

APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY JOURNAL

May 2015
Vol. 30 No. 5
ISSN 1054-4887

The ACES Journal is abstracted in INSPEC, in Engineering Index, DTIC, Science Citation Index Expanded, the Research Alert, and to Current Contents/Engineering, Computing & Technology.

The illustrations on the front cover have been obtained from the research groups at the Department of Electrical Engineering, The University of Mississippi.

THE APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY

<http://aces-society.org>

EDITOR-IN-CHIEF

Atef Elsherbeni

Colorado School of Mines, EECS Dept.
Golden, CO 80401, USA

ASSOCIATE EDITORS-IN-CHIEF

Sami Barmada

University of Pisa, EE Dept.
Pisa, Italy, 56126

Mohammed Hadi

Kuwait University, EE Dept.
Safat, Kuwait

Paolo Mezzanotte

University of Perugia
I-06125 Perugia, Italy

Yasushi Kanai

Niigata Inst. of Technology
Kashiwazaki, Japan

Alistair Duffy

De Montfort University
Leicester, UK

Antonio Musolino

University of Pisa
56126 Pisa, Italy

Ozlem Kilic

Catholic University of America
Washington DC, 20064, USA

Mohamed Bakr

McMaster University, ECE Dept.
Hamilton, ON, L8S 4K1, Canada

Marco Arjona López

La Laguna Institute of Technology
Coahuila 27266, Mexico

Fan Yang

Tsinghua University, EE Dept.
Beijing 100084, China

Abdul Arkadan

Rafik Hariri University
Chouf 2010, Lebanon

EDITORIAL ASSISTANTS

Matthew J. Inman

University of Mississippi, EE Dept.
University, MS 38677, USA

Shanell Lopez

Colorado School of Mines, EECS Dept.
Golden, CO 80401, USA

EMERITUS EDITORS-IN-CHIEF

Duncan C. Baker

EE Dept. U. of Pretoria
0002 Pretoria, South Africa

Ahmed Kishk

University of Mississippi, EE Dept.
University, MS 38677, USA

Allen Glisson

University of Mississippi, EE Dept.
University, MS 38677, USA

Robert M. Bevensee

Box 812
Alamo, CA 94507-0516, USA

David E. Stein

USAF Scientific Advisory Board
Washington, DC 20330, USA

EMERITUS ASSOCIATE EDITORS-IN-CHIEF

Mohamed Abouzahra

MIT Lincoln Laboratory
Lexington, MA, USA

Erdem Topsakal

Mississippi State University, EE Dept.
Mississippi State, MS 39762, USA

Levent Gurel

Bilkent University
Ankara, Turkey

Alexander Yakovlev

University of Mississippi, EE Dept.
University, MS 38677, USA

EMERITUS EDITORIAL ASSISTANTS

Khaled ElMaghoub

University of Mississippi, EE Dept.
University, MS 38677, USA

Christina Bonnington

University of Mississippi, EE Dept.
University, MS 38677, USA

Anne Graham

University of Mississippi, EE Dept.
University, MS 38677, USA

Mohamed Al Sharkawy

Arab Academy for Science and Technology, ECE Dept.
Alexandria, Egypt

MAY 2015 REVIEWERS

Hristos Anastassiu

Giulio Antonini

Marco Arjona

Sami Barmada

Alex Bijamov

Ming Chen

Chien-Hung Chen

Dajun Cheng

Alistar Duffy

Gregory Durgin

Roland Gilbert

Sebastian Hegler

Selcuk Helhel

Mourad Ibrahim

Yasushi Kanai

Majid Karimipour

MReza Khorramian

Haixin Liu

Mingyu Lu

Ivor Morrow

Nasser Ojaroudi

Andrew Peterson

Rama Rao T

Usman Saeed

Rashid Saleem

Binay Sarkar

Katherine Siakavara

Kwok Kan So

Qi Tang

Chao-Fu Wang

Qianyin Xiang

Gang Zhang

Huapeng Zhao

Muhammad Zubair

Theodoros Zygiridis

Yasemin Oner

THE APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY
JOURNAL

Vol. 30 No. 5

May 2015

TABLE OF CONTENTS

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| “60 GHz Circular Patch-Fed High Gain Transparent Lens Antenna” Z. Briqech, A. R. Sebak, and T. Denidni | 469 |
| “Systematic Analysis on the Optical Properties of Chiral Metamaterial Slab for Microwave Polarization Control” I. Comez, M. Karaaslan, F. Dincer, F. Karadag, and C. Sabah | 478 |
| “A Fourth Order FDFD Approach for the Analysis of Sectorial Elliptic Waveguides” A. Fanti, L. Deias, G. A. Casula, and G. Montisci | 488 |
| “A Vector Parabolic Equation Method Combined with MLFMM for Scattering from a Cavity” Z. He, Z. H. Fan, D. Z. Ding, and R. S. Chen..... | 496 |
| “Scattering from an Arbitrarily Incident Plane Wave by a PEMC Elliptic Cylinder Confocally Coated with a Chiral Material” A-K. Hamid..... | 503 |
| “Design of Compact and Wideband Suppression Low Pass Elliptic Filter by n-Segment Step Impedance Transmission Line” M. Hayati, M. Amiri, and S. H. Sedighy | 510 |
| “Multi-Objective Optimal Design of Surface-Mounted Permanent Magnet Motor Using NSGA-II” S. Mendaci, H. Allag, and M. R. Mekideche..... | 519 |
| “On the Properties of Loop-Flower Basis Functions” Y. Hou, G. Xiao, and J. Fang..... | 527 |
| “A Solution of One-Dimensional Stationary Schrödinger Equation by the Fourier Transform” V. M. Fitio, I. Y. Yaremchuk, V. V. Romakh, and Y. V. Bobitski | 534 |
| “Compact Microwave Impedance Matching Using Patterned Conducting Planes” A. Ghajar and H. Ghorbaninejad | 540 |
| “Compact and Planar Monopole Antenna for WLAN and WiMAX Applications” S. C. Basaran and K. Sertel..... | 546 |

| | |
|--------------------------------------------------------------------------------------------------|-----|
| “Crosstalk Spectrum Predictions Considering Frequency-Dependent Parameters in Electric Vehicles” | |
| Y. Guo, L. Wang, and C. Liao | 551 |
| “Elliptical Slot Antenna with Dual Band-Notched Characteristics for UWB Applications” | |
| M. Naser-Moghadasi and A. A. Kalteh | 558 |
| “Inspired Metamaterial Quad-Band Printed Inverted-F (IFA) Antenna for USB Applications” | |
| A. M. Soliman, D. M. Elsheakh, E. A. Abdallah, and H. M. El-Hennawy | 564 |
| “Optimization of the Auxiliary Sources Method for 2D Arbitrary-Shaped Scattering Problems” | |
| A. Bouzidi and T. Aguilu..... | 571 |