

Black Sea Journal of Engineering and Science Volume 7 | Issue 1





ISSN: 2619 - 8991



BLACK SEA JOURNAL OF ENGINEERING AND SCIENCE (BSJ ENGIN SCI)



Black Sea Journal of Engineering and Science (BSJ Eng Sci) is a double-blind peer-reviewed, open-access international journal published electronically 6 times (January, March, May, July, September, and November) in a year by since January 2018. It publishes, in English and Turkish, full-length original research articles, innovative papers, conference papers, reviews, mini-reviews, rapid communications or technical note on advances in a wide range of scientific disciplines from all fields of engineering and science and from any source.

ISSN 2619 - 8991 Phone: +90 362 408 25 15 Fax: +90 362 408 25 15 Email: bsjsci@blackseapublishers.com Web site: http://dergipark.gov.tr/bsengineering Sort of publication: Periodically 6 times (January, March, May, July, September, and November) in a year Publication date and place: January 15, 2024 - Samsun, TURKEY Publishing kind: Electronically

<u>OWNER</u>

Assoc. Prof. Dr. Uğur ŞEN

DIRECTOR IN CHARGE

Prof. Dr. Hasan ÖNDER

EDITORIAL DECLERATION

Dear authors and readers,

First of all, we would like to thank you for being our travel companion by writing, evaluating, and reading us about this broadcasting life we started six years ago. With these thoughts, we are especially thankful for researchers and academicians honoring with the articles, valuable scientists involved in editorial boards, and reviewers for their contributions to the evaluation processes through their opinions/ideas/contributions/criticisms. With this article, we wanted to inform you, our valuable stakeholders, about the development of The Black Sea Journal of Engineering and Science (BSJ Eng Sci). The statistics of the BSJ Eng Sci for the last six years are given below. Hope you will be with us in future issues.

Year	Articles	Cites	Cite Index*	CNA	CNC	CCI
2018	20	1	0.05	20	1	0.05
2019	22	10	0.45	42	11	0.26
2020	29	40	1.38	71	51	0.72
2021	32	55	1.72	103	106	1.03
2022	24	95	3.96	127	201	1.58
2023	78	109	1.40	205	310	1.51

CNA= cumulative number of articles, CNC= cumulative number of cite, CCI= cumulative cite index

*according to Scholar Google

Rejection rate:

- 2020: 09%
- 2021: 18%
- 2022: 25%
- 2023: 14%

Average review time (days): 53

Average time from send to publish (days): 92

EDITOR BOARDS

EDITOR IN CHIEF

Prof. Dr. Hasan ÖNDER, Ondokuz Mayis University, TÜRKİYE

Assoc. Prof. Dr. Uğur ŞEN, Ondokuz, Mayis University, TÜRKİYE

SECTION EDITORS*

Prof. Dr. Ahmet UYANIK, Section Editor of Chemistry, Ondokuz Mayis University, TÜRKİYE

Prof. Dr. Amila Sandaruwan RATNAYAKE, Section Editor of Geological Engineering, Uva Wellassa University, SRI LANKA

Prof. Dr. Berna KILIÇ, Section Editor of Fisheries Engineering, Ege University, TÜRKİYE

Prof. Dr. Çiğdem TAKMA, Section Editor of Statistics, Ege University, TÜRKİYE

Prof. Dr. Ertan BUYRUK, Section Editor of Mechanical Engineering, Sivas Cumhuriyet University, TÜRKİYE

Prof. Dr. Fahrul Zaman HUYOP, Section Editor of Biology, Universiti Teknologi Malaysia, MALAYSIA

Prof. Dr. Fauziatul FAJAROH, Section Editor of Chemical Engineering, Universitas Negeri Malang, INDONESIA

Prof. Dr. Fuad ALHAJOMAR, Section Editor of Electrical and Electronics Engineering, University of South Wales, UNITED KINGDOM

