

ISSN: 2667-4203

ESKİŐEHİR TECHNICAL UNIVERSITY JOURNAL OF SCIENCE AND TECHNOLOGY
C– Life Sciences and Biotechnology

ESKİŐEHİR TEKNİK ÜNİVERSİTESİ BİLİM VE TEKNOLOJİ DERGİSİ
C – Yaşam Bilimleri ve Biyoteknoloji

Volume/Cilt 8 Number/Sayı 2 - 2019



Volume: 8 / Number: 2 / 2019

Eskiőehir Technical University Journal of Science and Technology C – Life Sciences and Biotechnology (formerly Anadolu University Journal of Science and Technology C – Life Sciences and Biotechnology) is an **peer-reviewed** and **refereed international journal** by Eskiőehir Technical University. Since 2010, it has been regularly published and distributed biannually and it has been published biannually and **electronically only since 2016**.

Manuscripts submitted for publication are analyzed in terms of scientific quality, ethics and research methods in terms of its compliance by the Editorial Board representatives of the relevant areas. Then, the abstracts of the appropriate articles are sent to two different referees with a well-known in scientific area. If the referees agree to review the article, full text in the framework of the privacy protocol is sent. In accordance with the decisions of referees, either directly or corrected article is published or rejected. Confidential reports of the referees in the journal archive will be retained for ten years. All post evaluation process is done electronically on the internet. Detailed instructions to authors are available in each issue of the journal.

Eskiőehir Technical University holds the copyright of all published material that appear in Eskiőehir Technical University Journal of Science and Technology C – Life Sciences and Biotechnology.

"Anadolu Üniversitesi Bilim ve Teknoloji Dergisi C- Yaőam Bilimleri ve Biyoteknoloji (Anadolu University Journal of Science and Technology C – Life Sciences and Biotechnology)" published within Anadolu University started to be published within Eskiőehir Technical University which was established due to statute law 7141. Hence, the name of the journal is changed to "Eskiőehir Teknik Üniversitesi Bilim ve Teknoloji Dergisi C- Yaőam Bilimleri ve Biyoteknoloji (Eskiőehir Technical University Journal of Science and Technology C – Life Sciences and Biotechnology)".

Indexed by **DOAJ** - Directory of Open Access Journals, **EBSCO** and **ULAKBIM**

ISSN: 2667-4203



Volume: 8 / Number: 2 / 2019

Owner / Publisher: Prof. Dr. Tuncay DÖĐEROĐLU for Eskiőehir Technical University

EDITOR-IN-CHIEF

Prof. Dr. Murat TANIŐLI

Eskiőehir Technical University, Institute of Graduate Programs, 26470 Eskiőehir, TURKEY

Phone: +90-222-335 05 80 /**ext.:** 1755

Fax: +90-222 3354122

e-mail: mtanisli@eskisehir.edu.tr

CO-EDITOR IN CHIEF

Assist. Prof. Murat KILIÇ

Eskiőehir Technical University, Institute of Graduate Programs, 26470 Eskiőehir, TURKEY

Phone: +90-222-335 05 80 /**ext.:** 1755

Fax: +90-222 335 41 22

e-mail: mkilic3@eskisehir.edu.tr

CONTACT INFORMATION

Eskiőehir Technical University Journal of Science and Technology

Eskiőehir Technical University, Institute of Graduate Programs, 26470 Eskiőehir, TURKEY

Phone: +90-222-335 05 80 /**ext.:** 1767

Fax: +90-222 335 41 22

e-mail : btada@eskisehir.edu.tr



Volume: 8 / Number: 2 / 2019

OWNER / SAHİBİ

Tuncay DÖĞEROĞLU, The Rector of Eskişehir Technical University / Eskişehir Teknik Üniversitesi Rektörü

EDITORIAL BOARD

Murat TANIŞLI, Editor in Chief

Murat KILIÇ, Co-Editor in Chief

LANGUAGE EDITORS - ENGLISH / İNGİLİZCE DİL EDİTÖRLERİ

Barış ERBAŞ

Sinem KAHVECİOĞLU

SECTION EDITORS / ALAN EDİTÖRLERİ

Ayşe Ak (Erzincan University, Turkey)

Dilek AK (Anadolu University, Turkey)

Ahmet AKSOY (Akdeniz University, Turkey)

Muhittin ARSLANYOLU (Eskişehir Technical University, Turkey)

Müfide BANAR (Eskişehir Technical University, Turkey)

Harun BÖCÜK (Eskişehir Technical University, Turkey)

Mediha CANBEK (Eskişehir Osmangazi University, Turkey)

Rasime DEMİREL (Eskişehir Technical University, Turkey)

