

ISSN: 1937-6871 Volume 13, Number 5, May 2020



# JBiSE



ISSN: 1937-6871



9 771937 687008 05

**Editor-in-Chief**  
**Prof. Wei Chen**  
<https://www.scirp.org/journal/jbise>

# Journal Editorial Board

ISSN 1937-6871 (Print) ISSN 1937-688X (Online)

<https://www.scirp.org/journal/jbise>

---

## Honorary Editor-in-Chief

**Prof. Kuo-Chen Chou**

Gordon Life Science Institute, San Diego, California, USA

## Editor-in-Chief

**Prof. Wei Chen**

North China University of Science and Technology, China

## Editorial Board

**Prof. Christopher J. Branford-White**

London Metropolitan University, UK

**Prof. Thomas Casavant**

University of Iowa, USA

**Dr. Feng Cheng**

University of South Florida, USA

**Prof. Senshi Fukashiro**

The University of Tokyo, Japan

**Prof. Dayong Gao**

University of Washington, USA

**Dr. Ernesto Goldman**

Ohio State University Wexner Medical Center, USA

**Prof. Reba Goodman**

Columbia University, USA

**Prof. Ridha Hambli**

Orleans University, France

**Dr. Zeng-Jian Hu**

Howard University, USA

**Prof. Takeshi Kikuchi**

Ritsumeikan University, Japan

**Prof. Rob Krams**

Imperial College London, UK

**Dr. Lukasz Kurgan**

University of Alberta, Canada

**Prof. Juan Liu**

Wuhan University, China

**Dr. Girdhar K. Pandey**

University of Delhi South Campus, India

**Prof. Panagote (Panos) M. Pardalos**

University of Florida, USA

**Prof. Kota V. Ramana**

University of Texas Medical Branch, USA

**Dr. Likun Tan**

Scientific Forming Technologies Corporation, USA

**Dr. Yanmei Tie**

Harvard Medical School, USA

**Prof. Giuseppe Vairo**

University of Rome "Tor Vergata", Italy

**Prof. Zhizhou Zhang**

Harbin Institute of Technology, China

# Table of Contents

**Volume 13    Number 5**

**May 2020**

**pLoc\_Deep-mGpos: Predict Subcellular Localization of Gram Positive Bacteria Proteins by Deep Learning**

Z. Lu, K.-C. Chou.....55

**Application of the Somatosensory Interaction Technology Combined with Virtual Reality Technology on Upper Limbs Function in Cerebrovascular Disease Patients**

W. X. Mai, L. Fang, Z. M. Chen, X. P. Wang, W. T. Li, W. Y. He.....66

**Usefulness of Hammering Sound Frequency Analysis as an Evaluation Method for the Prevention of Trouble during Hip Replacement**

R. Sakai, K. Uchiyama, N. Takahira, M. Kakeshita, Y. Otsu, K. Yoshida, M. Ujihira.....74

**A Novel Lung Cancer Detection Method Using Wavelet Decomposition and Convolutional Neural Network**

A. M. Sarhan.....81

# Journal of Biomedical Science and Engineering (JBiSE)

## Journal Information

### SUBSCRIPTIONS

The *Journal of Biomedical Science and Engineering* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$89 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### SERVICES

#### Advertisements

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### COPYRIGHT

#### Copyright and reuse rights for the front matter of the journal:

Copyright © 2020 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### Copyright for individual papers of the journal:

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

#### Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [jbise@scirp.org](mailto:jbise@scirp.org)

## Journal of Biomedical Science and Engineering (JBiSE)

<https://www.scirp.org/journal/jbise>

JBiSE, an international journal, publishes research and review articles in all important aspects of biology, medicine, engineering, and their intersection. Both experimental and theoretical papers are acceptable provided they report important findings, novel insights, or useful techniques in these areas. All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed in hard copy.

### Subject Coverage

- Applied Biomaterials
- Bioelectrical and Neural Engineering
- Bioinformatics and Computational Biology
- Biomechanics and Biotransport
- Biomedical and Environmental Sciences
- Biomedical Chemistry
- Biomedical Chromatography
- Biomedical Devices, Sensors, Artificial Organs and Nano Technologies
- Biomedical Engineering
- Biomedical Imaging, Processing and Visualization
- Biomedical Informatics
- Biomedical Materials
- Biomedical Microdevices
- Biomedical Modeling
- Biomedical Sciences and Applications
- Biomedical Semantics
- Biomedical Signal Processing and Control
- Biomedicine and Biotechnology
- Biomedicine and Pharmacotherapy
- Clinical Engineering, Wearable and Real-Time Health Monitoring Systems
- Computer Methods and Programs in Biomedicine
- Genetic Engineering
- Genomics
- History and Philosophy of Biomedical Sciences
- Mechanical Behavior of Biomedical Materials
- Medical Biochemistry
- Medical Cell Biology
- Molecular and Genetic Medicine
- Nano-Bio-Analysis
- Negative Results in Biomedicine
- NMR in Biomedicine
- NMR/CT/ECG Technologies and Electromagnetic Field Simulation
- Nonlinear Biomedical Physics
- Numerical Methods in Biomedical Engineering
- Pharmaceutical and Biomedical Analysis
- Physiological Signal Processing
- Proteomics
- Software, Tools and Application in Medical Engineering
- Structure-Based Drug Design

### Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

### Website and E-Mail

<https://www.scirp.org/journal/jbise>

Email: [jbise@scirp.org](mailto:jbise@scirp.org)



### Honorary Editor-in-Chief

Prof. Kuo-Chen Chou

Gordon Life Science Institute, San Diego, California, USA

### Editor-in-Chief

Prof. Wei Chen

North China University of Science and Technology, China

### Editorial Board

Prof. Christopher J. Branford-White

London Metropolitan University, UK

Prof. Thomas Casavant

University of Iowa, USA

Dr. Feng Cheng

University of South Florida, USA

Prof. Senshi Fukashiro

The University of Tokyo, Japan

Prof. Dayong Gao

University of Washington, USA

Dr. Ernesto Goldman

Ohio State University Wexner Medical Center, USA

Prof. Reba Goodman

Columbia University, USA

Prof. Ridha Hambli

Orleans University, France

Dr. Zeng-Jian Hu

Howard University, USA

Prof. Takeshi Kikuchi

Ritsumeikan University, Japan

Prof. Rob Krams

Imperial College London, UK

Dr. Lukasz Kurgan

University of Alberta, Canada

Prof. Juan Liu

Wuhan University, China

Dr. Girdhar K. Pandey

University of Delhi South Campus, India

Prof. Panagote (Panos) M. Pardalos

University of Florida, USA

Prof. Kota V. Ramana

University of Texas Medical Branch, USA

Dr. Likun Tan

Scientific Forming Technologies Corporation, USA

Dr. Yanmei Tie

Harvard Medical School, USA

Prof. Giuseppe Vairo

University of Rome "Tor Vergata", Italy

Prof. Zhizhou Zhang

Harbin Institute of Technology, China

ISSN 1937-6871 (Print), 1937-688X (Online)



## ***What is SCIRP?***

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

## ***What is Open Access?***

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific  
Research  
Publishing**

**Website: <https://www.scirp.org>**

**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**

**Advertisement: [service@scirp.org](mailto:service@scirp.org)**