemek mümkündür.

Anahtar Kelimeler – Bina Tespiti, Derin Öğrenme, Inria Veri Seti, ResNet-50, U-Net



Comparative Analysis of Machine Learning Techniques for Hate Speech Identification on Social Media

Sajida Perveen*

¹Department of Computer Science, National Textile University, Faisalabad, Pakistan

*(Sajida.uaar@gmail.com) Email of the corresponding author

Abstract – Identification of hate speech on social media has become a critical challenge due to its detrimental impact on individuals and communities. Machine learning models have emerged as a potential solution to identify and mitigate hate speech. This research aims to conduct a comparative analysis among various Machine Learning (ML) techniques for hate speech identification, with the primary objective of identifying an optimal algorithmic combination that is efficient, simple, and easy to implement while yielding optimal results. Stochastic Gradient Descent (SGD), Decision tree (C4.5) and KNN models were implemented to accomplish the task. This study utilizes a labelled dataset of 49159 tweets to detect hate speech. Accuracy, precision, recall, and F1-score measures were incorporated to evaluate the models' performance, and how well these models can differentiate between instances of hate speech and those that are not. The Stochastic Gradient Descent (SGD) algorithm demonstrated remarkable accuracy (96%), precision (94%), and recall (96%) on the test dataset, highlighting its efficacy in hate speech detection compared to Decision Tree (DT) and K-Nearest Neighbors (KNN). These results pave the way for developing robust solutions, contributing to a safer and more inclusive digital environment.

Keywords – Machine Learning, Stochastic Gradient Descent (SGD), Decision tree (C4.5), K-Nearest Neighbors (KNN), Hate Speech, Offensive Language, NLP and Social media.



A Statistical Approach to Real-time Reproductive Rate Estimates of the COVID-19 Pandemic Based on the Statistical Powers in terms of Different Sample Sizes, Effect Sizes and Standard Deviations for Independent/Paired Samples t-test

Neslihan İYİT ^{*1} and Hediye Nagehan BÜYÜKBAYRAM ²

¹ Statistics Department / Faculty of Science, Selcuk University, Türkiye

² Biostatistics Department / Faculty of Veterinary Medicine, Selcuk University, Türkiye

^{*}(niyit@selcuk.edu.tr) Email of the corresponding author

Abstract – In this study, appropriate statistical powers for independent/paired samples t-test applications are tried to be determined using Monte Carlo simulation method in terms of different sample sizes, effect sizes and standard deviations using R-Studio program including Stats Package, Power calculations for one and two sample t-tests (pwr) library, and also Multivariate normal density and random deviates (mvtnorm) library.

In the empirical part of this study, based on the Monte Carlo simulation method, firstly “independent samples t-test” is performed for testing the averages of real-time reproductive rate estimates of the COVID-19 Pandemic data between African and European Continents including 45 countries. And then “paired samples t-test” is performed for testing the averages of real-time reproductive rate estimates of the COVID-19 Pandemic data between December 2021 and January 2022 as the paired observations of 31 different countries taken from African and European Continents individually.

As the principal results and major conclusions of this study, belonging to the independent samples t-test results, it is determined that the statistical power decreased as the standard deviation increased. The statistical power increased as the effect size widened at a fixed sample size and standard deviation value. Belonging to the paired samples t-test results, it is determined that the statistical power decreased as the significance level decreased. In addition, statistical powers for the paired samples t-test with fixed sample size and effect size are estimated to be higher than for the independent samples t-test. Also, statistical powers for the paired samples t-test with fixed sample size and effect size are found higher than for the independent samples t-test.

