ISSN: 2327-4077 Volume 9, Number 5, September 2021

Scientific Research Publishing

Journal of Minerals and Materials Characterization and Engineering

ISSN: 2327-4077

https://www.scirp.org/journal/jmmce

Journal Editorial Board

ISSN: 2327-4077 (Print) ISSN: 2327-4085 (Online)
https://www.scirp.org/journal/jmmce

Editor-in-Chief

Prof. Jiann-Yang (Jim) Hwang	Michigan Technological University, USA

Editorial Board

Dr. Zulkifly Abbas	Universiti Putra Malaysia, Malaysia
Prof. Chenguang Bai	Chongqing University, China
Prof. Jinxiang Chen	Southeast University, China
Prof. Mohan B. Dangi	California State University, USA
Dr. Govindhan Dhanaraj	Stony Brook University, USA
Prof. Wenfeng Ding	Nanjing University of Aeronautics and Astronautics, China
Dr. Derya Dispinar	Istanbul Technical University, Turkey
Dr. Jaroslow W. Drelich	Michigan Technological University, USA
Prof. Donato Firrao	Politecnico di Torino, Italy
Dr. Yi Huang	Bournemouth University, UK
Dr. Venkataramana Kandi	Prathima Institute of Medical Sciences, India
Prof. Muammer Kaya	Eskisehir Osmangazi University, Turkey
Dr. Bowen Li	Michigan Technological University, USA
Prof. Xifeng Li	Shanghai Jiao Tong University, China
Prof. Feng Liang	Kunming University of Science and Technology, China
Prof. Hsing K. Lin	University of Alaska Fairbanks, USA
Prof. Xuewei Lv	Chongqing University, China
Dr. Ali Merati	University of Ottawa, Canada
Dr. Miguel Miranda	National Laboratory of Engineering and Geology, Portugal
Dr. Mohammad javad Mohammadi	Ahvaz Jundishapur University of Medical Sciences, Iran
Dr. Zhiwei Peng	Michigan Technological University, USA
Dr. Dolores Eliche Quesada	University of Jaén, Spain
Dr. Mehdi Sadat-Shojai	Department of Chemistry, Shiraz University, Iran
Prof. Veena Sahajwalla	University of New South Wales, Australia
Prof. Gehad Mohamed Saleh	Nuclear Materials Authority (NMA), Egypt
Dr. Ramesh S. Sharma	Visvesvaraya Technological University, India
Dr. Eliandra de Sousa Trichês	Federal University of São Paulo, Brazil

Scientific Research Publishing

Journal of Minerals and Materials Characterization and Engineering, 2021, 9, 407-543
https://www.scirp.org/journal/jmmce
ISSN Online: 2327-4085
ISSN Print: 2327-4077

Table of Contents

Volume 9 Number 5 September 2021

Synthesis and Controllable Growth Dynamics of Third Order Nonlinear Optical Material of 2-Amino-4-Methylpyridinium 2-Chloro 4-Nitro Benzoate Electro-Mechanical Investigation and Device Fabrication

K. Venkatesan, L. Jothi.....407

Titanium Carbide Effects on the Fracture of Inconel 100—A Case Study

D. Moreno, O. Kam, B. Wolfman, O. Nafman, S. Abrahami, A. Cohen, Y. Nachmana, Z. Harush, M. Shapira.....432

Synthesis of $Bi_2Fe_4O_9$ Crystalline Ceramic as Extremely Capable Photocatalyst via Proficient Chemical Route

M. K. Verma, V. Kumar, T. Das, R. K. Sonwani, V. S. Rai, D. Prajapati, K. Sahoo, V. K. Kushwaha, A. Gupta, K. Mandal.....444

MOF(ZM)/Potassium Citrate-Derived Composite Porous Carbon and Its Electrochemical Properties

G. Q. Zhang, P. T. Wang, C. Zhang, L. L. Wu, J. Yang, M. J. Zhang, Z. Ren, J. Q. Zhang, H. M. Luo.....462

Usability of a Natural Tuff as Admixture in Clinker and Its Influence on the Physico-Chemical and Mechanical Properties of Mortar

L. Zerbo, M. Sawadogo, Y. Sawadogo, S. Salogo, M. Ouedrago, M. Seynou, G. Lecomte-Nana, P. Blanchart.....480

Analysis of Roof Failure at the Intersections on a Coal Mining

A. C. Zingano, M. Andrade.....499

Experimental Study on Polymer Nanocomposites Based Strain Sensors for Structural Health Monitoring

R. Kiran, K. R. Prakash, P. Chandra, V. R. Kumar, P. B. Asha, C. R. P. Rao.....512

Morphology Study of Particle Breakage Mechanisms in a Horizontal Stirred Mill: Automated and Manual Point Counting Approaches

R. Roufail, B. Klein.....528

Journal of Minerals and Materials Characterization and Engineering (JMMCE)
Journal Information

SUBSCRIPTIONS

The *Journal of Minerals and Materials Characterization and Engineering* (Online at Scientific Research Publishing, https://www.scirp.org/) is published bimonthly 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 and reuse rights for the front matter of the journal:
Copyright © 2021 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 © 2021 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: jmmce@scirp.org

Call for Papers

Journal of Minerals and Materials Characterization and Engineering

ISSN: 2327-4077 (Print) ISSN: 2327-4085 (Online)
https://www.scirp.org/journal/jmmce

The Journal of Minerals and Materials Characterization and Engineering is an international peer-reviewed journal for the publication of original research in the fields of characterization of the minerals, metals and materials and its applications to the processing of them. Characterization has become the foundation for the discovery of new materials, the determination of their properties, understanding the occurrences and structures of materials, investigating on the performances, trouble shooting of feedstock, processes and products, and providing solutions for the industrial operations. The goal of this journal is to provide a platform for people to publish their findings in these subjects. In addition, the journal can be quite interdisciplinary for people researching in different fields being able to learn from each other and to broaden their perspectives and applications based on a common theme of characterization.

Subject Coverage

The journal publishes original research and review papers related to characterization in the areas of minerals, ceramics, metals, refractories, metallurgy, materials, energy, fillers, recycling and environmental issues. Specifics may include but not limited to the following fields:

- Aerosols
- Bio and Medical Minerals and Materials
- Ceramics
- Characterization Technologies
- Chemical and Physical Processing of Minerals, Energy and Resources
- Crystal Growth
- Electrochemical Processing
- Electromagnetic Field Interactions with Materials
- Emission Particulate Matters
- Environment
- Fillers and Polymers
- Fine Particulates
- Hydrometallurgical Processing
- Light and Wave Interactions with Materials
- Materials
- Metals
- Microscopic Investigations
- Microwave and Infrared Interactions with Materials
- Minerals, Energy and Natural Resources
- Mining
- Nanostructures
- Pyrometallurgical Processing
- Recycling
- Refractories
- Salt and Brines
- Separation and Extractive Processes
- Slag
- Sound Interactions with Materials
- Spectrometry
- Synthesis of Materials
- Thermal Characterizations
- Waste Processing

All manuscripts must be prepared in English, and are subject to a rigorous peer-review process. Accepted papers will immediately appear online followed by printed in hard copy.

Website and E-Mail

https://www.scirp.org/journal/jmmce **E-mail: jmmce@scirp.org**

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience

Scientific Research Publishing

Website: https://www.scirp.org

Subscription: sub@scirp.org

Advertisement: service@scirp.org