Fatih DEMİRCİ (Anadolu University, Turkey)

Miriş DİKMEN (Anadolu University, Turkey)

Nesil ERTORUN (Eskişehir Technical University, Turkey)

Gültekin GÖLLER (İstanbul University, Turkey)

Gülriz BAYÇU KAHYAOĞLU (İstanbul University, Turkey)

Gözde AYDOĞAN KILIÇ (Eskişehir Technical University, Turkey)

Murat KILIÇ (Eskişehir Technical University, Turkey)

Volkan KILIÇ (Eskişehir Technical University, Turkey)

Hatice Mehtap KUTLU (Eskişehir Technical University, Turkey)

Yavuz Bülent KÖSE (Anadolu University, Turkey)

Mehmet Burçin MUTLU (Eskişehir Technical University, Turkey)

Recep Sulhi ÖZKÜTÜK (Eskişehir Technical University, Turkey)

Emel SÖZEN (Eskişehir Technical University, Turkey)

İlkin YÜCEL ŞENGÜN (Ege University, Turkey)

Hakan ŞENTÜRK (Eskişehir Osmangazi University, Turkey)

Fahriye Figen TIRNAKSIZ (Gazi University, Turkey)

Cengiz TÜRE (Eskişehir Technical University, Turkey)

TYPESET / DİZGİ

Handan YİĞİT

ABOUT

Eskişehir Technical University Journal of Science and Technology C- Life Sciences and Biotechnology (formerly Anadolu University Journal of Science and Technology C - Life Sciences and Biotechnology) is an peer-reviewed and refereed international journal by Eskişehir Technical University. Since 2010, it has been regularly published and distributed biannually and it has been published biannually and electronically only since 2016.

- **The journal accepts TURKISH and ENGLISH manuscripts.**
- **The journal is indexed by EBSCO, DOAJ and ULAKBIM.**

AIM AND SCOPE

The journal publishes research papers, reviews and technical notes in the fields of theoretical sciences such as Physics, Biology, Mathematics, Statistics, Chemistry and Chemical Engineering, Environmental Sciences and Engineering, Civil Engineering, Electrical and Electronical Engineering, Computer Science and Informatics, Materials Science and Engineering, Mechanical Engineering, Mining Engineering, Industrial Engineering, Aeronautics and Astronautics, Health Sciences, Pharmaceutical Sciences, and so on.

PEER REVIEW PROCESS

Manuscripts are first reviewed by the editorial board in terms of its its journal's style rules scientific content, ethics and methodological approach. If found appropriate, the manuscript is then send to at least two referees by editor. The decision in line with the referees may be an acceptance, a rejection or an invitation to revise and resubmit. Confidential review reports from the referees will be kept in archive. All submission process manage through the online submission systems.

OPEN ACCESS POLICY

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Copyright notice and type of licence : **CC BY-NC-ND**.

The journal doesn't have Article Processing Charge (APC) or any submission charges.

AUTHOR GUIDELINES

All manuscripts must be submitted electronically.

You will be guided stepwise through the creation and uploading of the various files. There are no page charges. Papers are accepted for publication on the understanding that they have not been published and are not going to be considered for publication elsewhere. Authors should certify that neither the manuscript nor its main contents have already been published or submitted for publication in another journal. We ask a signed **Copyright Form** to start the evaluation process. After a manuscript has been submitted, it is not possible for authors to be added or removed or for the order of authors to be changed. If authors do so, their submission will be cancelled.

Manuscripts may be rejected without peer review by the editor-in-chief if they do not comply with the instructions to authors or if they are beyond the scope of the journal. After a manuscript has been accepted for publication, i.e. after referee-recommended revisions are complete, the author will not be permitted to make any changes that constitute departures from the manuscript that was accepted by the editor. Before publication, the galley proofs are always sent to the authors for corrections. Mistakes or omissions that occur due to some negligence on our part during final printing will be rectified in an errata section in a later issue.

This does not include those errors left uncorrected by the author in the galley proof. The use of someone else's ideas or words in their original form or slightly changed without a proper citation is considered plagiarism and will not be tolerated. Even if a citation is given, if quotation marks are not placed around words taken directly from another author's work, the author is still guilty of plagiarism. All manuscripts received are submitted to iThenticateR, a plagiarism checking system, which compares the content of the manuscript with a vast database of web pages and academic publications. Manuscripts judged to be plagiarised or self-plagiarised, based on the iThenticateR report or any other source of information, will not be considered for publication.

