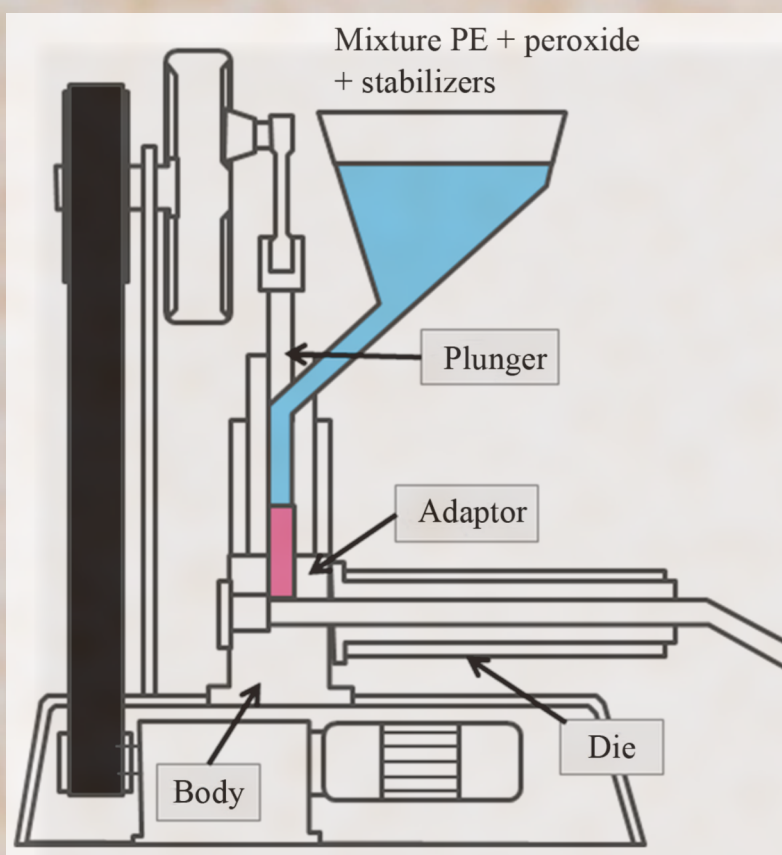


Materials Sciences and Applications



ISSN: 2153-117X



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

University of Prince Edward Island, Canada

Prof. Samir A. Abdel-Latif

Helwan University, Egypt

Prof. Nacer Badi

University of Houston, USA

Prof. Alexander Bagatur'yants

Russian Academy of Sciences, Russia

Prof. Huan-Tsung Chang

National Taiwan University, Chinese Taipei

Prof. Ram N. P. Choudhary

SOA University, India

Dr. Henara Lillian Costa

Universidade Federal de Uberlandia, Brazil

Dr. Chu Chun Hung

The University of Hong Kong, China

Prof. Rob Krams

Imperial College, UK

Prof. Athanasios G. Mamalis

National Technical University of Athens, Greece

Prof. Paolo Maria Mariano

University of Florence, Italy

Prof. Mutlu Özcan

University of Zurich, Switzerland

Prof. Chunxu Pan

Wuhan University, China

Prof. Su-Seng Pang

Louisiana State University, USA

Prof. Alessandro Pegoretti

University of Trento, Italy

Dr. Raj Pal Singh

National Chemical Laboratory, India

Prof. Anupam Srivastav

Middle East College, India

Dr. Deepak Srivastava

H. B. Technological Institute, India

Prof. Gayle E. Woloschak

Northwestern University, USA

Prof. Dongfeng Xue

Dalian University of Technology, China

Dr. Raghvendra Singh Yadav

University of Allahabad, India

Prof. Jory A. Yarmoff

University of California, USA

Dr. Fei Zhang

Michigan State University, USA

TABLE OF CONTENTS

Volume 4 Number 9

September 2013

Study on the Structure of Peroxide Cross-Linked Polyethylene Pipes with Several Stabilizers

