|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |

|  |
| --- |
|  |
| **Sakarya Üniversitesi Fen Bilimleri Enstitüsü Dergisi****(Sakarya University Journal of Science)****Cilt/Volume: 26 No/ Issue:4 Ağustos/August 2022****Editör Kurulu/Editorial Boards** |
|  |

 |

**Owner**

Hamza Al, Sakarya University (Turkey)

**Publishing Manager**

Halit Yaşar, Mechanical Engineering, Sakarya University (Turkey)

**Editor-in-Chief**

Davut Avcı, Pyhsics, Sakarya University (Turkey)

**Associate Editors**

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

Ömer Tamer, Physics, Sakarya University (Turkey)

**Editors**

|  |
| --- |
| Abderrahmane Benbrik, M'Hamed Bougara University at Boumerdes (Algeria) |
| Abdullah Oğuz Kızılçay, 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 (İran)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, Sakary Apllied Science University (Turkey)Elif Eker Kahveci, Mechanical Engineering, Sakarya 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 Enginering, University of L'Aquila (Italy)Gökhan Dok, Civil Engineering, Sakary Apllied 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 Başyiğit, Electrical and Electronics Engineering, Isparta Apllied 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 Gülfen, Chemistry, Sakarya University (Turkey)Nahit Gencer, Chemistry, Balıkesir University (Turkey)Nazan Deniz Yön Ertuğ, Biology, Sakarya University (Turkey)Necati Olgun, Mathematics, Gaziantep University (Turkey)Nihan Akıncı Kenanoğlu, Biology, Çanakkale Onsekiz Mart University (Turkey)Oğuz Kurt, Biology, Manisa Celal Bayar University (Turkey)Ozan Erdinç, Electrical and Electronics Engineering, Yıldız Technical University (Turkey)Raja Mazuir Raja Ahsan Shah, Aerospace and Automotive Engineering, Coventry University (United Kingdom)Rıfkı Terzioğlu, Electrical and Electronics Engineering, Bolu Abant İzzet Baysal University (Turkey)S.C. Yao, Mechanical Engineering, Carnegie Mellon University, PA (U.S.A.)Sadık Kakaç, Mechanical Engineering, TOBB ETU (Turkey)Selma Özçağ, 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 Çetin Doğruparmak, Environmental Engineering, Kocaeli University (Turkey)Tahsin Turğay, Architecture, Sakarya University (Turkey)Tauseef Aized, Mechanical Engineering, University of Engineering and Technology (Pakistan)Tuba Tatar, Civil Engineering, Sakarya University (Turkey)Tuğrul Çetinkaya, Metallurgical and Materials Engineering, Sakarya University (Turkey)Ufuk Durmaz, Mechanical Engineering, Sakarya University (Turkey)Urvir Singh, Electrical and Electronics Enginering, Schweitzer Engineering Laboratories: SEL Inc. (U.S.A.) |
| **Guest Editor** Aysun Eğrisöğüt Tiryaki, Mechanical Engineering, Sakarya University (Turkey) Ertan Bol, Civil Engineering, Sakarya University (Turkey) Gülnur Arabacı, Chemistry, Sakarya Univerity (Turkey) Erman Aslan, Mechanical Engineering, Kocaeli University (Turkey) |

**English Language Editor**

Ömer Tamer, Physics, Sakarya University (Turkey)

**Editorial Assistant**

Ahmet Erhan Tanyeri, Sakarya University (Turkey)