Prof. Dr. Gökhan CİVELEKOĞLU, Section Editor of Environmental Engineering, Akdeniz University, TÜRKİYE

Prof. Dr. Hasan TANAK, Section Editor of Physics, Amasya University, TÜRKİYE

Prof. Dr. Hasan TEMİZ, Section Editor of Food Engineering, Ondokuz Mayis University, TÜRKİYE

Prof. Dr. Hojjat SADEGHİ-ALİABADİ, Section Editor of Chemistry, Isfahan University, IRAN

Prof. Dr. İbrahim Özgür DENEME, Section Editor of Civil Engineering, Aksaray University, TÜRKİYE

Prof. Dr. İbrahim UĞUR, Section Editor of Mining Engineering, Süleyman Demirel University, TÜRKİYE

Prof. Dr. Jamrun EBBAH, Section Editor of Fisheries Engineering, Mindanao State University, PHILIPPINES

Prof. Dr. Messaoud SAIDANI, Section Editor of Civil Engineering, Coventry University, UNITED KINGDOM

Prof. Dr. Perarasu THANGAVELU, Section Editor of Aerospace Engineering, Anna University, INDIA

Prof. Dr. Sema PALAMUTCU, Section Editor of Textile Engineering, Pamukkale University, TÜRKİYE

Prof. Dr. Ümit Cafer YILDIZ, Section Editor of Forest Engineering, Karadeniz Technical University, TÜRKİYE

Assoc. Prof. Dr. Belgin KARABACAKOĞLU, Section Editor of Chemical Engineering, Eskişehir Osmangazi University, TÜRKİYE

Assoc. Prof. Dr. Bülent BOSTANCI, Section Editor of Geomatics Engineering, Erciyes University, TÜRKİYE

Assoc. Prof. Dr. Edit MİKÓ, Section Editor of Agricultural Engineering, University of Szeged, HUNGARY

Assoc. Prof. Dr. Ergün EKİCİ, Section Editor of Industrial Engineering, Çanakkale Onsekiz Mart University, TÜRKİYE

Assoc. Prof. Dr. Helal Uddin MOLLA, Section Editor of Physics, Rajshahi University of Engineering and Technology, BANGLADESH

Assoc. Prof. Dr. Kadyrbay CHEKİROV, Section Editor of Biology, Kyrgyz Turkish Manas University, KYRGYZSTAN

Assoc. Prof. Dr. Mehmet EBEOĞLUGİL, Section Editor of Metallurgical and Materials Engineering, Dokuz Eylül University, TÜRKİYE

Assoc. Prof. Dr. Nilüfer YURTAY, Section Editor of Computer Engineering, Sakarya University, TÜRKİYE

Assoc. Prof. Dr. Özgür Hakan AYDOĞMUŞ, Section Editor of Mathematics, Social Sciences University of Ankara, TÜRKİYE

Assoc. Prof. Dr. Rita ISMAİLOVA, Section Editor of Computer Engineering, Kyrgyz - Turkish Manas University, KYRGYZSTAN

Assoc. Prof. Dr. Samia Chehbi GAMOURA, Section Editor of Statistics, Strasbourg University, FRANCE

Assoc. Prof. Dr. Silvio DE OLİVEİRA JUNIOR, Section Editor of Mechanical Engineering, University of São Paulo, BRAZIL

Assoc. Prof. Dr. Sinan AKISKA, Section Editor of Geological Engineering, Ankara University, TÜRKİYE

Asst. Prof. Dr. Abdul JABBAR, Section Editor of Textile Engineering, National Textile University, PAKISTAN

Asst. Prof. Dr. Arsheed Ahmad RATHER, Section Editor of Forest Engineering, Annamalai University, INDIA

Asst. Prof. Dr. Ezenwanyi OCHULOR, Section Editor of Metallurgical and Materials Engineering, University Of Lagos, NİGERİA

Asst. Prof. Dr. Francis INEGBEDION, Section Editor of Industrial Engineering, University of Benin, NIGERIA

