ISSN: 1942-0730 Volume 9, Number 12, December 2017



Journal of Electromagnetic Analysis and Applications



www.scirp.org/journal/jemaa

JOURNAL EDITORIAL BOARD

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

Editor-in-Chief

Prof. Yuanzhang Sun

Wuhan University, China

Editorial Advisory Board

Prof. C. C. Chan	University of Hong Kong, China
Prof. Ryuichi Yokoyama	Waseda University, Japan

Editorial Board

Prof. Vladimir N. Binhi Russian Academy of Sciences, Russia Prof. Marco Breschi University of Bologna, Italy Prof. Iver Hakon Brevik Norwegian University of Science and Technology, Norway Prof. Antonella D'Orazio Polytechnic of Bari, Italy Dr. Hosam El-Ocla Lakehead University, Canada Prof. Mohamed H. Gaber Cairo University, Egypt Prof. Kerim Gunev Nuh Naci Yazgan University, Turkey Dr. Yuchun Guo Jiangnan Electronic Communication Research Institute. China Harbin Institute of Technology, China **Prof. Xijiang Han** Prof. Eisuke Hanada Saga University Graduate School of Science and Engineering, Japan Prof. Yahya Salameh Hassan Khraisat Al-Balqa'Applied University, Jordan **Prof. Isabel Jesus** Institute of Engineering of Porto, Portugal Dr. Bu Sik Park Food and Drug Administration (FDA), USA Prof. Haiduke Sarafian The Pennsylvania State University, USA Tsinghua University, China **Prof. Yonghua Song** Prof. Vishnu Srivastava Central Electronics Engineering Research Institute, India **Prof. Francisco Torrens** Universitat of Valencia, Spain Prof. Uygun V. Valiev Mirzo Ulugbek National University of Uzbekistan (NUUz), Uzbekistan **Prof. Chao-Fu Wang** National University of Singapore, Singapore Wawasan Open University, Malaysia **Prof. Tham-Choy Yoong Prof. Zeev Zalevsky** Bar-Ilan University, Israel



Table of Contents

Volume 9 Number 12

December 2017

Balance Equations of Electromagnetic Angular Momentum

Journal of Electromagnetic Analysis and Applications (JEMAA) Journal Information

SUBSCRIPTIONS

The *Journal of Electromagnetic Analysis and Applications* (Online at Scientific Research Publishing, <u>www.SciRP.org</u>) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates: Print: \$89 per issue. To subscribe, please contact Journals Subscriptions Department, E-mail: <u>sub@scirp.org</u>

SERVICES

Advertisements Advertisement Sales Department, E-mail: <u>service@scirp.org</u>

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: <u>sub@scirp.org</u>

COPYRIGHT

Copyright and reuse rights for the front matter of the journal:

Copyright © 2017 by Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY). <u>http://creativecommons.org/licenses/by/4.0/</u>

Copyright for individual papers of the journal:

Copyright © 2017 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.

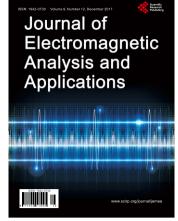
Disclaimer of liability

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: <u>jemaa@scirp.org</u>

Call for Papers



Journal of Electromagnetic Analysis and Applications

ISSN: 1942-0730 (Print) ISSN: 1942-0749 (Online) 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 electromagnetics. This journal is edited to encourage deeper understanding and greater effectiveness in theory analysis, testing, numerical calculation and engineering application that relevant electromagnetic fields.

Editor-in-Chief

Prof. Yuanzhang Sun

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 ProblemsElectric Power and Grounding (Earth)
- Electric Power and Grounding (Ear
 Electric Power Line
- Electrical Machine
- Electrocardiograph (ECG)
- Electroencephalograph (EEG)
- Electromagnetic Breaker
- Electromagnetic Compatibility (EMC)
- Electromagnetic Compatibility and Electromagnetic Environment
- Electromagnetic Devices
- Electromagnetic Field Theory
- Electromagnetic Interferences (EMI)
- Electromagnetic Inverse Problems
 Electromagnetic Launch
- Electromagnetic LaunchElectromagnetic 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 Biological Tissues
 Electromagnetism and Medical Devices
- Electromagnetism and Medical Devices
 Electromagnetism in Medical Applications

- Electromyography
- Environmental Pollution by Electromagnetics
- Fiber Optics
- High Frequency Techniques
- Integrated Optics
- Magnetic Fluid
- Measuring Technique of Radiated Electromagnetic
- Medical Applications
 Moving Conductor Eddy Current Problems
- Moving Conductor Eddy Current Problem
 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
- Scattering and Diffraction
 Serges (Thunderbolts or Static Electricity)
- 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 derails about the submissions, please access the website.

Website and E-Mail

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

E-mail: jemaa@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?

Art and Design Review

Advances in

dvances in Biological

Entomolog

Applied Mathematics

Engineering

nii ili a

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



Soft

Website: http://www.scirp.org Subscription: sub@scirp.org Advertisement: service@scirp.org