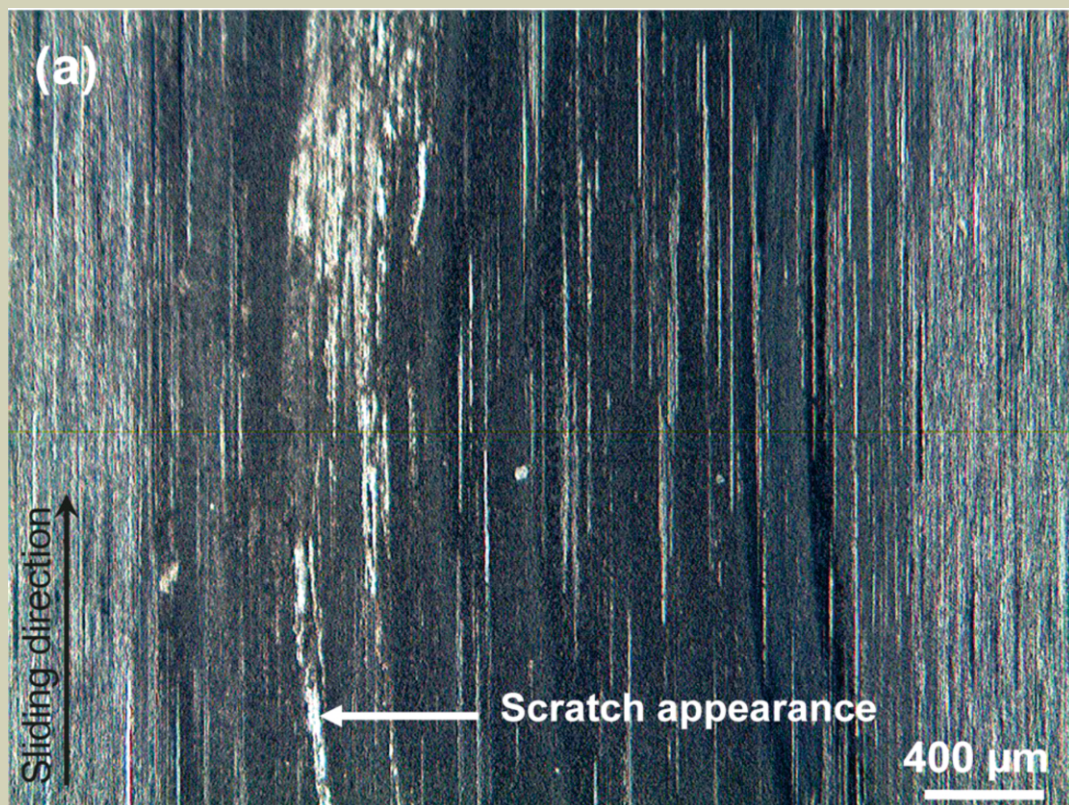


Journal of Surface Engineered Materials and Advanced Technology



ISSN: 2161-4881



Journal Editorial Board

ISSN 2161-4881(Print) ISSN 2161-489X (Online)

