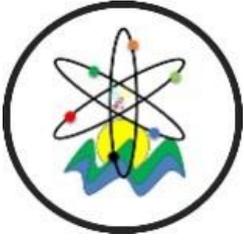


Black Sea Journal of Engineering and Science





**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 4 times (January, April, July and October) 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 4 times (January, April, July and October) in a year

Publication date and place: April 01, 2022 - Samsun, TURKEY

Publishing kind: Electronically

OWNER

Assoc. Prof. Uğur ŞEN

DIRECTOR IN CHARGE

Prof. Dr. Hasan ÖNDER

EDITOR BOARDS

EDITOR IN CHIEF

Prof. Dr. Hasan ÖNDER, Ondokuz Mayıs University, TURKEY

Assoc. Prof. Uğur ŞEN, Ondokuz, Mayıs University, TURKEY

SECTION EDITORS*

Prof. Dr. Erkan YALÇIN, Ondokuz Mayıs University, TURKEY

Prof. Dr. Hasan TANAK, Amasya University, TURKEY

Prof. Dr. Hasan TEMİZ, Ondokuz Mayıs University, TURKEY

Prof. Dr. Mustafa ŞAHİN, Kahramanmaraş Sutcu Imam University, TURKEY

Prof. Dr. Berna KILIÇ, Ege University, TURKEY

Assoc. Prof. Dr. Kadyrbay CHEKİROV, Kyrgyz Turkish Manas University, KYRGYZSTAN

Assoc. Prof. Dr. Özgür Hakan AYDOĞMUŞ, Social Sciences University of Ankara, TURKEY

Assoc. Prof. Dr. Roswanira Binti AB WAHAB, University of Technology, MALAYSIA

Asst. Prof. Dr. Sedat KARADAVUT, Trakya University, TURKEY

* 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, Kahramanmaraş Sutcu Imam University, TURKEY

Prof. Dr. Mohammad Masood TARIQ, University of Balochistan, PAKISTAN

Prof. Dr. Mustafa Çağatay TUFAN, Ondokuz Mayıs University, TURKEY

Prof. Dr. Özkan GÖRGÜLÜ, Ahi Evran University, TURKEY

Assoc. Prof. Dr. Taner TUNÇ, Ondokuz Mayıs University, TURKEY

Asst. Prof. Dr. Emil OMURZAK, Kyrgyz-Turkish Manas University, KYRGYZSTAN

Asst. Prof. Dr. Yılmaz KAYA, Ondokuz Mayıs University, TURKEY

* The ranking is arranged alphabetically within the academic title

STATISTIC EDITOR

Prof. Dr. Mehmet TOPAL, Kastamonu University, Turkey

ENGLISH EDITOR

Asst. Prof. Dr. Betül ÖZCAN DOST, Ondokuz Mayıs University, TURKEY

TURKISH EDITOR

Prof. Dr. Serkan ŞEN, Ondokuz Mayıs University, TURKEY

REVIEWERS OF THE ISSUE*

Prof. Dr. Erhan AKÇA, Adıyaman University, TURKEY

Prof. Dr. İbrahim KELES, Samsun University, TURKEY

Prof. Dr. Mehmet TOPAL, Amasya University, TURKEY

Assoc. Prof. Dr. Sahver Ege HİŞMİOĞULLARI, Balıkesir University, TURKEY

Dr. Ahmet BÜYÜKEKE, Adana Alparslan Türkeş Sci and Tech University, TURKEY

Dr. Aslıhan CANTÜRK, Karadeniz Agricultural Research Institute, TURKEY

Dr. Dickson David OLODU, Benson Idahosa University, NIGERIA

Dr. Esra YAVUZ, Şırnak University, TURKEY

Dr. Selime Semra EROL, Düzce University, TURKEY

Dr. Sevtap TIRINK, Iğdır University, TURKEY

* The ranking is arranged alphabetically within the academic title

Table of Contents

Research Article

1. MOLECULAR CHARACTERIZATION OF GRAM NEGATIVE ISOLATED FROM WALNUT (Juglans regia L.) RHIZOSPHERE 

(Ceviz (juglans regia l.) rizosferinden izole edilen gram negatifin moleküler karakterizasyonu)

Belgin ERDEM, Elif SEVİM, Ali SEVİM.....54-61

2. DETERMINATION OF NITRATE, NITRITE AND AMMONIUM IN WATER COLLECTED FROM RUMINANT FARMS IN KIRIKKALE PROVINCE 

(Kırıkkale ilinde ruminant işletmelerinden alınan sulara nitrat, nitrit ve amonyum seviyelerinin belirlenmesi)

Hatice AKAY SARIKAYA, Ebru YILDIRIM, Emine BAYDAN.....62-67

3. EFFECT OF VARYING PERCENTAGE INCREASE IN REINFORCEMENT ON SOME MECHANICAL PROPERTIES OF DIE CAST ALUMINUM ALLOY COMPOSITES 

(Takviyede değişen yüzdelik artışın döküm alüminyum alaşımlı kompozitlerin bazı mekanik özelliklerine etkisi)

Francis INEBEDION, Precious Okwuoma AIBUEKU, Bright Omokaro OSAMWONYI.....68-70

4. MULTIDIMENSIONAL SCALING ANALYSIS AND AN APPLICATION 

(Çok boyutlu ölçekleme analizi ve bir uygulama)

Gülşah KEKLİK, Mustafa ŞAHİN.....71-80

Review Article

5. EVALUATION ON THE USAGE AND FUTURE OF 5G TECHNOLOGIES IN SMART AGRICULTURAL SYSTEMS 

(5G teknolojilerinin akıllı tarım sistemlerinde kullanımı ve geleceği üzerine değerlendirme)

Dilek ÇAKIR, Mehmet Serhat ODABAŞ, Gökhan KAYHAN, Recai OKTAŞ.....81-86