

VOLUME: 29 ISSUE: 1  
E-ISSN 2147-835X

FEBRUARY 2025  
<https://dergipark.org.tr/tr/pub/saufenbilder>

# SAKARYA UNIVERSITY JOURNAL OF SCIENCE



**SAKARYA**  
ÜNİVERSİTESİ

---

## The Owner on Behalf of Sakarya University

---

Prof. Dr. Hamza Al  
Sakarya University, Sakarya-Türkiye

---

### Editor in Chief

---

Ömer Tamer  
Department of Physics  
Sakarya University, Sakarya-Türkiye  
omertamer@sakarya.edu.tr

---

### Technical Editor

---

Hatice Vural  
Department of Electrical and Electronics Engineering  
Amasya University, Amasya-Türkiye  
hatice.vural@amasya.edu.tr

---

### Managing Editor

---

Hüseyin Yasin Uzunok  
Department of Physics  
Sakarya University, Sakarya-Türkiye  
hyuzunok@sakarya.edu.tr

---

### Layout Editor

---

Mehmet Emin Çolak  
Scientific Journals Coordinatorship  
Sakarya University  
Sakarya-Türkiye  
mehmetcolak@sakarya.edu.tr

Yakup Beris  
Scientific Journals Coordinatorship  
Sakarya University  
Sakarya-Türkiye  
yakupberis@sakarya.edu.tr

---

## **Publishing Manager**

---

Hüseyin Özkan Toplan  
Department of Metallurgical and Materials Engineering  
Sakarya University, Sakarya-Türkiye  
toplano@sakarya.edu.tr

---

## **Associate Editors**

---

İhsan Hakan Selvi  
Department of Information Systems Engineering  
Sakarya University, Sakarya-Türkiye  
ihselvi@sakarya.edu.tr

---

## **Editorial Board**

---

Asude Ateş  
Department of Environmental Sciences and  
Engineering  
Sakarya University  
Sakarya - Türkiye  
aates@sakarya.edu.tr

Bahadir Saygi  
Department of Nuclear Physics  
Ankara University  
Ankara - Türkiye  
bsaygi@ankara.edu.tr

Berrin Denizhan  
Department of Industrial Engineering  
Sakarya University  
Sakarya - Türkiye  
denizhan@sakarya.edu.tr

Hüseyin Aksoy  
Department of Biology  
Sakarya University  
Sakarya - Türkiye  
haksoy@sakarya.edu.tr

Mehmet Uysal  
Department of Metallurgical and  
Materials Engineering  
Sakarya University  
Sakarya - Türkiye  
mehmetu@sakarya.edu.tr

Muhammed Fatih Adak  
Department of Computer Science and Engineering  
Sakarya University  
Sakarya - Türkiye  
fatihadak@sakarya.edu.tr

Muhammet Hilmi Nişancı  
Department of Electrical and Electronics Engineering  
Sakarya University  
Sakarya - Türkiye  
nisanci@sakarya.edu.tr

Mustafa Gülfen  
Department Analytical Chemistry  
Sakarya University  
Sakarya - Türkiye  
mgulfen@sakarya.edu.tr

Osman Sönmez  
Department of Civil Engineering  
Sakarya University  
Sakarya - Türkiye  
osonmez@sakarya.edu.tr

Serap Coşansu  
Department of Food Engineering  
Sakarya University  
Sakarya - Türkiye  
scosansu@sakarya.edu.tr

Tahsin Turgay  
Department of Architecture  
Sakarya University  
Sakarya - Türkiye  
turgay@sakarya.edu.tr

Ufuk Durmaz  
Department of Mechanical Engineering  
Sakarya University  
Sakarya - Türkiye  
udurmaz@sakarya.edu.tr

---

## Section Editor (Civil Engineering)

---

Issa Al-Harthy  
Department of Civil and Architectural Engineering  
Sultan Qaboos University  
Oman  
aissa@squ.edu.om

Jamal Khatib  
Department of Civil Engineering  
University of Wolverhampton  
United Kingdom  
jmkhattib@wlv.ac.uk

Khalifa Al-Jabri  
Department of Civil and Architectural Engineering  
Sultan Qaboos University  
Oman  
aljabri@squ.edu.om

Hakan Alp  
Department of Geophysical Engineering  
İstanbul University-Cerrahpaşa  
İstanbul - Türkiye  
hakanalp@iuc.edu.tr

Tuba Tatar  
Department of Civil Engineering  
Sakarya University  
Sakarya - Türkiye  
ttatar@sakarya.edu.tr

Gökhan Dok  
Department of Civil Engineering  
Sakarya University of Applied Sciences  
Sakarya - Türkiye  
gokhandok@subu.edu.tr

