



# Journal of Science

**Volume: 14, Issue: 4, Year: 2018**

## Contact

Manisa Celal Bayar University  
Institute of Natural and Applied Sciences  
Campus of Şehit Prof Dr İlhan Varank  
45140 Yunus Emre – MANİSA, TURKEY  
Tel: (00 90) 236 201 27 00  
Fax: (00 90) 236 241 21 49  
E-mail: cbujos@gmail.com  
Web: <http://dergipark.gov.tr/cbayarfbe>

**“CBU Journal of Science is indexed by ULAKBIM-TUBITAK TR-DIZIN”**



**ISSN 1305-130X**

**E-ISSN 1305-1385**

**CBUJOS is published quarterly at Manisa Celal Bayar University Printing House**

**“CBU Journal of Science is a refereed scientific journal”**



## Celal Bayar University Journal of Science

### Owner

Prof. Dr. Kenan DOST, Manisa Celal Bayar University, Department of Chemistry on behalf of the Institute of Natural and Applied Sciences

### Editor

Prof. Dr. Kenan DOST, Manisa Celal Bayar University, Department of Chemistry

Prof. Dr. Mustafa OSKAY, Manisa Celal Bayar University, Department of Biology

### Language Editor

Asst. Prof. Dr. Ahmet Gökhan BİÇER, Manisa Celal Bayar University, Department of English Language and Literature

### International Scientific Advisory Board

Prof. Dr. Thomas MAVROMOUSTAKOS, Chemistry Department of Kapodistrian University of Athens, Greece

Prof. Dr. Brahim HNICH, Izmir University of Economics, Faculty of Engineering and Computer Sciences, Department of Computer Engineering, Izmir, Turkey

Prof. Dr. Thamer Ahmad MOHAMMAD, Department of Civil Engineering, Faculty of Engineering, Universiti Putra Malaysia, Malaysia

Assoc. Prof. Dr. Nur Izura UDVIR, Head of the Department of Computer Science, Faculty of Computer Science and Information Technology, Universiti Putra Malaysia, Serdang, Selangor, Malaysia

Assoc. Prof. Dr. Barbara MESSINA, Universita Degli Studi Di Salerno, Department of Civil Engineering, Salerno, Italy

Assoc. Prof. Dr. Alyani Binti ISMAIL, Department of Computer and Communication Systems Engineering, Universiti Putra Malaysia, Serdang, Malaysia

Assoc. Prof. Dr. Zoran MARKOV, Faculty of Mechanical Engineering, University Ss. Cyril and Methodius in Skopje, Macedonia

Asst. Prof. Dr. Donatella ALBANESE, Department of Industrial Engineering, University of Salerno, Italy

Adj. Prof. Dr. Mary KALAMAKI, Division of Technology and Science, American College of Thessaloniki, Greece

Dr Jens OLDELAND, Biocentre Klein Flottbek and Botanical Garden, University of Hamburg, Germany

Dr Shri SHAJI, Department of Geology, University of Kerala, India

### National Scientific Advisory Board

Prof. Dr. Brahim HNICH, Izmir University of Economics, Faculty of Engineering and Computer Sciences, Department of Computer Engineering, Izmir, Turkey

Prof. Dr. Erhan PESEN, Manisa Celal Bayar University, Department of Physics

Prof. Dr. Necdet BİLDİK, Manisa Celal Bayar University, Department of Mathematics

Prof. Dr. Şenay AYDIN, Manisa Celal Bayar University, Department of Agricultural Sciences ,Alaşehir, Manisa

Prof. Dr. Neriman BAĞDATLIOĞLU, Manisa Celal Bayar University, Department of Food Engineering

Prof. Dr. Üsame TAMER, Manisa Celal Bayar University, Department of Biology

Prof. Dr. Funda DEMİRHAN, Manisa Celal Bayar University, Department of Chemistry

Prof. Dr. Sezai TAŞKIN, Manisa Celal Bayar University, Department of Electrical and Electronics Engineering

Assoc. Prof. Dr. Hülya DURMUŞ, Manisa Celal Bayar University, Engineering Faculty, Materials Engineering Department,

Assoc. Prof. Dr. Murat UYGUN, Adnan Menderes University, Koçarlı Vocational School, Aydin

Assoc. Prof. Dr. Pınar MIZRAK ÖZFIRAT, Manisa Celal Bayar University, Engineering Faculty, Industrial Engineering Department, Manisa, Turkey

Assoc. Prof. Dr. Ali DEMİR, Manisa Celal Bayar University, Department of Civil Engineering, Manisa, Turkey

Assoc. Prof. Dr. Ali KONURALP, Manisa Celal Bayar University, Department of Mathematics, Manisa

Asst. Prof. Dr. Gülen Yıldız TURP, Ege University, Department of Food Engineering, İzmir, Turkey

Asst. Prof. Dr. Hilal YILDIZ, Nevşehir Hacı Bektaş Veli University, Faculty of Engineering and Architecture, Food Engineering Department, Nevşehir

Asst. Prof. Dr. İlhan BAŞTÜRK, Adnan Menderes University, Faculty of Engineering, Elektrical and Electronics Engineering, Aydin

Asst. Prof. Dr. Levent PARALI, Manisa Celal Bayar University, Electronics and Automation Department, Manisa, Turkey

Asst. Prof. Dr. Soner ŞEKER, Uşak University, Engineering Faculty, Civil Engineering Department, Uşak



---

## CBU Journal of Science

CBU Journal of Science is a refereed scientific journal published four times annually (March, June, September and December) by Institute of Natural and Applied Sciences of Manisa Celal Bayar University. Articles are written in English are accepted to be evaluated.

