Editor in Chief
Prof. SungCheal Moon  Korea Institute of Materials Science (KIMS), Korea (South)

Editorial Board
Prof. Azzedine Abbaci  Université Badji Mokhtar, Algeria
Prof. Jose-Maria Bastidas  Spanish Council for Scientific Research (CSIC), Spain
Dr. Sampa Chakrabarti  University of Calcutta, India
Dr. Changle Chen  Celanese Corporation, USA
Prof. Juan A. Conesa  University of Alicante, Spain
Prof. Zhen Fang  Chinese Academy of Sciences, China
Prof. Chang-Sik Ha  Pusan National University, Korea (South)
Prof. Hasan Abdellatif Hasan  Jordan University of Science and Technology, Jordan
Dr. Christopher J. Koroneos  University of Western Macedonia, Greece
Prof. Bogdana Koumanova  University of Chemical Technology and Metallurgy (UCTM), Bulgaria
Prof. Roberto Fernández Lafuente  Consejo Superior de Investigaciones Científicas, Spain
Prof. Lubomír Lapčík  Tomas Bata University, Czech Republic
Prof. Fengshan Liu  National Research Council Canada, Canada
Dr. Muhammad Mansha  University of Engineering and Technology, Pakistan
Prof. Hamdaoui Oualid  University of Annaba, Algeria
Prof. K. S. M. S. Raghavarao  Central Food Technological Research Institute (CFTRI), India
Prof. Dewey Ryu  University of California, USA
Prof. Hristo Sapoundjiev  Natural Resources Canada, Canada
Prof. Chi-Min Shu  National Yunlin University of Science and Technology, Chinese Taipei
Prof. Georgy Borisovich Shul’Pin  Russian Academy of Sciences, Russia
Dr. Ajaya Kumar Singh  Government VYT Post Graduate Autonomous College, India
Dr. Atul Tiwari  University of Hawaii at Manoa, USA
Dr. Neven Ukrainczyk  University of Zagreb, Croatia
Dr. Shuangzhen Wang  National Insititute of Standards and Technology, USA
Dr. Chunliang Wu  Louisiana State University, USA
Dr. Hongwei Wu  Beijing University of Aeronautics and Astronautics, China
Prof. Gennady Efremovich Zaikov  Moscow State Academy of Fine Chemical Technology, Russia
Prof. An Zhang  Biogen Idec, USA

Editorial Assistant
Jing Guo  Scientific Research Publishing, USA  Email: aces@scirp.org
# TABLE OF CONTENTS

**Volume 2 Number 1 January 2012**

**Fungal Leaching of Heavy Metals from Sediments Dredged from the Deûle Canal, France**
N. Sabra, H.-C. Dubourguier, T. Hamieh………………………………………………………………………………………1

**Preliminary Characterization of Xylose Reductase Partially Purified by Reversed Micelles from *Candida tropicalis* IEC5-ITV, an Indigenous Xylitol-Producing Strain**
Y. Cocotle-Ronzon, M. Zendejas-Zaldo, M. L. del Castillo-Lozano, M. Aguilar-Uscanga………………………………………9

**Low Molecular Weight Poly(Lactide-co-Caprolactone) for Tissue Adhesion and Tetracycline Hydrochloride Controlled Release in Wound Management**
S. Sriputtirat, W. Boonkong, S. Pengprecha, A. Petsom, N. Thongchul…………………………………………………………15

**The Influence of Ceric Oxide on Phase Composition and Activity of Iron Oxide Catalysts**
A. A. Lamberov, E. V. Dementyeva, D. I. Vavilov, O. V. Kuzmina, R. R. Gilmullin, E. A. Pavlova………………………………28

**Nanomechanical Analysis of Hybrid Silicones and Hybrid Epoxy Coatings—A Brief Review**
A. Tiwari………………………………………………………………………………………………………………………………34

**Synthesis of Capsaicin Oligosaccharides and Their Anti-Allergic Activity**
K. Shimoda, N. Kubota, M. Akagi…………………………………………………………………………………………………45

**Simulation of CO₂ and H₂S Removal Using Methanol in Hollow Fiber Membrane Gas Absorber (HFMGA)**
M. Mahdavian, H. Atashi, M. Zivdar, M. Mousavi………………………………………………………………………………………50

**High-Resolution ¹H NMR Investigations of the Oxidative Consumption of Salivary Biomolecules by a Tooth-Whitening Formulation: Relevance to Safety Issues**
W. Chan, R. Banks, E. Lynch, M. Grootveld…………………………………………………………………………………………62

