

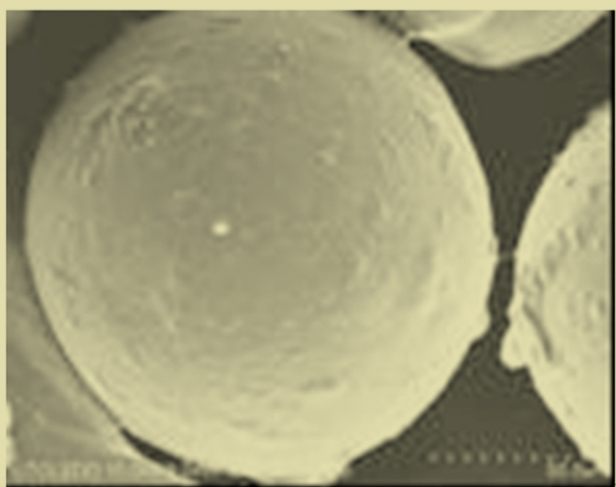
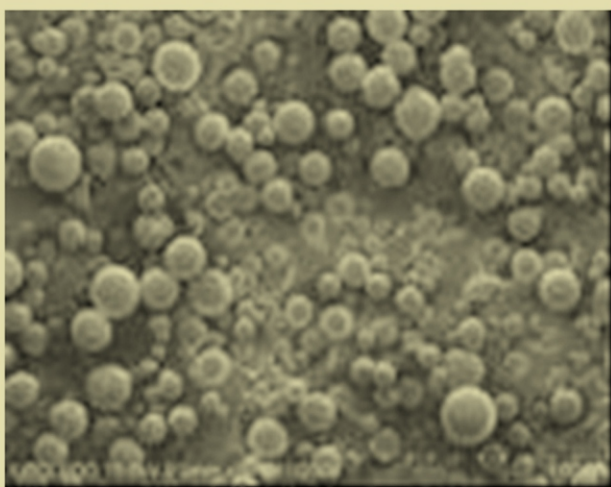
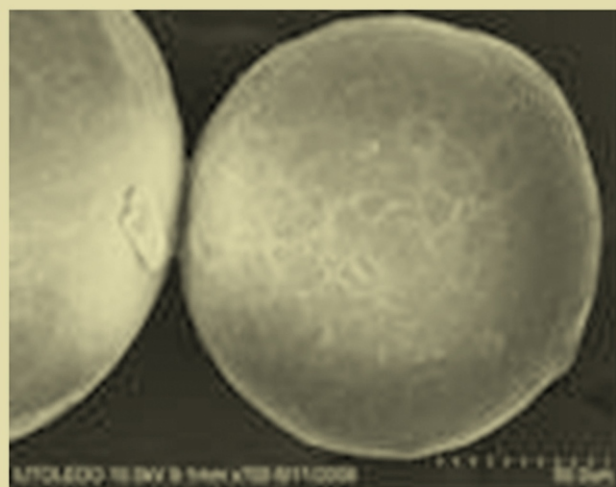
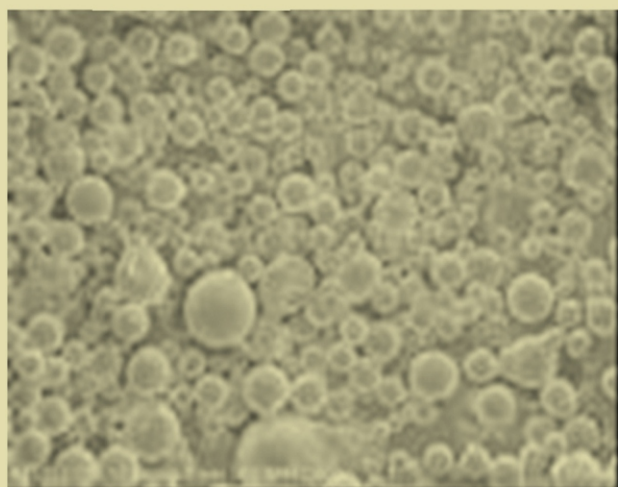


