ISSN: 1942-0730 Volume 11, Number 9, September 2019



# Journal of Electromagnetic Analysis and Applications



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

# JOURNAL EDITORIAL BOARD

ISSN: 1942-0730 (Print) ISSN: 1942-0749 (Online) https://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 Prof. Marco Breschi Prof. Iver Hakon Brevik

Prof. Antonella D'Orazio Dr. Hosam El-Ocla Prof. Mohamed H. Gaber Prof. Kerim Guney Dr. Yuchun Guo

Prof. Xijiang Han Prof. Eisuke Hanada

Prof. Yahya Salameh Hassan Khraisat Prof. Isabel Jesus Dr. Bu Sik Park Prof. Haiduke Sarafian Prof. Yonghua Song Prof. Vishnu Srivastava Prof. Francisco Torrens Prof. Uygun V. Valiev

Prof. Chao-Fu Wang Prof. Tham-Choy Yoong Prof. Zeev Zalevsky

Russian Academy of Sciences, Russia University of Bologna, Italy Norwegian University of Science and Technology, Norway Polytechnic of Bari, Italy Lakehead University, Canada Cairo University, Egypt Nuh Naci Yazgan University, Turkey Jiangnan Electronic Communication Research Institute. China Harbin Institute of Technology, China Saga University Graduate School of Science and Engineering, Japan Al-Balqa'Applied University, Jordan Institute of Engineering of Porto, Portugal Food and Drug Administration (FDA), USA The Pennsylvania State University, USA Tsinghua University, China Central Electronics Engineering Research Institute, India Universitat of Valencia, Spain Mirzo Ulugbek National University of Uzbekistan (NUUz), Uzbekistan National University of Singapore, Singapore Wawasan Open University, Malaysia Bar-Ilan University, Israel



# **Table of Contents**

# Volume 11 Number 9 Combination of Metal Shielding and Distance Estimation for Electromagnetic **Compatibility Guarantee** N. D. Truong, T. V. Nghia, B. D. Chinh, H. Q. Quy.....135 Dual Band BPF Based on Parallel Coupled Lines Loaded by Open Stubs for Ku-Band Satellite Applications A. S. I. Amar, O. M. A. Dardeer, A. A. Zekry.....148 Reduced Vector Helmholtz Wave Equation Analysis on the Wave-Number Side

## September 2019

# Journal of Electromagnetic Analysis and Applications (JEMAA) Journal Information

#### **SUBSCRIPTIONS**

The *Journal of Electromagnetic Analysis and Applications* (Online at Scientific Research Publishing, <u>https://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: service@scirp.org

#### **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 © 2019 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 © 2019 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: jemaa@scirp.org

# **Call for Papers**



Scientific Research

# Journal of Electromagnetic Analysis and Applications

ISSN: 1942-0730 (Print) ISSN: 1942-0749 (Online) https://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 (Eartr
  Electric Power Line
- 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 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 Medical Devices
  Electromagnetism in Medical Application
- Electromagnetism in Medical Applications

- Electromyography
- Environmental Pollution by Electromagnetics
- Fiber Optics
- High Frequency Techniques
- Integrated OpticsMagnetic Fluid
- Magnetic Fluid
  Measuring Technique of Radiated Electromagnetic
- Medical Applications
- Moving Conductor Eddy Current Problems
- Multiphysics Coupled Problems
- Noise and Signals
- Noise Reduction
- Optical and Millimeter Wave Techniques
  Printed Circuits
- 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 derails about the submissions, please access the website.

## Website and E-Mail

https://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

Advances in Biological

Entomolog

Applied Mathematics

Engineering

a i i i i 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: https://www.scirp.org Subscription: sub@scirp.org Advertisement: service@scirp.org