Preparation of Manuscript

Style and Format: Manuscripts should be **single column** by giving one-spaced with 2.5-cm margins on all sides of the page, in Times New Roman font (font size 11). Every page of the manuscript, including the title page, references, tables, etc., should be numbered. All copies of the manuscript should also have line numbers starting with 1 on each consecutive page.

Manuscripts must be upload as word document (*.doc, *.docx vb.). Please avoid uploading *texts in *.pdf format.*

Manuscripts should be written in Turkish or English.

Symbols, Units and Abbreviations: Standard abbreviations and units should be used; SI units are recommended. Abbreviations should be defined at first appearance, and their use in the title and abstract should be avoided. Generic names of chemicals should be used. Genus and species names should be typed in italic or, if this is not available, underlined.

Please refer to equations with capitalisation and unabbreviated (e.g., as given in Equation (1)).

Manuscript Content: Articles should be divided into logically ordered and numbered sections. Principal sections should be numbered consecutively with Arabic numerals (1. Introduction, 2. Formulation of problem, etc.) and subsections should be numbered 1.1., 1.2., etc. Do not number the Acknowledgements or References sections. The text of articles should be, if possible, divided into the following sections: Introduction, Materials and Methods (or Experimental), Results, Discussion, and Conclusion.

Title and contact information

The first page should contain the full title in sentence case (e.g., Hybrid feature selection for text classification), the full names (last names fully capitalised) and affiliations (in English) of all authors (Department, Faculty, University, City, Country, E-mail), and the contact e-mail address for the clearly identified corresponding author.

Abstract

The abstract should provide clear information about the research and the results obtained, and should not exceed 300 words. The abstract should not contain citations and must be written in Times New Roman font with font size 9.

Keywords

Please provide 3 to 5 keywords which can be used for indexing purposes.

Introduction

The motivation or purpose of your research should appear in the “Introduction”, where you state the questions you sought to answer, and then provide some of the historical basis for those questions.

Methods

Provide sufficient information to allow someone to repeat your work. A clear description of your experimental design, sampling procedures, and statistical procedures is especially important in papers describing field studies, simulations, or experiments. If you list a product (e.g., animal food, analytical device), supply the name and location of the manufacturer. Give the model number for equipment used.

Results

Results should be stated concisely and without interpretation.

Discussion

Focus on the rigorously supported aspects of your study. Carefully differentiate the results of your study from data obtained from other sources. Interpret your results, relate them to the results of previous research, and discuss the implications of your results or interpretations.

Conclusion

This should state clearly the main conclusions of the research and give a clear explanation of their importance and relevance. Summary illustrations may be included.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section before the reference list. The names of funding organizations should be written in full.

References

Citations in the text should be identified by numbers in square brackets. The list of references at the end of the paper should be given in order of their first appearance in the text or in alphabetical order according to the surname of the first author. All authors should be included in reference lists unless there are 10 or more, in which case only the first 10 should be given, followed by 'et al.'. Do not use individual sets of square brackets for citation numbers that appear together, e.g., [2, 3, 5–9], not [2], [3], [5]–[9]. Do not include personal communications, unpublished data, websites, or other unpublished materials as references, although such material may be inserted (in parentheses) in the text. In the case of publications in languages other than English, the published English title should be provided if one exists, with an annotation such as "(article in Turkish with an abstract in English)". If the publication was not published with an English title, cite the original title only; do not provide a self-translation. References should be formatted as follows (please note the punctuation and capitalisation):

Journal articles

Journal titles should be abbreviated according to ISI Web of Science abbreviations.

Guyon I. and Elisseeff A. An introduction to variable and feature selection. *J. Mach. Learn. Res.* 2003; 3: 1157-1182.

Izadpanahi S., Ozcinar C., Anbarjafari G. and Demirel H. Resolution enhancement of video sequences by using discrete wavelet transform and illumination compensation. *Turk J. Elec. Eng. & Comp. Sci.* 2012; 20: 1268-1276.

Books

Haupt R.L. and Haupt S.E. *Practical Genetic Algorithms*. 2nd ed. New York, NY, USA: Wiley, 2004.

Kennedy J. and Eberhart R. *Swarm Intelligence*. San Diego, CA, USA: Academic Press, 2001.

Chapters in books

Poore J.H., Lin L., Eschbach R. and Bauer T. Automated statistical testing for embedded systems. In: Zander J., Schieferdecker I., Mosterman P.J., editors. *Model-Based Testing for Embedded Systems*. Boca Raton, FL, USA: CRC Press, 2012. pp. 111-146.

Conference proceedings

Li R.T.H. and Chung S.H. Digital boundary controller for single-phase grid-connected CSI. In: *IEEE 2008 Power Electronics Specialists Conference*; 15–19 June 2008; Rhodes, Greece. New York, NY, USA: IEEE. pp. 4562-4568.