Keywords – Reproductive rate estimate of the COVID-19 Pandemic, Monte Carlo simulation, independent/paired samples t-test, statistical power, sample size, effect size



Statistical Modelling of Worldwide Share of Population with Cancer in the Aspect of Greenhouse Gas Emissions as Indicators of Climate Change by Generalized Linear Model Approach for Balanced Panel Data in Epidemiology

Neslihan İYİT

Statistics Department / Faculty of Science, Selcuk University, Turkiye

*(niyit@selcuk.edu.tr) Email of the corresponding author

Abstract – Greenhouse gas (GHG) emissions leading to global warming and climate change is an important topic in the world agenda for the United Nation’s Sustainable Development Goal 13 as taking urgent action to combat climate change. Therefore, a rapidly increasing relationship between the GHG emissions that causes warming in the global climate and worldwide cancer risk has come to the fore. Starting from this point, in this study, the relationships between “worldwide share of population with cancer” and “annual total carbon dioxide (CO₂), nitrous oxide (NO₂), and methane (CH₄) greenhouse gas emissions” data are statistically investigated using generalized linear model (GLM) approach having “Gaussian”, “inverse Gaussian”, and “Gamma” distributions under “log” and “identity” link functions belonging to 187 countries’ balanced panel data between 2000 and 2019. For this purpose, the response variable in this study is taken as “share of total population with any form of cancer”, and also the explanatory variables are taken as “annual total CO₂, NO₂, and CH₄ greenhouse gas emissions measured in tonnes per person” belonging to these countries in the world from 2000 to 2019. The GLM approach for panel data having inverse Gaussian distribution under the log-link function is determined as the best fitted model according to goodness-of-fit test statistics (GOF) as the “quasi-likelihood under independence model creation (QIC)” and the “corrected quasi-likelihood under independence model creation (QICC)” with the minimum values 231.871 and 121.519, respectively. As the principle results and major conclusion of this study, share of total population with any form of cancer belonging to the 187 countries from 2000 to 2019 increases $\exp(0.079)=1.0822$, $\exp(0.129)=1.1377$, and $\exp(0.041)=1.0419$ times by per capita increase in the CO₂, NO₂, and CH₄ greenhouse gas emissions measured in tonnes per person, respectively.

Keywords – Cancer, Greenhouse gas emissions, Climate change, Inverse Gaussian distribution, Gamma distribution, Gaussian distribution, Generalized linear model, Panel data.



Government Innovations and Economic growth: Evidence from Slovak Republic

Matej Boór*, Yuliya Petrenko ²

¹Department of Finance, University of Economics in Bratislava, Slovak Republic

² Department of Finance, University of Economics in Bratislava, Slovak Republic

*(matej.boor@euba.sk)

Abstract – Innovation is one of the key drivers of economic growth in many countries. Government innovation policy influences not only economic growth but also the behavior of economic agents, especially firms. Many studies have focused on estimating the relationship between innovations and Using covariance-correlation analysis, we estimate the relationship between economic growth and innovation (expressed as the share of government R&D expenditure in GDP) in the Slovak Republic over the period 1995-2022. We show that the correlation is both moderate and positive, representing the fact that innovation can boost economic growth in the Slovak Republic. The implication of the paper is that innovation can promotes economic growth in the short run, but not in the long run. The contribution is also the finding that, to a limited extent, government innovation policy mitigates cyclical fluctuations and acts as a stabilizer in the economy.

Keywords – economic growth, government innovation policy, innovations, R&D expenditures, correlation



USE OF INDIGENOUS PLANT EXTRACTS TO MANAGE ALMOND MOTH, *EPHESTIA CAUTELLA* IN STORED DATES

Nasrullah Khan¹ and Farid Asif Shaheen^{*1}

¹Department of Entomology, PMAS Arid Agriculture University, Rawalpindi, Pakistan

