

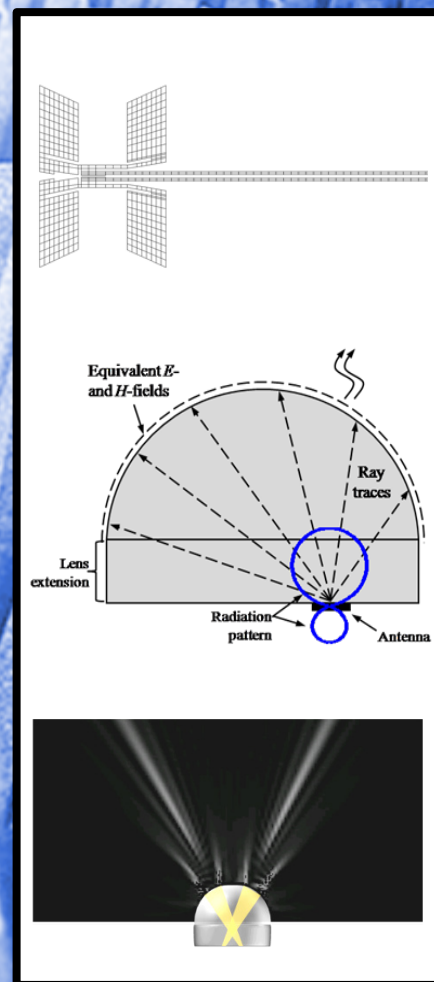
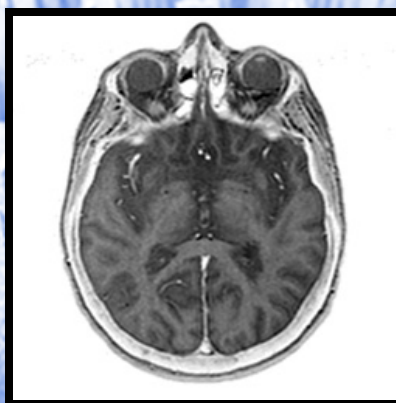
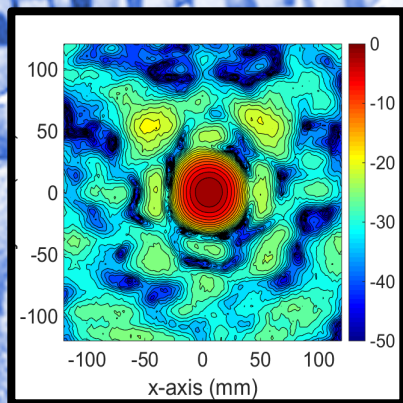
Special Issue On:
Computational Electromagnetics and Measurements

Guest Editors: Amedeo Capozzoli, Francesco D'Agostino,
Lars Foged, and Vince Rodriquez

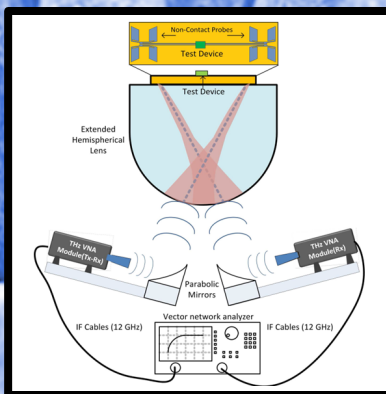
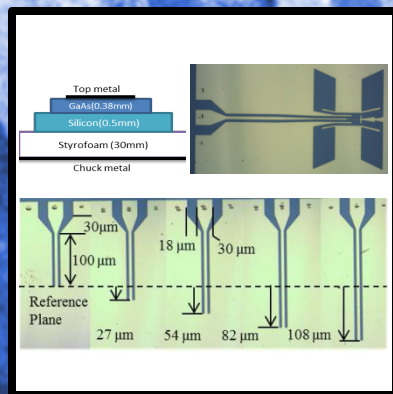


February 2016

Vol. 1 No. 2



Selected Cover Images
Cosan Caglayan, Georgios C. Trichopoulos, and Kubilay Sertel:
Hybrid Electromagnetic Modeling of Lens-Integrated Antennas for Non-Contact On-Wafer Characterization of THz Devices and Integrated Circuits - (Bottom Left, Bottom Center, and Right)



APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY EXPRESS JOURNAL

<http://aces-society.org>

GENERAL INFORMATION

PURPOSE AND SCOPE: The Applied Computational Electromagnetics Society (*ACES*) *Express* Journal hereinafter known as the *ACES Express Journal* is devoted to the timely and rapid exchange of information in computational electromagnetics, to the advancement of the state-of-the art, and the promotion of related technical activities. The primary objective of the information exchange is to inform the scientific community in a short amount of time on the developments of recent computational electromagnetics tools and their use in electrical engineering, physics, or related areas. The technical activities promoted by this publication include code validation, performance analysis, and input/output standardization; code or technique optimization and error minimization; innovations in solution technique or in data input/output; identification of new applications for electromagnetics modeling codes and techniques; integration of computational electromagnetics techniques with new computer architectures; and correlation of computational parameters with physical mechanisms.

SUBMISSIONS: The *ACES Express Journal* welcomes original, previously unpublished papers, relating to applied computational electromagnetics. Typical papers will represent the computational electromagnetics aspects of research in electrical engineering, physics, or related disciplines as well as research in the field of applied computational electromagnetics.