Theses

Boynukalin Z. Emotion analysis of Turkish texts by using machine learning methods. MSc, Middle East Technical University, Ankara, Turkey, 2012.

Tables and Figures

All illustrations (photographs, drawings, graphs, etc.), not including tables, must be labelled "Figure." Figures must be submitted in the manuscript.

All tables and figures must have a caption and/or legend and be numbered (e.g., Table 1, Figure 2), unless there is only one table or figure, in which case it should be labelled “Table” or “Figure” with no numbering. Captions must be written in sentence case (e.g., Macroscopic appearance of the samples.). The font used in the figures should be Times New Roman with 9 pt. If symbols such as \times , μ , η , or v are used, they should be added using the Symbols menu of Word.

All tables and figures must be numbered consecutively as they are referred to in the text. Please refer to tables and figures with capitalisation and unabbreviated (e.g., “As shown in Figure 2...”, and not “Fig. 2” or “figure 2”).

The resolution of images should not be less than 118 pixels/cm when width is set to 16 cm. Images must be scanned at 1200 dpi resolution and submitted in jpeg or tiff format. Graphs and diagrams must be drawn with a line weight between 0.5 and 1 point. Graphs and diagrams with a line weight of less than 0.5 point or more than 1 point are not accepted. Scanned or photocopied graphs and diagrams are not accepted.

Figures that are charts, diagrams, or drawings must be submitted in a modifiable format, i.e. our graphics personnel should be able to modify them. Therefore, if the program with which the figure is drawn has a “save as” option, it must be saved as *.ai or *.pdf. If the “save as” option does not include these extensions, the figure must be copied and pasted into a blank Microsoft Word document as an editable object. It must not be pasted as an image file (tiff, jpeg, or eps) unless it is a photograph.

Tables and figures, including caption, title, column heads, and footnotes, must not exceed 16 × 20 cm and should be no smaller than 8 cm in width. For all tables, please use Word’s “Create Table” feature, with no tabbed text or tables created with spaces and drawn lines. Please do not duplicate information that is already presented in the figures.

CONTENTS / İCİNDEKİLER

Sayfa / Page

ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

- DOĞU AKDENİZ SEDİMANLARINDAN İZOLE EDİLEN BAKTERİLERİN FİLOGENETİK ÇEŞİTLİLİĞİ VE ANTİBİYOTİK DİRENÇLİLİĞİ**
İ. Tunçer, N. Bizsel 151
- FUNCTIONAL INTERACTION BETWEEN *caf5* AND SPERMIDINE FAMILY TRANSPORTERS IN *S. POMBE***
A. Örs Gevrekci 170
- THE EFFECT OF DRAG FORCE AND FLOW RATE ON MESENCHYMAL STEM CELLS IN PACKED-BED PERFUSION BIOREACTOR**
G. Duruksu 179
- DETERMINATION OF TOTAL PHENOLIC AND FLAVONOID CONTENTS, ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF SOME IMPORTANT SALEP ORCHIDS**
K. Hürkan, M. Ballı Yüksel, Y. Kemeç Hürkan, N. Demir 191
- BISBENZOXAZOLE DERIVATIVES HAD ANTI-PROLIFERATIVE EFFECT ON HUMAN CANCER CELLS**
F. Ayaz, Q. A. Isse, R. Kheeree, R. H. Ersan, Ö. Algül 203
- BUPLEURUM LOPHOCARPUM* BOISS. & *BALANSA* VE *B. HELDREICHII* BOISS. & *BALANSA* TÜRLERİNİN UÇUCU YAĞ BİLEŞİMLERİ**
D. Kırıcı, G. Öztürk, M. Çelik, Ö. Çetin, B. Demirci, K. H. C. Başer 212
- FARKLI OLGUNLUK AŞAMALARINDAKİ ALTIN ÇİLEĞİN (*Physalis peruviana* L.) BİLEŞİM ÖZELLİKLERİNİN BELİRLENMESİ**
T. Bilenler, İ. Karabulut 218
- PHENOLIC COMPOUNDS DETERMINATION AND ANTIOXIDANT ACTIVITY OF *TEUCRIUM CAVERNARUM***
F. Göğer, A. Kaya, M. Dinç, S. Doğu 229

DERLEME / REVIEW

- FİTOPATOJEN BAKTERİLERE AİT SALGI SİSTEMLERİNİN GENEL ÖZELLİKLERİ**
B. Baş 238
- GENO-SİTOTOKSİSİTE ÇALIŞMALARINA SİTOM YAKLAŞIMI**
C. Börçek Kasurka 261