# JBISE

ISSN: 1937-6871

Volume 4 Number 5 May 2011

Journal of **B**iomedical **S**cience and **E**ngineering



ISSN: 1937-6871



**Editor-in-Chief**  
**Kuo-Chen Chou**

# Journal Editorial Board

ISSN 1937-6871 (PRINT) ISSN 1937-688X (ONLINE)

[HTTP://WWW.SCIRP.ORG/JOURNAL/JBISE](http://www.scirp.org/journal/jbise)

---

## Editor-in-Chief

**Prof. Kuo-Chen Chou**

Gordon Life Science Institute, San Diego, California, USA

## Editorial Board (According to Alphabet)

<b>Prof. Suleyman I. Allakhverdiev</b>	Institute of Basic Biological Problems, Russia
<b>Prof. Christopher J. Branford-White</b>	London Metropolitan University, UK
<b>Prof. Thomas Casavant</b>	University of Iowa, USA
<b>Dr. Feng Cheng</b>	Yale University, USA
<b>Prof. Reba Goodman</b>	Columbia University, USA
<b>Prof. Fu-Chu He</b>	Chinese Academy of Science, China
<b>Prof. Robert L. Heinrikson</b>	Proteos, Inc., USA
<b>Prof. Zeng-Jian Hu</b>	Howard University, USA
<b>Prof. Takeshi Kikuchi</b>	Ritsumeikan University, Japan
<b>Prof. Rob Krams</b>	Imperial College, UK
<b>Prof. Lukasz Kurgan</b>	University of Alberta, Canada
<b>Prof. Juan Liu</b>	Wuhan University, China
<b>Dr. Patrick Ma</b>	The Hong Kong Polytechnic University, China
<b>Dr. Bouzid Menaa</b>	Fluorotronics, Inc., USA
<b>Dr. Girdhar K. Pandey</b>	University of Delhi South Campus, India
<b>Dr. Ganesan Pugalenthi</b>	Genome Institute of Singapore, Singapore
<b>Prof. Harold A. Scheraga</b>	Cornell University, USA
<b>Prof. Hong-Bin Shen</b>	Shanghai Jiaotong University, China
<b>Prof. Yan-Mei Tie</b>	Harvard Medical School, USA
<b>Dr. Elif Derya Ubeyli</b>	TOBB University of Economics and Technology, Turkey
<b>Prof. Ching-Sung Wang</b>	Oriental Institute Technology, Taiwan (China)
<b>Prof. Dong-Qing Wei</b>	Shanghai Jiaotong University, China
<b>Dr. Murali M Yallapu</b>	Sanford Research/USD, USA
<b>Prof. Zhi-Zhou Zhang</b>	Harbin Institute of Technology, China

