

# Journal of Environmental Friendly Materials (JEFM)

---

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

**Vol.3, No.1, 2019.**  
**Print ISSN:** 2538-3620  
**Online ISSN:** 2538-3744  
**Publisher:** Islamic Azad University, Karaj Branch.  
**Page Designer:** Eng. M. R. Tavighi

## 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. Halvae** - Casting , Metals and Alloys , Materials Selection

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

(Email Address: halvae@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\_amin@iautiran.ac.ir)

**Dr. H. Ahmad Mehrabi** - Polymer Materials , Ceramic Materials , Sustainable Materials ,Waste and Recycling of Materials , Energy Resilient Manufacturing of Materials

Cranfield University – UK.

(Email Address: h.a.mehrabi@cranfield.ac.uk)

**Dr. A. Valanezhad Saacidabad** - 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)

Department of Materials Engineering, Faculty of Engineering, Islamic Azad University, Karaj Branch, Karaj, Iran.

P.O. Box: Karaj, 14115-143, Tel: +98 26 34418143, Fax: +98 2634401142

Website: <http://jefm.kiau.ac.ir/> Email: [jefm@kiau.ac.ir](mailto:jefm@kiau.ac.ir)

**Investigation on Composition and Microstructural Morphology of the Fe-B-C Hardfacing Layers**

M. R. Tavakoli Shoushtari (1-7)

**Evaluation of Performance of Resistance Spot Welded Joints with Different Parameters in Advanced High Strength TRIP Steel**

I. Hajiannia, R. Ashiri, M. R. Pakmanesh, M. Shamanian, M. Atapour (9-16)

**The Effect of Cooling Rate on the Solutionizing of IN718 Superalloy Produced via Selective Laser Melting (SLM) Method**

H. H. Dastgerdi, M. O. Shabani, Y. Shajari (17-22)

**The Effect of Heat Treatment on the Microstructural and Superelastic Behavior of NiTi Alloy with 58.5 wt. % Ni**

M.Paryab (23-28)

**A Case Study of Three Different Brake Pads Used in Iranian Rail Systems**

A. Nasr, M. H. Esnaashary (29-38)

**Weldability of Dissimilar Joint of AISI 304 to CK45 by GTAW Method**

A. Taherkhani, Y. Shajari, K. Mirzavand, A. Mellatkah, Z. S. Seyedraoufi (39-43)

**Checking the Quality of Weld Inspection Using SERVQUAL Model and Importance-Performance Analysis**

N. Adabavazeh, M. Navabakhsh, A. Adabavazeh (45-48)

**Sustainable Development by Green Engineering Materials**

A.Anbarzadeh, R.Tahavvori (49-53)