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

Editor-in-Chief

Dr. Bouzid Menaa Fluorotronics Inc., USA

Editorial Board

Prof. Adnane Abdelghani	National Institute of Applied Science and Technology, Tunisia
Prof. David M. Bastidas	Spanish Council for Scientific Research (CENIM-CSIC), Spain
Dr. Elena Binkauskienė	Centre for Physical Science and Technology, Lithuania
Dr. Gerardino D'Errico	University of Naples "Federico II", Italy
Prof. Eduardo Alfredo Favret	Centro de Investigaciones en Recursos Naturales (CIRN), Argentina
Prof. Bolesław Grzegorz Gireń	Polish Academy of Sciences, Poland
Dr. Anming Hu	University of Waterloo, Canada
Prof. Mark James Jackson	Purdue University, USA
Prof. Yuri P. Kalmykov	University of Perpignan, France
Prof. Zhixin Kang	Guangdong Key Laboratory for Advanced Metallic Materials Processing, China
Dr. Hyunjung Kim	Chonbuk National University, Korea (South)
Dr. Xuan Tuan Le	McGill University, Canada
Prof. Ioannis Liritzis	University of the Aegean, Greece
Prof. Francisco M. Márquez-Linares	Universidad del Turabo, USA
Prof. Jukka Pekka Matinlinna	The University of Hong Kong, Hong Kong (China)
Prof. Elena Dimitrova Mileva	Bulgarian Academy of Sciences, Bulgaria
Dr. Faizal B. Mustapha	University Putra Malaysia, Malaysia
Prof. Hideo Nakajima	Osaka University, Japan
Prof. K. A. Natarajan	Indian Institute of Science, India
Prof. Takeo Oku	The University of Shiga Prefecture, Japan
Dr. Gary R. Pickrell	Virginia Polytechnic Institute and State University, USA
Dr. Vilas Pol	Argonne National Laboratory (ANL), USA
Prof. Nicola Pugno	Politecnico di Torino, Italy
Dr. M. V. Reddy	National University of Singapore (NUS), Singapore
Prof. Zhifeng Ren	Boston College Newton, USA
Prof. Maria Richert	AGH University of Science & Technology, Poland
Prof. Juan M. Ruso	University of Santiago de Compostela (USC), Spain
Prof. Cristina Satriano	University of Catania, Italy
Prof. Young-Seok Shon	California State University, USA
Prof. Hiroaki Tada	Kinki University, Japan
Prof. Rafael Tadmor	Lamar University, USA
Prof. Valentin Valtchev	University of Caen, France
Prof. Yaohua Zhu	The Hong Kong Polytechnic University, Hong Kong (China)

Editorial Assistant

Karen Zhang Scientific Research Publishing, USA Email: jsemat@scirp.org

Guest Reviewers

Li Chen

Yuhang Cheng

C.T. Liu

TABLE OF CONTENTS

Volume 2 Number 1

January 2012

Ultrasonic Corrosion-Anodization: Electrochemical Cell Design and Process Range Testing

K. Roushia, K. Polychronopoulou, C. C. Doumanidis.....1

Effect of Processing Paramters on Metal Matrix Composites: Stir Casting Process

G. G. Sozhamannan, S. B. Prabu, V. S. K. Venkatagalapathy.....11

Dynamic Electropulsing Induced Phase Transformations and Their Effects on Single Point Diamond Turning of AZ91 Alloy

D. Zhang, S. To, Y. H. Zhu, H. Wang, G. Y. Tang.....16

Tribological Characteristics of DLC Coatings in Vacuum under Sliding Contact

M. A. Kumar, M. Fujii, T. Fukuda.....22

Modeling of the Electrical Conductivity of Graphite Dispersions in Electrolytes

A. N. Lopanov, E. A. Fanina, I. V. Prushkovsky.....28

Glass Marking with CO₂ Laser: Experimental Study of the Interaction Laser-Material

P. Deprez, C.-F. Melian, F. Breaban, J.-F. Coutouly.....32

Microstructure and Properties of Fe-Based Coating on Column Surface Formed by High Frequency Induction Cladding

H. L. Yang, Y. F. Sun, J. J. Shen, S. M. Hu, Q. Zhao, X. C. Jia, J. C. Zhang.....40

Estimate of the Crystallization Kinetics in Stoichiometry Compositions Films of Ge:Sb:Te

C. V. R. Rodríguez, E. M. Sanchez, J. G. Hernández, E. Prokhorov, J. M. Saldaña, G. T. Martínez.....44

Analytical Solution of Vibration Analysis on Fixed-Free Single-Walled Carbon Nanotube-Based Mass Sensor

T.-L. Horng.....47

Nanostructured Microemulsion Phase Behavior Using AOT or Extended Surfactant Combined with a Cationic Hydrotrope

K. Kanan, H. Yousef, I. Kayali.....53

The figure on the front cover is from the article published in the *Journal of Surface Engineered Materials and Advanced Technology*, 2012, Vol. 2, No. 1, pp. 22-27 by M. Ananth Kumar, Masahiro Fujii and Takuya Fukuda.

