

APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY JOURNAL

February 2017
Vol. 32 No. 2
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, EE Dept.
Golden, CO 80401, USA

ASSOCIATE EDITORS-IN-CHIEF

Sami Barmada
University of Pisa, ESE Dept.
Pisa, Italy, 56122

Mohammed Hadi
Kuwait University, EE Dept.
Safat, Kuwait

Alistair Duffy
De Montfort University
Leicester, UK

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

Abdul Arkadan
Marquette University, ECE Dept.
Milwaukee, WI 53201, USA

Paolo Mezzanotte
University of Perugia
I-06125 Perugia, Italy

Antonio Musolino
University of Pisa
56126 Pisa, Italy

Marco Arjona López
La Laguna Institute of Technology
Torreon, Coahuila 27266, Mexico

EDITORIAL ASSISTANTS

Matthew J. Inman
University of Mississippi, EE Dept.
University, MS 38677, USA

Shanell Lopez
Colorado School of Mines, EE Dept.
Golden, CO 80401, USA

Duncan C. Baker
EE Dept. U. of Pretoria
0002 Pretoria, South Africa

Robert M. Bevensee
Box 812
Alamo, CA 94507-0516, USA

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

Ahmed Kishk
Concordia University, ECS Dept.
Montreal, QC H3G 1M8, Canada

David E. Stein
USAF Scientific Advisory Board
Washington, DC 20330, USA

EMERITUS ASSOCIATE EDITORS-IN-CHIEF

Yasushi Kanai
Niigata Inst. of Technology
Kashiwazaki, Japan

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

Levent Gurel
Bilkent University
Ankara, Turkey

Mohamed Abouzahra
MIT Lincoln Laboratory
Lexington, MA, USA

Ozlem Kilic
Catholic University of America
Washington, DC 20064, USA

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

Fan Yang
Tsinghua University, EE Dept.
Beijing 100084, China

EMERITUS EDITORIAL ASSISTANTS

Khaled ElMaghoub
Trimble Navigation/MIT
Boston, MA 02125, 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

FEBRUARY 2017 REVIEWERS

Amr Adly
Erkan Afacan
Gulam Alsath
Marco Arjona
Manuel Arrebola
Septimiu Balascuta
Kishore Balasubramanian
Mirko Barbuto
Cemile Bardak
Istvan Bardi
Rusan Barik
Jun Fan
Alessandro Fanti
Rafael Gonzalez-Ayestaran
Yu Lan
Liang Lang

Sergio Ledesma
Yuehui Li
Ming-Cheng Liang
Xu Liang
Min Liang
Wen-Jiao Liao
Angelo Liseno
Zahéra Mekkioui
Laercio Mendonca
Donglin Meng
Xuesong Meng
Ivor Morrow
Dhirgham Naji
Mohammad Hossein Naji
Levent Sevgi

**THE APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY
JOURNAL**

Vol. 32 No. 2

February 2017

TABLE OF CONTENTS

FDTD Potentials for Dispersion Analysis of Sinusoidally Modulated Media Fateme M. Monavar, Gholamreza Moradi, and Pedram Mousavi	99
An Efficient and Analytical Solution to the Integral on Truncated-Wedge ILDCs for Polygonal Surfaces Chao Liu, Xiao Zhou, Wen M. Yu, and Tie J. Cui	106
A Regularized Source Current Reconstruction Method for Reactive Near Field to Far Field Transformation Mohammad Bod, Reza Sarraf-Shirazi, Gholam Moradi, and Amir Jafargholi.....	113
Electromagnetic Radiation Source Identification Based on Spatial Characteristics by Using Support Vector Machines Dan Shi and Yougang Gao	120
A Null Broadening Beamforming Approach Based on Covariance Matrix Expansion Wenxing Li, Yu Zhao, Qiubo Ye, and Si Li	128
Radar Cross Section Reduction of Microstrip Antenna Using Dual-Band Metamaterial Absorber Alireza Shater and Davoud Zarifi	135
Noise Suppression Detection Method Based on Time Reversed Signal Waveform Similarity Bing Li	141
A Compact Microstrip Lowpass Filter with Flat Group-delay and Ultra High Figure-of-Merit Mohsen Hayati, Milad Ekhteraei, and Farzin Shama.....	147
Compact Wideband Parallel-Coupled Microstrip Line Bandpass Filter with In-Line Structure Chuan Shao, Yang Li, Liang Wang, and Chen Jin.....	153
LTCC Wideband Bandpass Filter Based on Multi-layered Coupling Xin Gao, Wenjie Feng, and Wenquan Che	158

Compact Modified Quarter Mode Substrate Integrated Waveguide Resonator and Its Application to Filters Design

YongZong Zhu, WenXuan Xie, Xin Deng, and YeFeng Zhang 163

Waveguide Filter Modeling and Simulation using Mode-matching, Fullwave Network Analysis and Swarm Optimization

Islem Bouchachi, Jordi Mateu, and Mohamed L. Riabi 169