---

## Section Editor (Chemistry)

---

Can Serkan Keskin  
Department of Chemistry  
Sakarya University  
Sakarya - Türkiye  
ckeskin@sakarya.edu.tr

Murat Tuna  
Department of Chemistry  
Sakarya University  
Sakarya - Türkiye  
tuna@sakarya.edu.tr

Nahit Gencer  
Department of Biochemistry  
Balıkesir University  
Sakarya - Türkiye  
ngencer@balikesir.edu.tr

---

## Section Editor (Biology)

---

Nazan Deniz Yön Ertug  
Department of Biology  
Sakarya University  
Sakarya - Türkiye  
nkoc@sakarya.edu.tr

Nihan Akinci Kenanoglu  
Department of Biology  
Çanakkale Onsekiz Mart University  
Çanakkale - Türkiye  
nakinci@comu.edu.tr

Oğuz Kurt  
Department of Biology  
Manisa Celal Bayar University  
Manise - Türkiye  
oguz.kurt@cbu.edu.tr

Sezgi Somuncu  
Department of Biology  
Sakarya University  
Sakarya - Türkiye  
sezgisomuncu@sakarya.edu.tr

Sezen Toksoy Köseoglu  
Department of Biology  
Sakarya University  
Sakarya - Türkiye  
sezentoksoy@sakarya.edu.tr

---

## Section Editor (Mathematics)

---

Murat Sarduvan  
Department of Mathematics  
Sakarya University  
Sakarya - Türkiye  
msarduvan@sakarya.edu.tr

Selma Özçağ  
Department of Mathematics  
Hacettepe University  
Ankara - Türkiye  
sozcag@hacettepe.edu.tr

Necati Olgun  
Department of Mathematics  
Gaziantep University  
Gaziantep - Türkiye  
olgun@gantep.edu.tr

Ali Demir  
Department of Mathematics  
Kocaeli University  
Kocaeli - Türkiye  
ademir@kocaeli.edu.tr

---

## Section Editor (Computer Science and Engineering)

---

Fahrettin Horasan  
Computer Science and Engineering  
Kirikkale University  
Kirikkale - Türkiye  
fhorasan@kku.edu.tr

Kevser Ovaz Akpinar  
Computer Science and Engineering  
Rochester Dubai Institute of Technology  
Dubai  
kxocad1@rit.edu

Muhammed Maruf Öztürk  
Computer Science and Engineering  
Süleyman Demirel University  
Isparta - Türkiye  
[muhammedozturk@sdu.edu.tr](mailto:muhammedozturk@sdu.edu.tr)

Mustafa Akpinar  
Computer Science and Engineering  
High Tech Collages  
United Arab Emirates  
[mustafakpinar@gmail.com](mailto:mustafakpinar@gmail.com)

---

## Section Editor (Physics)

---

Ceren Tayran  
Department Physics  
Gazi University  
Ankara - Türkiye  
[c.tayran@gazi.edu.tr](mailto:c.tayran@gazi.edu.tr)

---

## Section Editor (Industrial Engineering)

---

Feyza Gürbüz  
Department Industrial Engineering  
Erciyes University  
Kayseri - Türkiye  
[feyza@erciyes.edu.tr](mailto:feyza@erciyes.edu.tr)

Mehmet Emin Aydin  
Department Industrial Engineering  
University of The West of England Bristol  
England  
[mehmet.aydin@uwe.ac.uk,](mailto:mehmet.aydin@uwe.ac.uk)

Barış Yüce  
Department Industrial Engineering  
University of Exeter  
United Kingdom  
[b.yuce@exeter.ac.uk](mailto:b.yuce@exeter.ac.uk)

Benjamin Durakovic  
Department Industrial Engineering  
International University of Sarajevo  
Bosnia and Herzegovina  
[bdurakovic@ius.edu.ba](mailto:bdurakovic@ius.edu.ba)

---

## Section Editor (Mechanical Engineering)

---

Elif Eker Kahveci  
Department of Mechanical Engineering  
Sakarya University  
Sakarya - Türkiye  
[eeker@sakarya.edu.tr](mailto:eeker@sakarya.edu.tr)

Erman Aslan  
Department of Mechanical Engineering  
Kocaeli University  
Kocaeli - Türkiye  
[erman.aslan@kocaeli.edu.tr](mailto:erman.aslan@kocaeli.edu.tr)

Abderrahmane Benbrik  
Department of Mechanical Engineering  
M'hamed Bougara University  
Egypt  
[abderrahmane.benbrik@univ-boumerdes.dz](mailto:abderrahmane.benbrik@univ-boumerdes.dz)