Journal of Surface Engineered Materials and Advanced Technology (JSEMAT)

Journal Information

SUBSCRIPTIONS

The *Journal of Surface Engineered Materials and Advanced Technology* (Online at Scientific Research Publishing, www.SciRP.org) is published quarterly by Scientific Research Publishing, Inc., USA.

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)

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 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: jsemat@scirp.org



Call for Papers

Journal of Surface Engineered Materials and Advanced Technology (JSEMAT)

ISSN Print: 2161-4881 ISSN Online: 2161-489X

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

Journal of Surface Engineered Materials and Advanced Technology (JSEMAT) is an international, specialized, English-language journal devoted to publication of original contributions concerning surface sciences, surface properties, techniques of characterization and generated applications.

It is an open-access, peer-reviewed journal describing scientific and technological advances that cover the basic sciences, engineering aspects and applied technology of surface chemistry, surface materials sciences and engineering studies for applications in nanotechnology, biomaterials, optics, environment, architectural restoration including all kind of materials surfaces.

Subject Coverage

The journal publishes the highest quality original full articles, communications, notes, reviews, special issues and books, covering both the experimental and theoretical aspects including but not limited to:

- | | |
|--|---|
| Adsorption Process and Principles | Surface Corrosion |
| Advances in Adhesion Sciences | Surface Crystallization |
| Interface Sciences and Applications | Surface Hydration at Solid/Liquid Interface |
| Intermolecular Interactions | Surface Interactions at Bio-Interfaces |
| Kinetics and Thermodynamics at Surfaces | Surface Interactions at the Nanoscale |
| Modeling Theory of Surface Chemistry | Surface Microscopy (SEM, AFM, High Speed AFM, STM...) |
| Single Molecule Force Spectroscopy | Surface Molecules Self-Assembly |
| Surface Biocompatibility | Surface Nanopatterning |
| Surface Characterization and Advanced Techniques | |

Papers are acceptable provided they report important findings, novel insights or useful techniques within the scope of the journal. All manuscript must be prepared in English, and are subjected to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by prints in hard copy. It will be available through <http://www.scirp.org/journal/jsemat/>.

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/jsemat>

E-mail: jsemat@scirp.org

TABLE OF CONTENTS

Volume 2 Number 1

January 2012

Ultrasonic Corrosion-Anodization: Electrochemical Cell Design and Process

Range Testing

K. Roushia, K. Polychronopoulou, C. C. Doumanidis.....1

Effect of Processing Paramters on Metal Matrix Composites: Stir Casting Process

G. G. Sozhamannan, S. B. Prabu, V. S. K. Venkatagalapathy.....11

Dynamic Electropulsing Induced Phase Transformations and Their Effects on

Single Point Diamond Turning of AZ91 Alloy

D. Zhang, S. To, Y. H. Zhu, H. Wang, G. Y. Tang.....16

Tribological Characteristics of DLC Coatings in Vacuum under Sliding Contact

M. A. Kumar, M. Fujii, T. Fukuda.....22

Modeling of the Electrical Conductivity of Graphite Dispersions in Electrolytes

A. N. Lopanov, E. A. Fanina, I. V. Prushkovsky.....28

Glass Marking with CO₂ Laser: Experimental Study of the Interaction Laser-Material

P. Deprez, C.-F. Melian, F. Breaban, J.-F. Coutouly.....32

Microstructure and Properties of Fe-Based Coating on Column Surface Formed

by High Frequency Induction Cladding

H. L. Yang, Y. F. Sun, J. J. Shen, S. M. Hu, Q. Zhao, X. C. Jia, J. C. Zhang.....40

Estimate of the Crystallization Kinetics in Stoichiometry Compositions Films

of Ge:Sb:Te

C. V. R. Rodríguez, E. M. Sanchez, J. G. Hernández, E. Prokhorov, J. M. Saldaña, G. T. Martínez.....44

Analytical Solution of Vibration Analysis on Fixed-Free Single-Walled Carbon

Nanotube-Based Mass Sensor

T.-L. Horng.....47

Nanostructured Microemulsion Phase Behavior Using AOT or Extended Surfactant

Combined with a Cationic Hydrotrope

K. Kanan, H. Yousef, I. Kayali.....53