**Hydrodynamics of Liquid Film in Helical Tubes**
M. S. Hameed, M. K. Jawad………………………………………………………………………………………………………………74

**Exploring QSARs for Inhibitory Activity of Cyclic Urea and Nonpeptide-Cyclic Cyanoguanidine Derivatives HIV-1 Protease Inhibitors by Artificial Neural Network**
O. Deeb, M. Jawabreh……………………………………………………………………………………………………………………82

**Study on the Effect of a Magnetic Field on Pb(II) Removal Using Modified Chitosan**
L. H. Duan, S. Y. Guo, J. Q. Yang……………………………………………………………………………………………………101

**Preparation and Characterization of Tetracomponent ZnO/SiO₂/SnO₂/TiO₂ Composite Nanofibers by Electrospinning**
C. Song, X. T. Dong……………………………………………………………………………………………………………………108
Determination of Trace Elements in the Tamsagbulag and Tagaan Els Crude Oils and Their Distillation Fractions Using by ICP-OES

J. Sainbayar, D. Monkhoobor, B. Avid………………………………………………………………………………………113

Poorly Crystalline Ru0.4Sn0.6O2 Nanocomposites Coated on Ti Substrate with High Pseudocapacitance for Electrochemical Supercapacitors

Y. Q. Shao, Z. H. Yi, F. H. Lu, F. Y. Deng, B. B. Li……………………………………………………………… ……………118

Sustainable Cement Production with Improved Energy Efficiency and Emerging CO2 Mitigation

S. Z. Wang, X. C. Han……………………………………………………………………… ……………………………………123

Experimental Study of Drying Process of COLZA Seeds in Fluidized Bed Dryer by Statistical Methods

J. Khorshidi, H. Davari……………………………………………………………… ……………………………………………129

Parametric Sensitivity Studies in a Commercial FCC Unit

P. K. Dasila, I. Choudhury, D. Saraf, S. Chopra, A. Dalai…………………………………………………………………… …136

Evaluation of Activation Energy and Thermodynamic Properties of Enzyme-Catalysed Transesterification Reactions

R. Pogaku, J. K. Raman, G. Ravikumar……………………………………………………………………… …………………150

Thermal Degradation of Polyethylene Bags and Millet Stalks: Influence of the Temperature and the Local Concentration of Oxygen on the Conversion Rate of Carbon

S. K. Ouiminga, T. Rogaume, T. Daho, F. Richard, J. Koulidiati………………………………………………………………………………155

Removal of Cesium on Polyaniline Titanotungstate as Composite Ion Exchanger

I. M. El-Naggar, E. S. Zakaria, I. M. Ali, M. Khalil, M. F. El-Shahat………………………………………………………………………………166

Aqueous-Phase Sorption Behaviors of Cs+, Co2+, Sr2+ and Cd2+ Ions on Some Composite Ion Exchangers

I. M. El-Naggar, G. M. Ibrahim, E. A. El-Kad……………………………………………………………………………………180

The figure on the front cover is from the article published in Advances in Chemical Engineering and Science, 2012, Vol. 2, No. 1, pp. 108-112 by Chao Song and Xiangting Dong.
Advances in Chemical Engineering and Science (ACES)

Journal Information

SUBSCRIPTIONS


Subscription rates:
Print: $39 per issue.
To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements
Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)
E-mail: sub@scirp.org

COPYRIGHT

Copyright©2012 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: aces@scirp.org
Advances in Chemical Engineering and Science is an open access, peer-reviewed and fully refereed journal focusing on theories, methods and applications in chemical engineering and science. 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 Advances in Chemical Engineering and Science.

Editor-in-Chief
Prof. SungCheal Moon
Korea Institute of Materials Science (KIMS), Korea (South)

Subject Coverage
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:

- Biochemical Engineering
- Bio-Engineering Materials
- Chemical Engineering Biotechnology
- Chemical Reaction
- Chemical Reaction Related Unit Operations
- Chemicals
- Composite Materials
- Electrochemistry of Nanomaterials and Applications
- Energy Engineering
- Environmental Engineering
- Fluid Mechanics
- Green Chemistry
- Molecular Assembly
- Nanomaterials
- Nano-Scale Phenomena
- Nanostructured Materials
- Nanotechnology
- Natural Products
- Optimization of Chemical Engineering Systems
- Petrochemical
- Pharmaceuticals Polymers
- Specialty Chemicals
- Transport Phenomena

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the ACES.

Notes for Intending Authors
Submitted papers should not be previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers will be peer reviewed. For more details about the submission, please access the website.

Website and E-Mail
www.scirp.org/journal/aces/  E-mail: aces@scirp.org