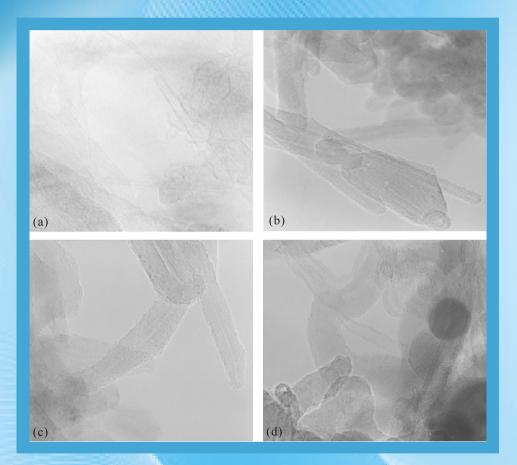
ISSN: 2153-117X Vol. 3, No. 4, April 2012



Materials Sciences and Applications





www.scirp.org/journal/msa

Journal Editorial Board

ISSN 2153-117X (Print) ISSN 2153-1188 (Online) http://www.scirp.org/journal/msa

Editor-in-Chief

Prof. Young W. Kwon

Naval Postgraduate School, USA

Editorial Board

Prof. Alaa S. Abd-El-Aziz Prof. Samir A. Abdel-Latif **Prof. Alexander Bagatur'yants Prof. Huan-Tsung Chang Dr. Dianying Chen** Prof. Ram N. P. Choudhary Prof. Rob Krams **Prof.** Qiming Liu Prof. Athanasios G. Mamalis Prof. Paolo Maria Mariano Prof. Mutlu Özcan Prof. Chunxu Pan **Prof. Su-Seng Pang Prof. Alessandro Pegoretti Prof. Alexander Potapov** Dr. Raj Pal Singh **Prof. Anupam Srivastav** Dr. Deepak Srivastava Prof. Mustafa Übeyli Prof. Gayle E. Woloschak **Prof. Dongfeng Xue** Dr. Raghvendra Singh Yadav Dr. Fei Zhang

University of Prince Edward Island, Canada Helwan University, Egypt Russian Academy of Sciences, Russia National Taiwan University, Chinese Taipei Sulzer Metco, USA IIT Kharagpur, India Imperial College, UK Wuhan University of Technology, China National Technical University of Athens, Greece University of Florence, Italy University of Zurich, Switzerland Wuhan University, China Louisiana State University, USA University of Trento, Italy Russian Academy of Sciences, Russia National Chemical Laboratory, India College of Engineering & Technology, India H. B. Technological Institute, India TOBB University of Economics and Technology, Turkey Northwestern University, USA Dalian University of Technology, China University of Allahabad, India Michigan State University, USA



TABLE OF CONTENTS

Volume 3 Number 4

April 2012

Modulus and Hardness Change of Silicon and Sapphire Substrates by TiC/VC Multilayer Coatings
A. Belger, M. Reibold, P. Paufler
Property and Activity of Molybdates Dispersed on Silica Obtained from Various Synthetic Procedures
A. Gervasini, L. Wahba, M. D. Finol, JF. Lamonier
Synthesis of High-Density Vertically Aligned Carbon Nanotubes Using Ultrasonic Nebulizer
J. H. Zhang, W. Li, T. Soga, T. Jimbo, T. Tanji
A Model for the Characterization and Selection of Beeswaxes for Use as Base Substitute Tissue in Photon Teletherapy
R. M. Vidal, D. do N. Souza
Optimizing the Preparation Conditions of Bi-2223 Superconducting Phase Using PbO and PbO_2
N. H. Mohammed, R. Awad, A. I. Abou-Aly, I. H. Ibrahim, M. S. Hassan
Inhomogeneous Hardness Distribution of High Pressure Torsion Processed IF Steel Disks
Y. P. Song, W. K. Wang, D. S. Gao, HS. Kim, EY. Yoon, DJ. Lee, CS. Lee, J. Guo
Comparison of the Thermal Properties of Asbestos and Polyvinylchloride (PVC) Ceiling Sheets
M. C. Onyeaju, E. Osarolube, E. O. Chukwuocha, C. E. Ekuma, G. A. J. Omasheye
Composition Dependence of Structure and Magnetic Properties in Manganese Doped Nanocrystalline ZnO Particles Prepared by Co-Precipitation
N. F. Djaja, R. Saleh
Microbiological Induced Corrosion on Brass in Recycling Cooling Water System Makeup by Reclaimed Water
P. Xu, Z. Y. Xu, J. Wang, Y. J. Zhang, T. Liu

The figure on the front cover is from the article published in Materials Sciences and Applications, 2012, Vol. 3, No. 4, pp. 213-217 by Jianhui Zhang, Wei Li, Tetsuo Soga, Takashi Jimbo and Takayoshi Tanji.

Materials Sciences and Applications (MSA)

Journal Information

SUBSCRIPTIONS

The *Materials Sciences and Applications* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$59 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)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. 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: msa@scirp.org



Editor-in-Chief Prof. Young W. Kwon

Editorial Board

Call for Papers

Materials Sciences and Applications

ISSN 2153-117X (Print) ISSN 2153-1188 (Online) http://www.scirp.org/journal/msa

Materials Sciences and Applications (MSA) is an international refereed journal dedicated to the latest advancement of materials. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

Naval Postgraduate School, USA

Prof. Alaa S. Abd-El-Aziz Prof. Samir A. Abdel-Latif Prof. Alexander Bagatur'yants Prof. Huan-Tsung Chang Dr. Dianying Chen Prof. Ram N. P. Choudhary Prof. Rob Krams Prof. Qiming Liu

Prof. Athanasios G. Mamalis Prof. Paolo Maria Mariano Prof. Mutlu Özcan Prof. Chunxu Pan Prof. Su-Seng Pang Prof. Alessandro Pegoretti Prof. Alexander Potapov Dr. Raj Pal Singh Prof. Anupam Srivastav Dr. Deepak Srivastava Prof. Mustafa Übeyli Prof. Gayle E. Woloschak Prof. Dongfeng Xue Dr. Raghvendra Singh Yadav Dr. Fei Zhang

Subject Coverage

This journal invites original research and review papers that address the following issues in materials sciences and applications. Topics of interest include, but are not limited to:

- Biological, Biomechanical and Biomedical Materials
- Composite Materials
- Electrical and Electronics Materials
- Fibers and Matrix Materials
- Functional Materials, including Shape Memory Materials, Self Healing Materials, etc.
- Light Emitting Material
- Magnetic Material
- Materials Chemistry
- Metals and Alloys
- Nanocomposites

- Nanomaterials including Nanostructured and Nanoscale Materials
- Nanosensors
- Nanostructured Materials
- Organic Materials
- Physics, Chemistry, Mechanics and Applications in Materials Science
- Rubber/Elastomeric Materials
- Semiconductor Materials
- Textile Materials
- Thin Film and Coatings

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.

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 http://www.scirp.org/journal/msa

E-mail: msa@scirp.org