## Managing Executive Editor

**Dr. Yufei Chen**

Scientific Research Publishing, USA Email: yfchen@scirp.com

## Editorial Assistant

**Shirley Song**

Scientific Research Publishing, USA. Email: jbise@scirp.org

---

## Guest Reviewer

Long Cheng

Harshavardhan Shakila

Gopal Krishan

Mohammad Bagher Shamsollahi

Feng Li

Le Zhang

Shenghua Ni

## TABLE OF CONTENTS

Volume 4, Number 5, May 2011

### Comparison of ICA and WT with S-transform based method for removal of ocular artifact from EEG signals

K. Senapati, A. Routray.....339

### Enhanced stability of nano-emulsified paclitaxel

J. Y. Lee, D. Y. Kim, G. H. Kim, K. N. Kang, B. H. Min, B. Lee, J. H. Kim, M. S. Kim.....350

### Mechanical loading of adipose derived stromal cells causes cell alignment

D. A. Gonzales, A. S. Ferng, C. P. Geffre, J. L. Borg, M. Miller, J. A. Szivek.....355

### A doublet mechanics model for the ultrasound characterization of malignant tissues

F. Gentile, J. Sakamoto, R. Righetti, P. Decuzzi, M. Ferrari.....360

### Influence of different CoCrMo counterfaces on wear in UHMWPE for artificial joints

V. A. González-Mora, M. Hoffmann, R. Stroosnijder, E. Espinar, J. M. Llamas, M. Fernández-Fairén, F. J. Gil.....373

### In vitro degradation behavior of chitosan based hybrid microparticles

A. C. Jayasuriya, K. J. Mauch.....380

### Computational evaluation of the dynamic minimal model for the root causes of hypoglycemia

M. Tunç, S. Şişbot, A. K. Gülkaya.....388

### The effects of different sterilization methods on silk fibroin

Y. H. Zhao, X. L. Yan, F. Ding, Y. M. Yang, X. S. Gu.....394

### MicrobMatcher: a microbial comparison software based on matrix-assisted laser desorption/ionization with time-of-flight mass spectrometry

F. Liu, Y. Z. Fu, Y. L. Ye.....400

### Temperature estimation of focused ultrasound exposures for stroke treatment

V. Hadjisavvas, C. Damianou.....407

---

The figure on the front cover is from the article published in *Journal of Biomedical Science and Engineering*, 2011, Vol. 4, No. 5, pp. 380-387, by A. C. Jayasuriya and K. J. Mauch.

# **Journal of Biomedical Science and Engineering (JBiSE)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Journal of Biomedical Science and Engineering* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$79 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©2011 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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 assumes 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)

[www.scirp.org/journal/jbise](http://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

- Bioelectrical and neural engineering
- Bioinformatics and Computational Biology
- Biomaterials
- Biomechanics and biotransport
- Biomedical devices, sensors, artificial organs and nano technologies
- Biomedical Engineering
- Biomedical imaging, image processing and visualization
- Biomedical modeling
- Clinical engineering, wearable and real-time health monitoring systems
- Genetic engineering
- Genomics
- Medical Biochemistry
- Medical Cell Biology
- Nano-bio-analysis
- NMR/CT/ECG technologies and electromagnetic field simulation
- 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

[www.scirp.org/journal/jbise](http://www.scirp.org/journal/jbise)

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



### Editor-in-Chief

**Kuo-Chen Chou**

Gordon Life Science Institute, San Diego, California, USA

### Editorial Board

Prof. Suleyman I. Allakhverdiev	Institute of Basic Biological Problems, Russia
Prof. Christopher J. Branford-White	London Metropolitan University, UK
Prof. Thomas Casavant	University of Iowa, USA
Dr. Feng Cheng	Yale University, USA
Prof. Reba Goodman	Columbia University, USA
Prof. Fu-Chu He	Chinese Academy of Science, China
Prof. Robert L. Henrikson	Proteos, Inc., USA
Prof. Zeng-Jian Hu	Howard University, USA
Prof. Takeshi Kikuchi	Ritsumeikan University, Japan
Prof. Rob Krams	Imperial College, UK
Prof. Lukasz Kurgan	University of Alberta, Canada
Prof. Juan Liu	Wuhan University, China
Dr. Patrick Ma	The Hong Kong Polytechnic University, China
Dr. Bouzid Menaa	Fluorotronics, Inc., USA
Dr. Girdhar K. Pandey	University of Delhi South Campus, India
Dr. Ganesan Pagalanthi	Genome Institute of Singapore, Singapore
Prof. Harold A. Scheraga	Cornell University, USA
Prof. Hong-Bin Shen	Shanghai Jiaotong University, China
Prof. Yan-Mei Tie	Harvard Medical School, USA
Dr. Elif Derya Ubeyli	TOBB University of Economics and Technology, Turkey
Prof. Ching-Sung Wang	Oriental Institute Technology, Taiwan (China)
Prof. Dong-Qing Wei	Shanghai Jiaotong University, China
Dr. Murali M Yallapu	Sanford Research/USD, USA
Prof. Zhi-Zhou Zhang	Harbin Institute of Technology, China

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