

Signal of Engineering and Natural Sciences Mühendislik ve Fen Bilimleri Dergisi

Volume 42 Number 1

Year 2024







EDITOR-IN-CHIEF

Ahmet Selim DALKILIÇ

Department of Mechanical Engineering, Yıldız Technical University, İstanbul, Turkey

ASSOCIATE EDITORS

İhsan KAYA

Department of Industrial Engineering, Yıldız Technical University, İstanbul, Turkey

Nergis ARSU

Department of Chemistry, Yıldız Technical University, İstanbul, Turkey

SECTION EDITORS

Ali ERDOĞMUŞ

Department of Chemistry, Yıldız Technical University, İstanbul, Turkey

Alper YILMAZ

Department of Bioengineering, Yıldız Technical University, İstanbul, Turkey

Azmi Seyhun KIPÇAK

Department of Chemical Engineering, Yıldız Technical University, İstanbul, Turkey

Banu MANSUROĞLU

Department of Moleculer Biology and Genetics, Yıldız Technical University, İstanbul, Turkey

Emel AKYOL

Department of Chemical Engineering, Yıldız Technical University, İstanbul, Turkey

Eyüp DEBİK

Department of Environmental Engineering, Yıldız Technical University, İstanbul, Turkey

Fatih AKYOL

Department of Metallurgical and Materials Engineering, Yıldız Technical University, İstanbul, Turkey

Gülhayat GÖLBAŞI ŞİMŞEK

Department of Statistics, Yıldız Technical University, İstanbul, Turkey

Hakan YILMAZER

Department of Metallurgy and Malterials Engineering, Yıldız Technical University, İstanbul, Turkey

Hasan KÖTEN

Department of Mechanical Engineering, İstanbul Medeniyet University, İstanbul, Turkey

Hayriye SUNDU PAMUK

Department of Physics, Kocaeli University, Kocaeli, Turkey

Mesut AKGÜN

Department of Chemical Engineering, Yıldız Technical University, İstanbul, Turkey

Metin TÜLÜ

Department of Chemistry, Yıldız Technical University, İstanbul, Turkey

Muhammet Kasım ŞENER

Department of Chemistry, Yıldız Technical University, İstanbul, Turkey

Müslüm ARICI

Department of Mechanical Engineering, Kocaeli University, Kocaeli, Turkey

Nader JAVANI

Department of Mechanical Engineering, Yıldız Technical University, İstanbul, Turkey

Osman Nuri UÇAN

Department of Electrical and Electronics Engineering, Altınbaş University, İstanbul, Turkey

Ömer Said TOKER

Department of Food Engineering, Yıldız Technical University, İstanbul, Turkey





Necmiye Özlem ÜNVERDİ

Department of Electronics and Communication Engineering, Yıldız Technical University, İstanbul, Turkey Selçuk ÇEBİ

Department of Industrial Engineering, Yıldız Technical University, İstanbul, Turkey

Sevil YÜCEL

Department of Bioengineering, Yıldız Technical University, İstanbul, Turkey

Vildan ÇETKİN

Department of Mathematics, Kocaeli University, Kocaeli, Turkey

Yasemin BUDAMA KILINÇ

Department of Bioengineering, Yıldız Technical University, İstanbul, Turkey

REGIONAL EDITORS

Abdelraheem Mahmoud ALY

South Valley University, Egypt

Abdullahi YUSUF

Federal University Dutse, Nigeria; Biruni University Istanbul, Turkey

Adem KILICMAN

Department of Mathematics, University Putra, Malaysia

Amin SHAHSAVAR

Kermanshah University of Technology, Iran

Chandramohan V.P.