Asst. Prof. Dr. Haniyeh RASOULİ PİROUZİAN, Section Editor of Food Engineering, Tabriz University, IRAN

Asst. Prof. Dr. Jun-wei LİM, Section Editor of Environmental Engineering, Universiti Teknologi Petronas, MALAYSIA

Asst. Prof. Dr. Mehmet GÜÇYETMEZ, Section Editor of Electrical and Electronics Engineering, Kırşehir Ahi Evran University, TÜRKİYE

Asst. Prof. Dr. Melahat CİHAN, Section Editor of Aerospace Engineering, Samsun University, TÜRKİYE

Asst. Prof. Dr. Muhammad GULİSTAN, Section Editor of Mathematics, Hazara University, PAKISTAN

Asst. Prof. Dr. Sedat KARADAVUT, Section Editor of Agricultural Engineering, Trakya University, TÜRKİYE

Asst. Prof. Dr. Seyedeh Narges SADATİ, Section Editor of Mining Engineering, University of Mohaghegh Ardabili, IRAN

Asst. Prof. Dr. Xinyi WANG, Section Editor of Geomatics Engineering, Henan Polytechnic University, CHINA

* The ranking is arranged alphabetically within the academic title

EDITORIAL - ADVISORY BOARD*

Prof. Dr. Aglaia (Litsa) LIOPA-TSAKALIDI, Institute of Western Greece, GREECE Prof. Dr. Ercan EFE, Kahramanmaras Sutcu Imam University, TÜRKİYE Prof. Dr. Mohammad Masood TARIQ, University of Balochistan, PAKISTAN Prof. Dr. Mustafa Çağatay TUFAN, Ondokuz Mayis University, TÜRKİYE Prof. Dr. Özkan GÖRGÜLÜ, Ahi Evran University, TÜRKİYE Assoc. Prof. Dr. Taner TUNÇ, Ondokuz Mayis University, TÜRKİYE Asst. Prof. Dr. Emil OMURZAK, Kyrgyz-Turkish Manas University, KYRGYZSTAN Asst. Prof. Dr. Yılmaz KAYA, Ondokuz Mayis University, TÜRKİYE * The ranking is arranged alphabetically within the academic title

STATISTIC EDITOR

Prof. Dr. Mehmet TOPAL, Kastamonu University, TÜRKİYE

ENGLISH EDITOR

Asst. Prof. Dr. Betül ÖZCAN DOST, Ondokuz Mayis University, TÜRKİYE

TURKISH EDITOR

Prof. Dr. Serkan ŞEN, Ondokuz Mayis University, TÜRKİYE

REVIEWERS OF THE ISSUE*

Prof. Dr. Abbas GHASEMIZAD, University of Guilan, Department of Physics, Nuclear Energy Systems, IRAN

Prof. Dr. Hasan KORKMAZ, Ondokuz Mayıs University, Department of Biology, Ecology, TÜRKİYE

Prof. Dr. Nebile DAĞLIOĞLU, Department of Forensic Toxicology, Cukurova University, Türkiye Prof. Dr. Recep Gökhan TÜRECİ, Kırıkkale University, Department of Electronic and Automation, Nuclear Physics, TÜRKİYE

Prof. Dr. Salih YAZICIOĞLU, Department of Civil Engineering, Gazi University, TÜRKİYE

Prof. Dr. Şebnem ÖZÜPEK, Boğaziçi University, Department of Machinery, Finite Element Analysis, TÜRKİYE

Assoc. Prof. Dr. Ahmet TURAN, Yeditepe University, Department of Materials Science and Nanotechnology Engineering, Materials Science, TÜRKİYE

Assoc. Prof. Dr. Burcu ORALHAN, Nuh Naci Yazgan University, Department of Business Administration, Multiple Criteria Decision Making, TÜRKİYE

Assoc. Prof. Dr. Demet EROL, Gazi University, Department of City and Regional Planning, Urban Planning and Health, TÜRKİYE

