
Sakarya Üniversitesi Fen Bilimleri Enstitüsü Dergisi
(Sakarya University Journal of Science)
Cilt/Volume: 27 No/ Issue:2 Nisan/April 2023
Editör Kurulu/Editorial Boards

Owner

Hamza Al, Sakarya University (Turkey)

Publishing Manager

Hüseyin Özkan Toplan, Metallurgical and Materials Engineering, Sakarya University (Turkey)

Editor-in-Chief

Ömer Tamer, Physics, Sakarya University (Turkey)

Associate Editors

Ihsan Hakan Selvi, Information Systems Engineering, Sakarya University (Turkey)

Editors

Abderrahmane Benbrik, M'Hamed Bougara University at Boumerdes (Algeria)

Abdullah Oğuz Kızılcay, Computer Engineering, Zonguldak Bülent Ecevit University (Turkey)

Ali Cemal Benim, Faculty of Mechanical and Process Engineering, Duesseldorf University of Applied Sciences (Germany)

Ali Demir, Mathematics, Kocaeli University (Turkey)

Aligholi Niaei, Chemistry, Tabriz University (Iran)

Aslı Uçar, Faculty of Health Sciences, Nutrition and dietetics, Ankara University (Turkey)

Asude Ateş, Environmental Engineering, Sakarya University (Turkey)

Bahadır Saygı, Physic, Ege University (Turkey)

Barış Yüce, Engineering Management, Exeter University, UK

Belma Zengin Kurt, Chemistry, Bezmiâlem Vakıf University (Turkey)

Benjamin Durakovic, Department of Industrial Engineering, Bosnia International University of Sarajevo (Bosnia and Herzegovina)

Berrin Denizhan, Industrial Engineering, Sakarya University (Turkey)

Can Serkan Keskin, Chemistry, Sakarya University (Turkey)

Caner Erden, International Trade and Finance, Sakarya University of Applied Sciences (Turkey)

Ceren Tayran, Physic, Gazi University (Turkey)

Cansu Akbulut, Biology, Sakarya University (Turkey)

Ece Ümmü Deveci, Environmental Engineering, Niğde Ömer Halisdemir University (Turkey)

Edgar Perez-Esteve, Food Technology, Polytechnic University of Valencia (Spain)

Elif Ağcakoca, Civil Engineering, Sakarya Applied Science University (Turkey)

Elif Eker Kahveci, Mechanical Engineering, Sakarya University (Turkey)

Erman Aslan, Mechanical Engineering, Kocaeli University (Turkey)

Fahrettin Horasan, Computer Engineering, Kırıkkale University (Turkey)

Faruk Fırat Çalım, Civil Engineering, Alparslan Türkeş University (Turkey)

Feyza Gurbuz, Industrial Engineering, Erciyes University (Turkey)

Francesco de Paulis, Electrical and Electronics Engineering, University of L'Aquila (Italy)

Gökhan Dok, Civil Engineering, Sakarya Applied Science University (Turkey)

Grazyna S Martynkova, Nanotechnology Centre, VŠB-Technical University of Ostrava · Nanotechnology Centre (Czech Republic)

Grzegorz Jaworski, Physics, Heavy Ion Laboratory, University of Warsaw (Poland)

H. F. Nied, Department of Mechanical Engineering and Mechanics, Lehigh University (U.S.A.)

Hakan Alp, Geophysical Engineering, Cerrahpaşa University (Turkey)

Hatice Esen, Industrial Engineering, Kocaeli University (Turkey)

Hüseyin Aksoy, Biology, Sakarya University (Turkey)

Issa Al-Harty, Civil and Architectural Engineering, Sultan Qaboos University (Oman)

İbrahim Bahadır Başyığıt, Electrical and Electronics Engineering, Isparta Applied Science University (Turkey)

İsmail Hakkı Demir, Architecture, Sakarya University (Turkey)

Kamaruzzaman Sopian, Renewable Energy, Universiti Kebangsaan Malaysia (Malaysia)

Khalifa Al-Jabri, Civil and Architectural Engineering, Sultan Qaboos University (Oman)

Luan Thach Hoang, Mathematics, Texas Tech University (U.S.A.)

