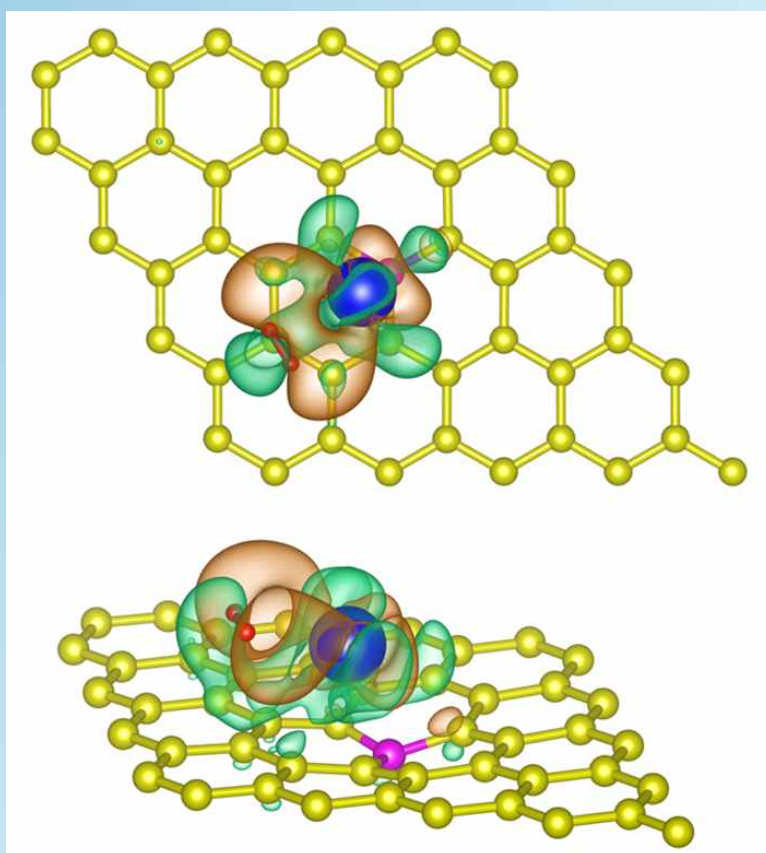


# Journal of Materials Science and Chemical Engineering



ISSN: 2327-6045



# Journal Editorial Board

ISSN Print: 2327-6045      ISSN Online: 2327-6053

<http://www.scirp.org/journal/msce>

---

## Editor-in-Chief

**Dr. Jiyu Fang**

University of Central Florida, USA

## Editorial Board

**Prof. Mohammad Abdel-Karim**

Fayoum University, Egypt

**Prof. Brioude Arnaud**

University of Lyon, France

**Prof. Gajanan S. Bhat**

University of Tennessee, USA

**Dr. Quan Can**

National Institute of Metrology, China

**Dr. Zeki Candan**

Istanbul University, Turkey

**Prof. Paul R. Carney**

University of Florida, USA

**Dr. Kok Boon Chong**

University Malaysia of Computer Science & Engineering, Malaysia

**Dr. Mohamed Abdel Moneim Deyab**

Egyptian Petroleum Research Institute, Egypt

**Dr. Tara P. Dhakal**

Center for Autonomous Solar Power (CASP Center), USA

**Prof. Anter El-Azab**

Purdue University, USA

**Dr. Reza Ghomashchi**

University of Adelaide, Australia

**Dr. Hazar Guesmi**

Institute of Charles Gerhardt, France

**Prof. Yongsheng Han**

Chinese Academy of Sciences, China

**Prof. Anwarul Hasan**

American University of Beirut, Lebanon

**Prof. Weidong He**

University of Electronic Science and Technology of China, China

**Dr. Flavio Horowitz**

James Madison University, USA

**Dr. Raja Rizwan Hussain**

King Saud University, Saudi Arabia

**Prof. Tifeng Jiao**

Yanshan University, China

**Dr. Antonios Kellarakis**

University of Central Lancashire, UK

**Dr. Shafique Khan**

King Fahd University, Saudi Arabia

**Dr. Anson W. K. Ma**

University of Connecticut, USA

**Prof. Martin Alberto Masuelli**

National University of San Luis, Argentina

**Dr. Luisa Molari**

University of Bologna, Italy

**Dr. Andro H. Mondala**

Western Michigan University, USA

**Prof. Badie I. Morsi**

University of Pittsburgh, USA

**Dr. Ravin Natain**

University of Alberta Edmonton, Canada

**Prof. Zeeshan Nawaz**

SABIC Technology & Innovation Center, Saudi Arabia

**Prof. Dimitrios A. Papaconstantopoulos**

George Mason University, USA

**Prof. Guo Qiang**

Shanghai Jiao Tong University, China

**Dr. hab. Endre Ruzinko**

Óbuda University, Hungary

**Dr. Marisa Di Sabatino**

Norwegian University of Science and Technology, Norway

**Prof. Manoj Kumar Singh**

CSIR-Central Institute of Mining & Fuel Research, India

**Dr. Hua Song**

Department of Chemical and Petroleum Engineering, Canada

**Dr. Jiri Tochacek**

Brno University of Technology, Czech Republic

**Prof. Zhirui Wang**

University of Toronto, Canada

**Prof. Shuilin Wu**

Hubei University, China

## Table of Contents

**Volume 3    Number 12**

**December 2015**

**Production of CH<sub>4</sub> in a Low-Pressure CO<sub>2</sub>/H<sub>2</sub> Discharge with Magnetic Field**

K. Arita, S. Iizuka.....69

**First-Principles Investigation of the Effect of M-Doped (M = Zr, Hf) TiCoSb  
Half-Heusler Thermoelectric Material**

G. L. Sun, Y. Y. Li, X. X. Zhao, Y. M. Mi, L. L. Wang.....78

**First Principles DFT Study of Hydrogen Storage on Graphene with La Decoration**

Y. Y. Li, Y. M. Mi, G. L. Sun.....87

**Carbonization of Chlorinated Organic Residual Liquid for Energy Source Generation**

Y. Q. Ge, W. Q. Zhang, G. Xue, J. C. Zhao.....95

# **Journal of Material Science and Chemical Engineering (MSCE)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Journal of Material Science and Chemical 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: \$39 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 © 2015 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 © 2015 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: [msce@scirp.org](mailto:msce@scirp.org)



# **Journal of Materials Science and Chemical Engineering**

ISSN Print: 2327-6045      ISSN Online: 2327-6053  
<http://www.scirp.org/journal/msce>

Journal of Materials Science and Chemical Engineering is an international journal dedicated to the latest advancement of materials science and chemical engineering. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of materials science and chemical engineering. 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 hard copy. The journal publishes original papers including but not limited to the following fields:

- Biomaterials and Biotechnology
- Carbon Nanomaterials
- Catalysis and Reaction Engineering
- Chemical Engineering
- Chemical Synthesis
- Composite Materials
- Extractive Metallurgy
- Fabrication of Nanomaterials
- Functional Material
- Inkjet Printing of Functional Materials
- Masonry Structures
- Metals and Alloys
- Microstructured Materials
- Modelling and Simulation in Structural Engineering
- Nanomaterials
- Nanotechnology and Nanoscience
- Polymer Processing
- Separation Science and Technology

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

## **Website and E-Mail**

<http://www.scirp.org/journal/msce>      E-mail: [msce@scirp.org](mailto:msce@scirp.org)