National Institute of Technology Warangal, India

Gobinath RAVINDAN

SR University, India

Hijaz AHMAD

University of Engineering and Technology Peshawar, Khyber Pakhtunkhwa, Pakistan

Md. Sabir HOSSAIN

Chittagong University of Engineering and Technology, Bangladesh

Mohammad Reza SAFAEI

Department of Civil and Environmental Engineering, Florida International University, USA

Mostafa Safdari SHADLOO

Insa of Rouen, France

Muthu Poosan MOOPANAR

Department of Mathematics, National Institute of Technology, Warangal, India

Oscar CASTILLO

Tijuana Institute of Technology, Mathematics Division, Mexico

Pravin KATARE

Marathwada Mitra Mandal's College of Engineering, India

Ravindar KUMAR

Lovely Professional University, India

Sania QURESHI

Department of Basic Sciences and Related Studies, Mehran University of Engineering and Technology, Pakistan

Siamak HOSEINZADEH

Department of Planning, Design, and Technology of Architecture, University of Roma, Italy

Shengda ZENG

School of Mathematics and Statistics, Yulin Normal University, Yulin, China;

Faculty of Mathematics and Computer Science, Jagiellonian University in Krakow, Krakow, Poland

Taha M. RABABAH

Department of Nutrition and Food Technology, Jordan University of Science and Technology, Jordan





ADVISORY EDITORS

Bestami ÖZKAYA

Department of Civil Engineering, Yıldız Technical University, İstanbul, Turkey

Cengiz KAHRAMAN

Department of Industrial Engineering, İstanbul Technical University, İstanbul, Turkey

Erol TUTUMLUER

Department of Civil Engineering, University of Illinois Urbana-CHampaign, USA

Hari Mohan SRIVASTAVA

Department of Mathematics and Statistics, University of Victoria, Canada

Mohsen SHEIKHOLESLAMI

Babol Noshirvani University of Technology, Iran

Melike Elif BİLDİRİCİ

Department of Economics, Yıldız Technical University, İstanbul, Turkey

SECRETARY

Senol BiLGiN

Yıldız Technical University, İstanbul, Turkey

Somchai WONGWISES

Department of Mechanical Engineering, King Mongkut's University of Technology, Thonburi, Thailand

Umut Rifat TUZKAYA

Department of Industrial Engineering, Yıldız Technical University, İstanbul, Turkey

Zekai ŞEN

İstanbul Medipol University, İstanbul, Turkey

Zeynep IŞIK

Department Civil Engineering, Yıldız Technical University, İstanbul, Turkey

Abstracting and Indexing:

- Directory of Open Access Journals (DOAJ)
- EBSCO Host Online Research Databases
- Emerging Sources Citation Index (ESCI)
- Scopus

Journal Description: The journal is supported by Yıldız Technical University officially, and is a blind peer-reviewed free open-access journal, published bimontly (February-April-June-August-October-December).

Owner: Yıldız Technical University
Editor-in-Chief: Ahmet Selim Dalkiliç
Language of Publication: English
Frequency: Bimontly (6 issues per year)
Publication Type: Online e-version

Publisher: Kare Publishing





CONTENTS

Research Articles

- **1** An amalgamation of crisp and fuzzy quantile regression model
 Saima MUSTAFA, Hina BASHARAT, Ali AKGÜL, Mohsin SHAHZAD, Abdelhamied Farrag SAYED
- 11 A new classification-based approach for multi-focus image fusion Samet AYMAZ, Şeyma AYMAZ, Cemal KÖSE
- 26 Comparison of several anthropometric measurements and blood lipid-related indexes in metabolic-dysfunction associated fatty liver disease in adults: A cross-sectional study Hatice Merve BAYRAM, Raim İLİAZ, Arda ÖZTÜRKCAN, Bagnu DÜNDAR, Fatma Esra GÜNEŞ
- 37 Characterizations of tzitzeica curves using FLC frame Süleyman ŞENYURT, Kemal EREN, Kebire Hilal AYVACI
- 42 Phenolic composition, total antioxidant, antiradical and antimicrobial potential of endemic Glaucium Alakirensis

 Aysen ÖZCANDIR, Falah Saleh MOHAMMED, Mustafa SEVİNDİK, Candan AYKURT, Zeliha SELAMOĞLU, Hasan AKGÜL
- 49 Effect of graphene on the creep and stress relaxation behaviors of epoxynanocomposite in viscoplastic deformation regime

 Okan BAKBAK, Özgen ÇOLAK
- **Quasi subordinations for bi-univalent functions with symmetric conjugate points** F. Müge SAKAR, Melike AYDOĞAN, Zeliha KARAHÜSEYİN
- Investigation of friction behavior of TiO₂: Al₂O₃ composite coating formed on AA2024 alloy by micro-arc oxidation