Ali Cemal Benim  
Department of Mechanical Engineering  
Düsseldorf University of Applied Sciences  
Germany  
[alicemal@prof-benim.com](mailto:alicemal@prof-benim.com)

Shi-Chune Yao  
Department of Mechanical Engineering  
Carnegie Mellon University  
USA  
[sy0d@andrew.cmu.edu](mailto:sy0d@andrew.cmu.edu)

---

## **Section Editor (Environmental Sciences and Engineering)**

---

Senay Çetin Doğruparmak  
Department of Environmental Engineering  
Kocaeli University  
Kocaeli - Türkiye  
[senayc@kocaeli.edu.tr](mailto:senayc@kocaeli.edu.tr)

---

## **Section Editor (Food Science)**

---

Aslı Uçar  
Department of Food Sciences  
Ankara University  
Ankara - Türkiye  
[aucar@ankara.edu.tr](mailto:aucar@ankara.edu.tr)

---

## **Section Editor (Electrical and Electronics Engineering)**

---

Francesco De Paulis  
Department of Electrical and Electronics Engineering  
L'Aquila University  
Italy  
[francesco.depaulis@univaq.it](mailto:francesco.depaulis@univaq.it)

Rifki Terzioğlu  
Department of Electrical and Electronics Engineering  
Bolu Abant Izzet Baysal University  
Bolu - Türkiye  
[rifkiterzioğlu@ibu.edu.tr](mailto:rifkiterzioğlu@ibu.edu.tr)

---

## **Section Editor (Architecture)**

---

İsmail Hakkı Demir  
Department of Architecture  
Bursa Technical University  
Bursa - Türkiye  
ismail.demir@btu.edu.tr

---

## **Section Editor (Materials Science)**

---

Miraç Alaf  
Department Metallurgical and Materials Engineering  
Bilecik Şeyh Edebali University  
Bilecik - Türkiye  
mirac.alaf@bilecik.edu.tr

---

## **English Language Editor**

---

Seçkin Ari  
Department of Computer Engineering  
Sakarya University, Sakarya-Türkiye  
ari@sakarya.edu.tr

---

## **Editorial Assistant**

---

Evrim Yüksel  
Department of Environmental Engineering  
Institute of Sciences, Sakarya University  
Sakarya-Türkiye  
eyuksel@sakarya.edu.tr

---

## **Statistical Editor**

---

Önder Gökmen Yıldız  
Department of Mathematics  
Bilecik Şeyh Edebali University, Bilecik-Türkiye  
ogokmen.yildiz@bilecik.edu.tr

Indexing

Scopus®

DOAJ



# Contents

## Research Article

- 1 Offensive Language Detection in Turkish Language by Using NLP  
*Bekir Furkan Kesgin, Rüştü Murat Demirer* . . . . . 1-17
- 2 Comparison of Integral Equation Formulations for Stokesian Particulate Flow Simulations  
*Gökberk Kabacaoğlu* . . . . . 18-26
- 3 Duplex NiP/NiMo-(h)BN Co-Electroplating: Evaluation of Nanohardness, Room and High Temperature Wear Behaviors  
*Mert Aydin, Hasan Algül, Figen Algül, Sezer Tan, Ahmet Alp* . . . . . 27-38
- 4 Characterization of C/C Composites Produced Using 3D-preforms by CVD/CVI Method for Biomedical Applications  
*Cemalettin Çamyurdu, Şahin Ateş, Kerim Emre Öksüz, Ayşe Şükran Demirkiran* . . 39-49
- 5 Can Waste Heat of a Thermal Power Plant Be a Key For Absorption Cooling Systems?  
*Erdal Kacan, Erkan Kacan* . . . . . 50-70
- 6 Characterization of Olive Seed Powder Incorporated Low Density Polyethylene Composites  
*Sibel Tuna, İbrahim Sen* . . . . . 71-82
- 7 Urban Quality of Life from the Perspective of Industrial Migration: Bursa Inegol Huzur Neighbourhood  
*Miray Gür, Ezgi Koyun* . . . . . 83-99
- 8 The Impact of Hypericum perforatum L. as an Organic Free-Radical Scavenger in Biodiesel-Diesel Blends  
*Nalan Türköz Karakullukçu* . . . . . 100-112
- 9 Modeling and Experimental Analysis of Bias Voltage Effects on Hardness and Thickness of TiN Coatings Produced by PVD Process  
*Ahmet Uğur Kaya* . . . . . 113-124
- 10 Air-Exposure-Driven Color and Optical Variations in Hydroxyapatite Extracted from Fish Scales  
*H. Esma Okur* . . . . . 125-139