

Signal of Engineering and Natural Sciences Mühendislik ve Fen Bilimleri Dergisi

Volume 42 Number 2 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





of

Volume 42 Number 2 Year 2024 - April

CONTENTS

399

407

networks at Türkiye

Aytaç PEKMEZCİ, Muhammet Oğuzhan YALÇIN

Zafer ÖZTÜRK, Halis BİLGİL, Sezer SORGUN

	Research Articles
313	On ψ-quantum fractional operators: Existence, uniqueness and Ulam-Hyers stability Norravich LİMPANUKORN, Idris AHMED, Muhammad Jamilu IBRAHİM
321	Comparison of feature-based sentence ranking methods for extractive summarization turkish news texts Ertürk ERDAĞI, Volkan TUNALI
335	Influence of burnishing process on surface integrity of inconel 718 fabricated by laser powder bed fusion additive manufacturing Mert KAYA, Nihal YAMAN, Emre TAŞCIOĞLU, Yusuf KAYNAK
344	Investigating the usability of kevlar and steel fibers as a hybrid in concrete pavements Erhan MOLA, Osman Ünsal BAYRAK, Fatih İrfan BAŞ, Halim Ferit BAYATA
356	Hand warmer types, silica and zeolite 4A as potential hand warmers F. Burcu ALP, Devrim BALKOSE
366	Examination of strength reduction factor in CFRP-confined columns under axial compression Aysun TEKİN ÖZER, Sema ALACALI
383	Low noise amplifier design for hidden wireless lan applications using band pass filter with geometric mean prototype element values Mehmet DUMAN
390	The adaptive extended kalman filter approach for the Lotka-Volterra model and application to economic variables Levent ÖZBEK, Volkan HACIOĞLU

Vector autoregressive clustering for redundancy analysis in air pollution monitoring

A new application of fractional glucose-insulin model and numerical solutions





- 414 Corrosion behavior of N80 tubing steel in the produced water

 Duygu ARSLAN VATANSEVER, Simge ARKAN OZDEMIR, Nurhan CANSEVER,

 Esra ILHAN SUNGUR
- 425 A comparative analysis of software-defined network controllers in terms of network forensics processes and capabilities

 Altuğ ÇİL, Mehmet DEMİRCİ
- 438 Anthocyanin and bioactivity properties of *berberis crategina* DC. In buffer system and apple juice: impact of temperature, time, and pH; Prediction using artificial neural network

Havva POLAT KAYA, Tuğba KOÇ, Lütfiye EKİCİ, Gülhan TOGA

450 Physiological, genetic and transcriptional characterization of *Fusarium graminearum* isolates

Tuğba TEKER, Syeda Anum KHALID, Emre YÖRÜK, Gülruh ALBAYRAK

459 1D fuzzy inverse logic method and its use in the design of thick reinforced concrete columns

Ertekin ÖZTEKİN

- 475 Experimental analysis of a shake table test of strip footing on two layered reinforced soil Litan DEBNATH
- 490 Investigation of stability and activity of quaternized zinc phthalocyanine photosensitizer with fused extended conjugation in vitro conditions

Yeşim KARAHAN, Gülşah GÜMRÜKÇÜ KÖSE, Gülnur KESER KARAOĞLAN, Dolunay ŞAKAR

The effect of hesperidin on neuron-specific enolase and oxidative damage in the preeclampsia model

Emel SERDAROĞLU KAŞIKÇI, Burcu ÇEVRELİ, Tayfun GÖZLER, Muhsin KONUK

- Modeling and analysis of schottky diode bridge and JFET based liénard oscillator circuit Kübra ÇAKIR, Reşat MUTLU
- Artificial neural network and multiple regression analysis for predicting abrasive water jet cutting of Al 7068 aerospace alloy

Fuat KARTAL, Arslan KAPTAN





- 529 Secure encryption over the ring $F_2 + uF_2 + vF_2 + uvF_3$ Neriman ŞOLT, Selda ÇALKAVUR, Murat GÜZELTEPE 534 A case study on lean occupational safety Mesut ULU, Semra BİRGÜN 549 Turkish coffee suppresses the progression of C6 glioma cells via the activation of apoptosis Melike ERSÖZ, Zeynep Mine COŞKUN YAZICI, Berfin ÜLGEN BAĞIRGAN, Hamit Baturalp SAYINBATUR, Aynur ACAR 555 A new modelling approach for air transportation: A case study for total number of air passengers per month Reşit ÇELİK, Hasan Aykut KARABOĞA, İbrahim DEMİR, Erdal GÜL 566 On a non-riemannian quantity of (α,β) -metrics Semail ÜLGEN 572 On a boundary value problem with symmetric double well potential and spectral parameter in the boundary condition Elif BAŞKAYA 578 Comparative performance analysis of epsilon-insensitive and pruning-based algorithms for sparse least squares support vector regression Ömer KARAL **Review Articles** 590 Revisiting the crack closure and its effect on fatigue life of components
- Ashutosh KUMAR, G.A. HARMAIN
- 600 Investigation of mechanical properties of Copper-Graphene composites in terms of production methods and additive ratios: A review Alper MUTLU, Uğur ÇAVDAR
- 614 **Technical Note**

Investigation of heavy metal concentrations and determination of estimated daily intake and health risk index infant formula and baby foods in Zahedan in 2020 Aram DOKHT KHATIBI, Maryam BAZZI, Davoud BALARAK