Articles are accepted related to scientific areas below;

Basic and Applied Sciences (Physics, Chemistry, Biology, Mathematics, Statistics etc.), Engineering Sciences (Mechanical, Civil, Food, Industrial, Electrical and Electronic etc.)

CBU Journal of Science is indexed by TUBİTAK ULAKBİM TR-DİZİN, and also is included in DOAJ, Cite Factor, Journal TOCS, Advanced Science Index and OAJI databases. Digital Object Identifier (DOI) number will be assigned for all the articles being published in CBU Journal of Science.

Instructions for Authors and Article Template can be found on the main page of MCBU Institute of Natural and Applied Sciences (<http://fbe.cbu.edu.tr>)





Vol: 14, Issue: 4, Year: 2018

## Contents

### Research Articles

### Pages

Some Null Quaternionic Curves in Minkowski Spaces (Research Article) DOI: 10.18466/cbayarfbe.376273 Tanju Kahraman	357-361
Synthesis and Usage of Active Modified Zn-Zeolite as an Antibacterial Agent (Research Article) DOI: 10.18466/cbayarfbe.376580 Candan Akca, Aysegül Ekmekçi Körlü, Mustafa Ateş	363-368
<i>In Vitro</i> Propagation of Wetland Medicinal Plant <i>Lythrum salicaria</i> L. (Research Article) DOI: 10.18466/cbayarfbe.393626 Betül Akın, Burcu Çetin, Nüket Akanlı Bingöl	369-372
Investigation of Phase Transitions in Nematic Liquid Crystals by Fractional Calculation (Research Article) DOI: 10.18466/cbayarfbe.393700 Müjde Durukan Gültepe, Zekai Tek	373-377
An Approach to Estimate Aircraft Fuel Consumption for the Descent Phase (Research Article) DOI: 10.18466/cbayarfbe.405224 Özlem Şahin, Çerkez Ağayeva	379-383
Investigation of the Fluctuation Size in Thrust Force and Chip Morphology in Drilling (Research Article) DOI: 10.18466/cbayarfbe.409399 Zülküf Demir	385-397
Exogenous Polyamine Treatment Prevents UV-A Induced Cellular Damage and Photoinhibition of Photosystem II in Lichen <i>Physcia semipinnata</i> (J. F. Gmel.) Moberg (Research Article) DOI: 10.18466/cbayarfbe.410546 Dilek Ünal, İnci Tuney Kızılıkaya	399-404
Optimization of Cryopreservation Process Using Response Surface Methodology for <i>Chlorella saccharophila</i> and <i>Chlorella zofingiensis</i> (Research Article) DOI: 10.18466/cbayarfbe.426444 Zeliha Demirel, Esra Imamoglu, Irem Deniz, Meltem Conk Dalay	405-412



Optimal Site Selection for a Solar Power Plant in Turkey Using a Hybrid AHP-TOPSIS Method

413-420

(Research Article)

DOI: 10.18466/cbayarfbe.432432

Merve Akçay, Mehmet Atak

Analysis of Solar Radiation Data in Van, Turkey

421-427

(Research Article)

DOI: 10.18466/cbayarfbe.434552

İrfan Uçkan

Seiberg-Witten-Like Equations on 8-Manifolds without Self-Duality

429-433

(Research Article)

DOI: 10.18466/cbayarfbe.448934

Serhan Eker

Different Extraction Techniques on the Characteristic Properties of Valonea Tannin

435-442

(Research Article)

DOI: 10.18466/cbayarfbe.449605

Ersin Onem, Ali Yorgancioğlu, Onur Yılmaz

Regression Analysis of Soil Compaction Parameters Using Support Vector Method

443-447

(Research Article)

DOI: 10.18466/cbayarfbe.449644

Osman Günaydin, Abdurrahman Özbeş, Mehmet Söylemez

Papain Immobilization on NiFe<sub>2</sub>O<sub>4</sub> Magnetic Nanoparticles Functionalized with Gallic Acid and Microwave Assisted Digestion of Bovine Serum Albumin

449-454

(Research Article)

DOI: 10.18466/cbayarfbe.453636

Nuray Güy

Visualization of Human Kidney Embryonic Cells by Acoustic Microscopy

455-460

(Research Article)

DOI: 10.18466/cbayarfbe.454158

Bukem Bilen, Nural Pastaci Ozsobaci, Fatma Ates Alkan, Mehmet Burcin Unlu

Microbiological Quality of Eight Wild Edible Mushroom Species from Turkey

461-463

(Research Article)

DOI: 10.18466/cbayarfbe.455754

Bülent Ergönül, Fatih Kalyoncu, Ilgaz Akata

Corrosion and Wear Properties of Cu-TiC Composites Produced by Hot Pressing Technique

465-469

(Research Article)

DOI: 10.18466/cbayarfbe.461839

Mehmet Akkaş, Serkan Islak, Cihan Özorak



---

Aircraft Maintenance Technical Education: A Research on Professional Exams  
(*Research Article*)

471-477

DOI: 10.18466/cbayarfbe.461965

Savaş S. Ateş, Haşim Kafalı, Hasan Lik

Tensile Deformation Behavior of Ultrasonically Consolidated Laminated Ti-Al Composites  
at Warm Forming Temperatures  
(*Research Article*)

479-483

DOI: 10.18466/cbayarfbe.464135

İrfan Kaya

Comparative Performance Analysis of Techniques for Automatic Drug Review Classification  
(*Research Article*)

485-490

DOI: 10.18466/cbayarfbe.481096

Alper Kürşat Uysal