Luis A. Materon, Biology, The University of Texas Rio Grande Valley (USA)

M. Hilmi Nişancı, Electrical and Electronics Engineering, Sakarya University (Turkey)

Mahmud Tokur, Metallurgical and Materials Engineering, Sakarya University (Turkey)

Mehmet Emin Aydın, Industrial Engineering, University of Bedfordshire (UK)

Mehmet Uysal, Metallurgical and Materials Engineering, Sakarya University (Turkey)

Mesut Baran, Electrical and Computer Engineering, FREEDM Systems Center, North Carolina State University (U.S.A.)

Miraç Alaf, Metallurgical and Materials Engineering, Bilecik Şeyh Edebali University (Turkey)

Mohammad Sukri bin Mustapa, Faculty of Mechanical & Manufacturing Engineering, Universiti Tun Hussein Onn Malaysia (Malaysia)

Muhammed Fatih Adak, Computer Engineering, Sakarya University (Turkey)

Muhammed Maruf Öztürk, Computer Engineering, Süleyman Demirel University (Turkey)

Murat Güzeltepe, Mathematics, Sakarya University (Turkey)

Murat Sarduvan, Mathematics, Sakarya University (Turkey)

Murat Tuna, Chemistry, Sakarya University (Turkey)

Mustafa Akpınar, Software Engineering, Sakarya University (Turkey)

Mustafa Glfen, Chemistry, Sakarya University (Turkey)

Nahit Gencer, Chemistry, Balıkesir University (Turkey)

Nazan Deniz Yn Ertuğ, Biology, Sakarya University (Turkey)

Necati Olgun, Mathematics, Gaziantep University (Turkey)

Nihan Akıncı Kenanođlu, Biology, anakkale Onsekiz Mart University (Turkey)

Ođuz Kurt, Biology, Manisa Celal Bayar University (Turkey)

Ozan Erdin, Electrical and Electronics Engineering, Yıldız Technical University (Turkey)

Raja Mazuir Raja Ahsan Shah, Aerospace and Automotive Engineering, Coventry University (United Kingdom)

Rıfkı Terziođlu, Electrical and Electronics Engineering, Bolu Abant İzzet Baysal University (Turkey)

S.C. Yao, Mechanical Engineering, Carnegie Mellon University, PA (U.S.A.)

Sadık Kaka, Mechanical Engineering, TOBB ETU (Turkey)

Selma zađ, Mathematics, Hacettepe University (Turkey)

Seong Jin Park, Department of Mechanical Engineering, Pohang University of Science and Technology (Korea)

Serap Coşansu Akdemir, Food Engineering, Sakarya University (Turkey)

Syed Nasar Abbas, Food Engineering, Curtin University (Australia)

Şenay etin Dođruparmak, Environmental Engineering, Kocaeli University (Turkey)

Tahsin Turđay, Architecture, Sakarya University (Turkey)

Tauseef Aized, Mechanical Engineering, University of Engineering and Technology (Pakistan)

Tuba Tatar, Civil Engineering, Sakarya University (Turkey)

Tuđrul etinkaya, Metallurgical and Materials Engineering, Sakarya University (Turkey)

Ufuk Durmaz, Mechanical Engineering, Sakarya University (Turkey)

Urvir Singh, Electrical and Electronics Engineering, Schweitzer Engineering Laboratories: SEL Inc. (U.S.A.)

Guest Editor

Turgay ŞİŞMAN, Molecular Biology and Genetics, Atatrk University (Turkey)

Managing Editor

Hseyin Yasin UZUNOK, Physics, Sakarya University (Turkey)

Statistical Editor

nder Gkmen YILDIZ, Mathematics, Bilecik Şeyh Edebali University (Turkey)

English Language Editor

Seđkin Arı, Computer Engineering, Sakarya University (Turkey)

Technical Editor

Hatice Vural, Electrical and Electronics Engineering, Amasya University (Turkey)

Editorial Assistant

Ahmet Erhan Tanyeri, Sakarya University (Turkey)

Evrin Yüksel, Sakarya University (Turkey)