H. Hirabayashi, A. Iguchi, K. Yamada, H. Nishimura, K. Ikawa, H. Honma.....497

Effect of Synthesis Routes on Microstructure of Nanocrystalline Cerium Oxide Powder

A. Sharma.....504

Acoustic Emission Characterization of Matrix Damage Initiation in Woven CFRP Composites

M. Bourchak, A. Khan, S. A. Badr, W. Harasani.....509

Plant Seeds-Based Dye-Sensitized Solar Cells

M. S. Abdel-Latif, T. M. El-Agez, S. A. Taya, A. Y. Batniji, H. S. El-Ghamri.....516

Ashes of Biogenic Wastes—Pozzolanicity, Prospects for Use, and Effects on Some Engineering Properties of Concrete

C. Arum, C. M. Ikumapayi, G. O. Aralepo.....521

Chromium-Doped ZnO Nanoparticles Synthesized by Co-Precipitation: Chromium Effects

S. S. Sartiman, N. F. Djaja, R. Saleh.....528

Rolling Circle Amplification on Biotin-Streptavidin Complexes Immobilized to Activated Cyclic Polyolefin Surfaces

H. Oh, A. Cerchiari, D. Sørensen, T. Mon, C. L. Smith.....538

Preparation of Bi₄Ti₃O₁₂ (BIT) Ceramics via a High-Energy Ball Milling Process Doped with Multi-Walled Carbon Nanotubes (MWNTs)

A. G. Pinheiro, G. D. Saraiva, J. M. Filho, A. S. B. Sombra.....549

Effects of Vanadium Content on Structure and Chemical State of TiVN Films Prepared by Reactive DC Magnetron Co-Sputtering

T. Deelear, S. Chaikun, A. Pokaipisit, P. Limsuwan.....556

Mechanical Properties of Composite SiNx/DLC Films Prepared by Filtered Cathodic Arc of Graphite Incorporated with RF Sputtering of Silicon Nitride

P. Bunnak, Y. P. Gong, S. Limsuwan, A. Pokaipisit, P. Limsuwan.....564

Palladium Ultra Thin Layer Profiles Evaluation by Evanescent Light

N. Mirchin, I. Lapsker, E. Tannous, A. Peled.....572

The figure on the front cover is from the article published in Materials Sciences and Applications, 2013, Vol. 4, No. 9, pp. 497-503 by Hideo Hirabayashi, *et al.*

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©2013 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.

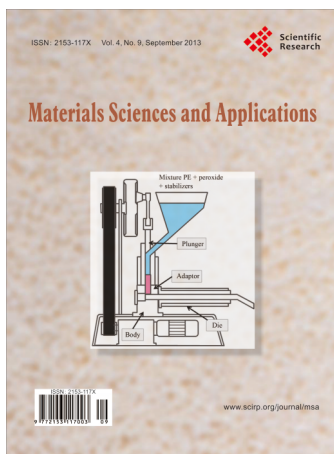
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

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 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: msa@scirp.org



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.

Editor-in-Chief

Prof. Young W. Kwon

Naval Postgraduate School, USA

Editorial Board

Prof. Alaa S. Abd-El-Aziz

Prof. Samir A. Abdel-Latif

Dr. Nacer Badi

Prof. Alexander Bagatur'yants

Prof. Huan-Tsung Chang

Prof. Ram N. P. Choudhary

Dr. Henara Lillian Costa

Dr. Chu Chun Hung

Prof. Rob Krams

Prof. Athanasios G. Mamalis

Prof. Paolo Maria Mariano

Prof. Mutlu Özcan

Prof. Chunxu Pan

Prof. Su-Seng Pang

Prof. Alessandro Pegoretti

Dr. Raj Pal Singh

Prof. Anupam Srivastav

Dr. Deepak Srivastava

Prof. Gayle E. Woloschak

Prof. Dongfeng Xue

Dr. Raghvendra Singh Yadav

Prof. Jory A. Yarmoff

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