Assoc. Prof. Dr. Edip ÇETKİN, Department of Mechanical Engineering, Batman University, TÜRKİYE

Assoc. Prof. Dr. Fatih KAR, Department of Biochemistry, Kütahya Health Sciences University, TÜRKİYE

Assoc. Prof. Dr. Hasan ARSLANOĞLU, Çanakkale Onsekiz Mart University, Department of Chemical Engineering, Polymer Science and Technologies, TÜRKİYE

Assoc. Prof. Dr. Kazım YILDIZ, Marmara University, Department of Computer Engineering, Data Mining and Knowledge Discovery, TÜRKİYE

Assoc. Prof. Dr. Mehmet Seref SÖNMEZ, Istanbul Technical University, Department of Metallurgical and Materials Engineering, Materials Science and Technologies, TÜRKİYE

Assist. Prof. Dr. Ayşe Nilgün KAYADELEN, Kütahya Dumlupınar University, Department of Management Information Systems, Management Information Systems, TÜRKİYE

Assist. Prof. Dr. Bahadır DEMİREL, Department of Agricultural Machinery, Erciyes University, TÜRKİYE

Assist. Prof. Dr. Furkan GÜNDAY, Giresun University, Department of Civil Engineering, Structural Engineering, TÜRKİYE

Assist. Prof. Dr. Gökhan TIMAÇ, Department of Mechanical Engineering, Yalova University, TÜRKİYE

Assist. Prof. Dr. Hülya YALÇIN, Istanbul Technical University, Department of Machinery, Computer Vision, TÜRKİYE

Assist. Prof. Dr. Hüseyin BAYKAL, Recep Tayyip Erdoğan University, Department of Herbal and Animal Production, Medicinal and Aromatic Plants, TÜRKİYE

Assist. Prof. Dr. Hüseyin SAUK, Department of Agricultural Machinery, Ondokuz Mayıs University, TÜRKİYE

Assist. Prof. Dr. İpek ÇETINBAŞ, Eskişehir Osmangazi University, Department of Electrical and Electronics Engineering, Electrical Engineering, TÜRKİYE

Assist. Prof. Dr. Murat ALKAN, Dokuz Eylül University, Department of Metallurgical and Materials Engineering, Physics, TÜRKİYE

Assist. Prof. Dr. Nurullah ÖKSÜZER, Department of Civil Engineering, Karadeniz Technical University, TÜRKİYE

Assist. Prof. Dr. Orhan ECEMİŞ, Gaziantep University, Department of Computer Technologies, Quantitative Decision Methods, TÜRKİYE

Assist. Prof. Dr. Rukiye KOÇKAR TUĞLA, Department of Civil Engineering, Kastamonu University, TÜRKİYE

Assist. Prof. Dr. Seda BİCE, Tokat Gaziosmanpaşa University, Department of Soil Sciences and Plant Nutrition, Plant Nutrition, TÜRKİYE

Assist. Prof. Dr. Yasin KIRELLİ, Kütahya Dumlupınar University, Department of Information Systems and Technologies, Multiple Criteria Decision Making, TÜRKİYE

Assist. Prof. Dr. Zehra Gülten YALÇIN, Çankırı Karatekin University, Department of Chemical Engineering, Composite and Hybrid Materials, TÜRKİYE

Dr. Abdurrahman BAYRAK, Hacettepe University, Department of Computer Engineering, Control Systems, TÜRKİYE

Dr. Ebru KARNEZ, Çukurova University, Department of Crop and Animal Production, Plant Nutrition and Soil Fertility, TÜRKİYE

Dr. Erkin ARSLAN, Middle East Technical University, Department of Electrical and Electronics Engineering, Control Systems, TÜRKİYE

* The ranking is arranged alphabetically within the academic title

Volume 7, Issue 1 (2024)

