

# Journal of Electromagnetic Analysis and Applications

ISSN: 1942-0730

Volume 3, Number 3, March 2011

[www.scirp.org/journal/jemaa](http://www.scirp.org/journal/jemaa)



Scientific  
Research

ISSN: 1942-0730



# JOURNAL EDITORIAL BOARD

ISSN: 1942-0730 (Print) 1942-0749 (Online)

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

---

## Editors-in-Chief

**Prof. James L. Drewniak** Missouri-Rolla University, USA  
**Prof. Yuanzhang Sun** Wuhan University, China

## Editorial Advisory Board

**Prof. C.C. Chan** University of Hong Kong, China  
**Prof. Ryuichi Yokoyama** Waseda University, Japan  
**Prof. Xiaoxin Zhou** Chinese Society of Electrical Engineering (CSEE), China

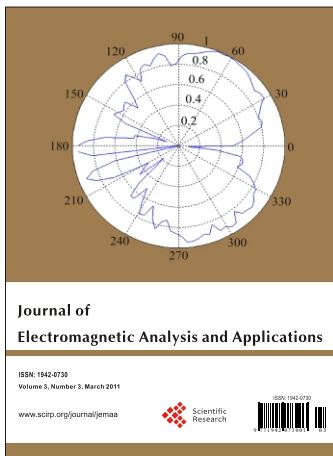
## Editorial Board

**Dr. Leonardo M. Angelone** Food And Drug Administration, USA  
**Dr. Michail B. Belonenko** Volgograd Institute of Business, Russia  
**Prof. Vladimir N. Binhi** Russian Academy of Sciences, Russia  
**Dr. Boguslaw Butrylo** Bialystok Technical University, Poland  
**Prof. Mohamed H. Gaber** Cairo University, Egypt  
**Dr. Yuchun Guo** Xidian University, China  
**Prof. Xijiang Han** Harbin Institute of Technology, China  
**Dr. Eisuke Hanada** Shimane University Hospital, Japan  
**Dr. Isabel Jesus** Institute of Engineering of Porto, Portugal  
**Dr. Ozlem Ozgun** Middle East Technical University, Turkey  
**Dr. Mazen A. E. Salam** Assiut University, Egypt  
**Dr. Yinbiao Shu** State Grid Corporation, China  
**Prof. Yonghua Song** Tsinghua University, China  
**Prof. Francisco Torrens** Universitat of Valencia, Spain  
**Prof. Uygun V. Valiev** Mirzo Ulugbek National University of Uzbekistan (NUUz), Uzbekistan  
**Prof. Ben Young** University of Hong Kong, China  
**Dr. Wenhua Yu** Pennsylvania State University, USA  
**Prof. Zeev Zalevsky** Bar-Ilan University, Israel  
**Dr. Jun Zou** Zhejiang University, China

---

## Editorial Assistant

**Tina Jiang** Scientific Research Publishing, USA. Email: [jemaa@scirp.org](mailto:jemaa@scirp.org)



# Journal of Electromagnetic Analysis and Applications

ISSN: 1942-0730 (Print), 1942-0749 (Online)  
[www.scirp.org/journal/jemaa](http://www.scirp.org/journal/jemaa)

Journal of Electromagnetic Analysis and Applications (JEMAA) is a professional journal in the field of electromagnetic analysis, testing and application. The goal of this journal is to provide an international platform for engineers and academicians all over the world to promote, share, and discuss various new issues and developments in the field of electromagnetic. This journal is edited to encourage deeper understanding and greater effectiveness in theory analysis, testing, numerical calculation and engineering application that relevant electromagnetic fields.

## Editors-in-Chief

Prof. James L. Drewniak  
 Prof. Yuanzhang Sun

Missouri-Rolla University, USA  
 Wuhan University, China

## Subject Coverage

JEMAA publishes four categories of original technical reports: papers, communications, reviews, and discussions. Papers are well-documented final reports of research projects. Communications are shorter and contain noteworthy items of technical interest or ideas required rapid publication. Reviews are synoptic papers on a subject of general interest, with ample literature references, and written for readers with widely varying background. Discussions on published reports, with author rebuttals, form the fourth category of JEMAA publications. Topics of interest include, but are not limited to:

- Antenna Arrays
- Antenna Theory and Applications
- Biological Effects
- Eddy Current Problems
- Electric Power and Grounding (Earth)
- Electric Power Line
- Electrical Machine
- Electrocardiograph (ECG)
- Electroencephalograph (EEG)
- Electromagnetic Breaker
- Electromagnetic Compatibility
- Electromagnetic Compatibility and Electromagnetic Environment
- Electromagnetic Compatibility (EMC)
- Electromagnetic Devices
- Electromagnetic Field Theory
- Electromagnetic Interferences (EMI)
- Electromagnetic Inverse Problems
- Electromagnetic Launch
- Electromagnetic Material Modelling
- Electromagnetic Measurement Technology and Instruments
- Electromagnetic Nondestructive Testing
- Electromagnetic Numerical Analysis
- Electromagnetic Physics
- Electromagnetic Solid Mechanics
- Electromagnetic Structure Optimization
- Electromagnetism and Biological Tissues
- Electromagnetism and Medical Devices

- Electromagnetism in Medical Applications
- Electromyography
- Environmental Pollution by Electromagnetics
- Fiber Optics
- High Frequency Techniques
- Integrated Optics
- Magnetic Fluid
- Medical Applications
- Measuring Technique of Radiated Electromagnetic
- Moving Conductor Eddy Current Problems
- Multiphysics Coupled Problems
- Noise And Signals
- Noise Reduction
- Optical and Millimeter Wave Techniques
- Printed Circuits
- Quasi-Static Fields
- Radar Measurements and Applications
- Radiated Electromagnetic
- Scattering and Diffraction
- Serges (Thunderbolts or Static Electricity)
- Solid State Devices and Circuits
- Static Fields
- Static Magnetic
- Test Electromagnetic Analysis Method (Team) Workshop Benchmark Problems
- The Problems of The Propagation of Electromagnetic Waves
- Waveguides

## Notes for Intending Authors

Submitted papers should not be previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers will be peer reviewed. For more details about the submissions, please access the website.

## Website and E-Mail

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

[jemaa@scirp.org](mailto:jemaa@scirp.org)

## TABLE OF CONTENTS

**Volume 3 Number 3**

**March 2011**

<b>Improvement of Antenna Radiation Efficiency by the Suppression of Surface Waves</b> H. Oraizi, B. Rezaei.....	79
<b>Electromagnetic Pulse Coupling inside a Rectangular Enclosure with an Aperture</b> M. B. Ghandehari, A. A. Lotfi-Neyestanak, M. Naser-Moghadasi.....	84
<b>Analysis of Input Impedance of Asymmetrically Loaded Annular Ring Antenna</b> M. Mahajan, T. Chakarvarty, S. K. Khah.....	90
<b>A New Type Power Converter and Its Application Prospect in Industry</b> W. H. Hu , P. G. Song, Z. B. Chen, Q. Z. Zhou.....	94