## Journal of Environmental Friendly Materials (JEFM)

Director-in-Charge: Dr. H. Sabet Editor-in-Chief: Prof. R. Ghasemzade Managing Editor: Dr. M. Ghanbari Haghighi Technical Manager: Dr. V. Abouei Mehrizi Executive Manager: Dr. M. Abbasi

Online ISSN: 2538-3744
Publisher: Islamic Azad University, Karaj Branch.

Page Designer: Eng. M. R. Tavighi

Vol.5, No.1, 2021.

Print ISSN: 2538-3620

#### **Editorial Board**

**Prof. R. Ghasemzade** - Extractive Metallurgy , Industrial Furnace Design .Fuel and Energy Saving

Professor of Materials Engineering, Islamic Azad University, Karaj Branch, Karaj, Iran.

(Email Address: rgzadeh@iust.ac.ir)

Prof. N. Towhidi - Extractive Metallurgy , Ironmaking , Energy Saving

Professor of Materials Engineering, Islamic Azad University, Karaj Branch, Karaj, Iran.

(Email Address: ntowhidi@ut.ac.ir)

Prof. A. Halvaee - Casting , Metals and Alloys , Materials Selection

Professor of Materials Engineering, Tehran University, Tehran, Iran.

(Email Address: halvaee@ut.ac.ir)

Prof. A. Shokuhfar - Nano Materials ,Composite Materials , Smart Materials , Advance Materials

Professor of Materials Engineering, K.N.Toosi University of Technology, Tehran, Iran.

(Email Address: shokuhfar@kntu.ac.ir)

**Prof. M. Heydarzadeh Sohi** - Surface Engineering , Advance Materials and Processing

Professor of Materials Engineering, Tehran University, Tehran, Iran

(Email Address: mhsohi@ut.ac.ir)

Dr. H. Sabet - Welding and Joining of Advance Materials, NDT Associate Professor of Materials Engineering, Islamic Azad University, Karaj Branch, Karaj, Iran. (Email Address: h-sabet@kiau.ac.ir) Dr. S. H. Razavi - High Temperature Materials , Nano Materials , Advance Materials

Associate Professor of Materials Engineering, Iran University of Science and Technology, Tehran, Iran.

(Email Address: hrazavi@iust.ac.ir)

Dr. M. R. Vaezi Jaze - Nano Materials ,Advance Materials

Associate Professor of Materials Engineering, Institute of Materials and Energy, Meshkin Dasht, Iran.

(Email Address: m r vaezi@merc.ac.ir)

**Dr. M. Goodarzi** - Extractive Metallurgy ,Modeling of Materials Processing

Associate Professor of Materials Engineering, Iran University of Science and Technology, Tehran, Iran.

(Email Address: mgoodarzi@iust.ac.ir)

**Dr. K. Amini** - Advance Materials, Cryogenic Materials, Surface Engineering

Associate Professor of Materials Engineering, Islamic Azad University, Tiran Branch, Tiran, Iran.

(Email Address: k amini@iautiran.ac.ir)

**Dr. H. Ahmad Mehrabi** - Sustainable Advanced Manufacturing and Materials

Associate Professor ,University of Sunderland - UK (Email Address: hamid.mehrabi@sunderland.ac.uk)

**Dr. A. Valanezhad Saeidabad** - Biomaterials , Porous Materials , Advance Materials

Nagasaki University- Japan.

(Email Address: vala@nagasaki-u.ac.jp)

Dr. S. H. Ghaffar - Nano Biomaterials, Environmental Friendly

Materials, Building Materials, Green Technology

Brunel University- UK

(Email Address: seyed.ghaffar@brunel.ac.uk)

#### Aims and Scope

Journal of Environmental Friendly Materials (JEFM) covers all aspects of the science, characterization, technology and application of environmental friendly materials. The main aims of this quarterly periodical are publishing original and full research papers within the scopes of the journal.

#### Subjects covered by the journal include:

- Novel processes to produce environmental friendly materials
- Properties of environmental friendly materials
- Environmental friendly materials characterization
- · Simulation and modeling for production environmental friendly materials
- Sustainable materials, Nanomaterials, Composite materials, Metals and Alloys, Biomaterials, Porous materials, Structural materials
- Waste and recycling of materials , Energy resilient manufacturing of materials

Journal of Environmental Friendly Materials (JEFM) is an open access journal which is published by Islamic Azad University, Karaj branch. This is peer-reviewed journal, publishing original and research papers on all aspects of the science, preparation, processing, production, characterization, technology and application of environmental friendly materials. The editorial board will welcome papers from all of scientists in the hope that this will advance the scientific standards of the journal and provide a channel of communication between scientific researchers and their colleagues in the world.

### Journal of Environmental Friendly Materials (JEFM)

# Journal of Environmental Friendly Materials (JEFM) – Vol.4, No.2, 2020.

Investigation of the Effect of Volume Fraction of Martensite and Different Tempering Conditions on the Microstructure and Mechanical Properties of St52 Dual-Phase Steel Used in the Automotive Industry

M. Shahverdi, B. Karbakhsh Ravari (1-5)

The Effect of Cooling Rate on the Microstructure and Mechanical Properties of the Plastic Injection Molds

Z. S. Seyedraoufi, M. Samiee, F. Abdi (7-11)

Investigation of Aluminum and Composite Aircraft Wings Under the Influence of Aerodynamic Forces and their Effects on Environmental Impacts

S. Ebadi, K. Shahbazi, E. Anbarzadeh (13-21)

Effect of Applied Voltage on the Formation of TiO2 Nanotube on Titanium Substrate using Anodizing Process

M. Ghanbari Haghighi, P. Parsi, Z. S. Seyedraoufi (23-27)

Multiple Moving Cracks in a Non-Homogeneous Orthotropic Plane

R. Bagheri, S. M. Hosseini (29-34)

Metallurgical Aspects of the Spinning Process in Metallic Liners

S. M. J. Hoseini, H. Ghayour, A. S. Golazani, M. K. Asgarani, I. Ebrahimzadeh (35-46)

Investigation of Additive Manufacturing Process by LMD Method, Affecting Process Parameters on Microstructure and Quality of Deposition Layers

R. Hedayatnejad, H. Sabet, S. Rahmati, A. Salemi Golezani (47-58)

The Methods of Ouasicrystals Producing

H. Bakhtiari, M. Abaei, M. R. Rahimipour, M. Farvizi, M. J. Eshraghi (59-68)

An Overview of Quasicrystals, Their Types, Preparation Methods, Properties

H. Bakhtiari, M. R. Rahimipour, M. Farvizi, M. R. Khanzadeh (69-76)

Application of Fully Green Bio-Composites in Manufacturing of Wind Turbine Blades: A Strategic Review

N. Desai, P. Bhatt, M. Solanki (77-87)