Table of Contents

Research Articles
1. YENİ BİR ÇOK KRİTERLİ KARAR VERME YAKLAŞIMI "OLABİLİRLİK DEĞERLENDİRME
SİSTEMİ": KATILIM FONLARI ÜZERİNE BİR UYGULAMA
Furkan GÖKTAŞ, Fatih GÜÇLÜ1-8
2. RADIATIVE TRANSFER EQUATION SOLUTION FOR MANY SCATTERING TYPES
Dilek AYDIN, Halide KÖKLÜ9-15
3. EFFECT OF CAF2 ADDITIONS ON THE YIELD OF AZ63 MAGNESIUM CHIPS DURING
REMELTING
Pınar YÖRÜK, Mertol GÖKELMA16-20
4. APPLICATION OF MULTI-CRITERIA DECISION MAKING METHODS FOR MENU
SELECTION
Semih Latif İPEK, Dilek GÖKTÜRK21-30
5. PRODUCTION OF CHEMICALLY MODIFIED SHEAR THICKENING FLUIDS AND
INVESTIGATION OF THEIR RHEOLOGICAL PROPERTIES
Murat Yavuz SOLMAZ, Cenk YANEN, Celal KISTAK, Ercan AYDOĞMUŞ
6. KENDİNDEN TAHRİKLİ MİKRO ORGANİZMALARIN NEWTONYEN AKIŞKAN İÇİNDEKİ
HAREKETİNİN SAYISAL MODELLENMESİ
Hatice MERCAN, Tufan Tuna KÖSELER
7. ANATOMICAL, ECOLOGICAL AND TRICHOME MICRO-MORPHOLOGICAL FEATURES
OF TWO MARRUBIUM L.TAXA (LAMIACEAE)
Kamer Volkan KOÇAK, Nezahat KANDEMIR43-54
8. SUGGESTIONS FOR URBAN TRANSFORMATION THROUGH TWO APPLICATIONS IN
ANKARA, THE CAPITAL OF TÜRKİYE
Varol KOÇ
9. DESIGN AND OPTIMIZATION OF VOLTAGE MODE PWM CONTROL OF DC-DC BUCK
CONVERTER WITH A PI-LEAD COMPENSATOR USING THE SIMULATED ANNEALING
ALGORITHM
Kübra DOĞAN, Bülent DAĞ72-88
10. PI-PD CONTROLLER DESIGN BASED ON WEIGHTED GEOMETRIC CENTER METHOD
FOR TIME DELAY ACTIVE SUSPENSION SYSTEMS
Abdullah TURAN, Hüseyin AGGUMUS, Mahmut DASKIN
11. AN INTEGRATED OVERVIEW OF BLASTING DAMAGE CRITERIA FOR ENGINEERING
STRUCTURES
Davut YILMAZ96-108
12. VALORISATION OF THE EFFECT OF WASTE ALUMINUM SAWDUST ON CONCRETE:
DURABILITY CHARACTERISTICS AND ENVIRONMENTAL IMPACTS
Tuba DEMİR, Bahar DEMİREL, Melek ÖZTÜRK109-120

13.	EFFECT	OF	DIFFERENT	STEP-LAP	JOINTS	ON	THE	NATURAL	FREQUENCIES	OF
DIFFER	ENT AD	HESI\	/ELY BONDE	D METALLI	C MATER	RIALS	: A NI	JMERICAL S	TUDY	
Ali İhsa	ın KAYA					•••••				128
14.	FALSE P	OSIT	IVES IN LUM	INAL TEST	ING					
Yakup	GÜLEKÇİ,	, Fatı	ma ÇAVUŞ Y	ONAR						138
Review	<u>/S</u>									

15. DOĞAL OLARAK BULUNAN KIRMIZI PİGMENT LİKOPEN VE SAĞLIĞA FAYDALI ETKİLERİ ÜZERİNE SİSTEMATİK BİR YOLCULUK

Güney AKINOĞLU, Arzu ERDAL13	9-154
------------------------------	-------