^{*}shaheen@uaar.edu.pk

Abstract – *Ephestia cautella* is a serious pest of dates both in the field as well as in storage with an average infestation rate of 16.8%. However, the fruit losses may reach to 100% if appropriate control measures are not applied. Plant extracts are the most biodegradable, less toxic to mammals and environment friendly and one of the best alternatives to chemicals to manage stored commodities. In this study, the suitability of indigenous plant extracts of olive leaves, bhang leaves, neem leaves, rhizomes of turmeric and seeds of ajwain were tested against *E. cautella*. The study parameters included number of egg per grain, number of holes per grain, percentage reduction of F1 adults emerged, percent inhibition rate, percent weight loss of grains and adult mortality. All the tested plant extracts were effective against *E. cautella* as compared to the control. The lowest number of 0.43 eggs was observed in dates treated with plant extract of *Azadirachta indica* compared with the control with 3.77 eggs. All plant extracts significantly reduced number of holes made by *E. cautella* as compared to the control, which provided the maximum 1.90 holes. The minimum number of F1 adults (3.07) of *E. cautella* was recorded in dates treated with plant extract of *A. indica*. The minimum weight loss of 4.51% was recorded in *A. indica* treated dates, which was statistically different from all other plant extracts. The maximum adult mortality 6.1, 8.53 and 10.0 after 24, 48 and 72 hours, respectively, was observed in the treated dates with extract of *A. indica*. The results of this study will lead to development of effective formulations of indigenous plant extracts as bio-pesticides against pests of stored dates to avoid nutritional, qualitative and quantitative losses.

Keywords – *Ephestia cautella*, stored dates, plant extracts, management, qualitative and quantitative losses.



An Analysis on Genetically Modified Organisms and Environmental Sustainability

Aysel Kekillioğlu*

Nevşehir HBV Uni. /Biology Dept., Türkiye

*(akekillioglu@nevsehir.edu.tr)

Abstract – Genetically modified organisms (GMO's) are organisms whose genetic materials have been modified in a way that is not possible in the natural process, unlike wild species existing in nature or domesticated species that humans have bred with traditional methods during thousands of years of agricultural and animal husbandry process. These organisms, whose genetic material has been changed using biotechnological methods, are also called "transgenic organisms". Since 1996, when the first transgenic agricultural product was produced and put on the market, there has been a significant increase in the production of GMO products and these products have started to take place in the markets to a significant extent. Soybean, corn, rapeseed, cotton and sugar beet make up 99% of the plants produced as organic foods. Besides, potatoes, tomatoes, rice, wheat, pumpkin, sunflower, peanuts, some fish species and papaya are produced as GMO. GMO cultivation is carried out in 27 countries. While the production of GMOs is increasing worldwide, production is decreasing in the European Union. Parallel to the serious increase in the production of GMO products around the world, these products have emerged with a change that will not occur naturally. Both public, political and scientific debates about the negative effects on human health and the environment, directly or indirectly, occupy the national and international public opinion intensively. In this context; the main purpose and content of this study, is to analyze the genetically modified organisms within the scope of environmental sustainability at national and international scale.

Keywords – GMO, Biotechnology Environment, Economy, Ecology, Sustainability Ethics



On Climate Change - Biodiversity Interaction Process and Turkey

Aysel Kekillioğlu*

Nevşehir HBV Uni. /Biology Dept., Türkiye

*(akekillioglu@nevsehir.edu.tr)

Abstract – The "Biosphere", called the living sphere, is facing a climate and biodiversity crisis in the current period. Changing climatic conditions significantly threaten the existence of rural and urban systems that are vulnerable to negative processes; It causes ecological, economic and social problems. All biodiversity elements of nature and ecosystems are of critical importance in increasing the climate resilience of rural and urban systems by acting as a barrier against ecological-environmental problems, including climate change. Ecological and nature-based solutions are seen as a valuable tool used to strengthen the resilience of ecosystems, protect biodiversity and, in parallel, produce solutions to a wide range of social challenges such as adaptation to climate change and disaster risk reduction. In this context; The content of the study aims to present an evaluation, especially within the scope of Turkey, by producing ecological solutions in terms of the interaction process of climate change, which is the most fundamental global problem of the current century and the coming centuries, with biodiversity and reducing the loss of biodiversity that we encounter in this process.

Keywords – Climate change, Biodiversity, Ecology, Turkey, Adaptation, Solution