 Emine BOYNUEĞRİ KAPLAN, Ebru Emine ŞÜKÜROĞLU
- 70 LYS semi-supported plate as a ductile end-diaphragm in steel girder bridges Morteza JAMSHIDI
- 82 Disjoint maximal arcs in projective planes of order 16

 Mustafa GEZEK

189

Deniz SEZGİN, Müge Sarı YILMAZ





Volume 42 Number 1 Year 2024 - February

- 89 Evaluating the campus climate factors using an interval type-2 fuzzy ANP Kemal Gökhan NALBANT, Şahika ÖZDEMİR, Yavuz ÖZDEMİR 99 Comparative analysis on real-time hand gesture and sign language recognition using convexity defects and YOLOv3 Md KHALİLUZZAMAN, Khadijatul KOBRA, Shabnaj LİAQAT, Shahidul Islam KHAN 116 Antioxidant and antimicrobial potentials of functional food Arum Dioscoridis Mansur Seymen SEĞMENOĞLU, Mustafa SEVİNDİK 121 Finite element contact analysis of the hollow cylindrical roller bearings Ramazan BAYRAK, Ahmet SAĞIRLI 130 Analysis of network useful life and cost-benefits for sustainable water management Salih YILMAZ, Mahmut FIRAT, Abdullah ATEŞ 141 Reliability analysis of shear strength equations of RC beams Sema ALACALI, Güray ARSLAN, Aydoğan İBİŞ 153 Investigation of the effect of polyvinyle alcohol fibers on mechanical properties of the high-strength concrete containing microsilica Hadi FAGHIHMALEKI, Hamidreza RASTKAR 164 A single-phase solid-state fault current limiter: Simulation and experimental study Baris KUCUKAYDIN, Evren ISEN, Oktay ARIKAN 177 Fractional derivative analysis of Asthma with the effect of environmental factors Rashid JAN, M. S. ZOBAER, Şuayip YÜZBAŞI, Attaullah, Muhammad JAWAD, Asif JAN
- 198 Discovery of new herbal anthelmintics from Artemisia Annua L. via in silico molecular docking and in vivo extract application

Xerogel of fast kinetics and high adsorption capacity for cationic dye removal

- Dilara KARAMAN, Oya GİRİŞGİN, Ahmet Onur GİRİŞGİN, Hulusi MALYER
- 211 Prediction of inelastic displacement ratios for evaluation of degrading SDOF systems: A comparison of the scaled conjugate gradient and Bayesian regularized artificial neural network modeling Muzaffer BÖREKÇİ, Burak AYDOĞAN



Technical Note

Kamran KHAN, Namatullah JAFFAR

306



Volume 42 Number 1 Year 2024 - February

225	New exact solutions for the Boiti-Leon-Manna-Pempinelli equation Rasime Kübra YILMAZ, Durmuş DAĞHAN
235	Machine learning classification models for the patients who have heart failure Şevval Tuğçe BADİK, Mutlu AKAR
245	Solutions of linear Fredholm integral equations with the three-step iteration method Lale CONA, Kadir ŞENGÜL
252	Pre-coagulated landfill leachate treatment by synergistic ultraviolet and electro- persulfate process Emine CAN-GÜVEN, Senem YAZICI GÜVENÇ, Gamze VARANK, Ahmet DEMİR
260	Pricing for longevity risk in long-term care insurance Çiğdem LAZOĞLU, Murat BÜYÜKYAZICI
273	Review Articles Microbial fuel cells in electricity generation with waste treatment: Alternative electron acceptors Elif DURNA PİŞKİN, Nevim GENÇ
289	Graphene-based materials for bone tissue engineering Büşra OKTAY, Esma AHLATCIOĞLU ÖZEROL, Cem Bülent ÜSTÜNDAĞ

Evaluation and composition of lignin content to enable the production of lignocellulosic

Mohammad SIDDIQUE, Suhail Ahmed SOOMRO, Shaheen AZIZ, Luqman Ali KHAN,

biomass pretreatment into sustainable biofuel: A review