Manuscripts are to be submitted through the upload system of *ACES* web site <http://aces-society.org> Please see "Information for Authors" on inside of back cover and at *ACES* web site. For additional information contact the Editor-in-Chief:

Dr. Ozlem Kilic

Department of Electrical Engineering and Computer Science
The Catholic University of America
Washington, DC 20064
Email: kilic@cua.edu

SUBSCRIPTIONS: All members of the Applied Computational Electromagnetics Society are entitled to access and download the *ACES Express Journal* of any published journal article available at <http://aces-society.org>. *ACES Express Journal* is an online journal and printed copies are not available. Subscription to *ACES* is through the web site.

LIABILITY. Neither *ACES*, nor the *ACES Express Journal* editors, are responsible for any consequence of misinformation or claims, express or implied, in any published material in an *ACES Express Journal* issue. This also applies to advertising, for which only camera-ready copies are accepted. Authors are responsible for all information contained in their papers. If any material submitted for publication includes material which has already been published elsewhere, it is the author's responsibility to obtain written permission to reproduce such material.

THE APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY

<http://aces-society.org>

EDITOR-IN-CHIEF

Ozlem Kilic

Department of Electrical Engineering and Computer Science
The Catholic University of America
Washington, DC 20064

ASSOCIATE EDITORS-IN-CHIEF

Lijun Jiang

University of Hong Kong, Dept. of EEE
Hong, Kong

Steven J. Weiss

US Army Research Laboratory
Adelphi Laboratory Center (RDRL-SER-M)
Adelphi, MD 20783, USA

Amedeo Capozzoli

Universita di Napoli Federico II, DIETI
I-80125 Napoli, Italy

Shinichiro Ohnuki

Nihon University
Tokyo, Japan

William O'Keefe Coburn

US Army Research Laboratory
Adelphi Laboratory Center (RDRL-SER-M)
Adelphi, MD 20783, USA

Yu Mao Wu

Fudan University
Shanghai 200433, China

Kubilay Sertel

The Ohio State University
Columbus, OH 43210, USA

Jiming Song

Iowa State University, ECE Dept.
Ames, IA 50011, USA

Maokun Li

Tsinghua University, EE Dept.
Beijing 100084, China

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

FEBRUARY 2016 REVIEWERS

Saad Alhossin
William Coburn
Claudio Curcio
Francesco Dagostino
Vinh Dang
Ibrahim Elshafiey
Lars Foged
Claudio Gennarelli
Mang He
George Kyriacou
Ivor Morrow
Gokhan Mumcu
Quang Nguyen

Shinichiro Ohnuki
Vladimir Okhmatovski
Giuseppe Pelosi
Vince Rodriguez
Luca Salghetti Drioli
Nitin Saluja
Kubilay Sertel
Katherine Siakavara
Kagan Topalli
Georgios Trichopoulos
Christopher Trueman
Chao-Fu Wang

THE APPLIED COMPUTATIONAL ELECTROMAGNETICS SOCIETY EXPRESS JOURNAL

Vol. 1 No. 2

February 2016

TABLE OF CONTENTS

“Assessment of ALEGRA Computation for Magnetostatic Configurations” Michael Grinfeld, John Niederhaus, and Andrew Porwitzky.....	40
“Far-Field Synthesis of Sparse Arrays with Cross-polar Pattern Reduction” Giulia Buttazoni and Roberto Vescovo.....	44
“Compact Shaped Antennas for Wide-Band Radiogoniometry” Antonio Manna, Giuseppe Pelosi, Monica Righini, Luca Scorrano, Stefano Selleri, and Fabrizio Trotta.....	48
“RCS Results for an Electrically Large Realistic Model Airframe” Ciara Pienaar, Johann W. Odendaal, Johan C. Smit, Johan Joubert, and Jacques E. Cilliers.....	52
“Measurements of Backscattering from a Dihedral Corner in a Reverberating Chamber” Antonio Sorrentino, Giuseppe Ferrara, Maurizio Migliaccio, and Sergio Cappa.....	56
“Geometrical Scale Modeling of Gain and Echo Area: Simulations, Measurements and Comparisons” Constantine A. Balanis, Kaiyue Zhang, and Craig R. Birtcher.....	60
“Review of Recent Advances and Future Challenges in Antenna Measurement” Manuel Sierra-Castañer.....	64
“Specific Absorption Rate for Agri-Food Materials from Multiple Antenna Exposure” Dinh Thanh Le and Bruno Bisceglia.....	68
“Hybrid Electromagnetic Modeling of Lens-Integrated Antennas for Non-Contact On-Wafer Characterization of THz Devices and Integrated Circuits” Cosan Caglayan, Georgios C. Trichopoulos, and Kubilay Sertel.....	72
“An Empirical Modeling of Electromagnetic Pollution on a University Campus” Çetin Kurnaz.....	76
“A Planar NF–FF Transformation for Quasi-Spherical Antennas using the Innovative Spiral Scanning” Francesco D’Agostino, Flaminio Ferrara, Claudio Gennarelli, Rocco Guerriero, and Massimo Migliozi.....	80

“Gradient-Based Near-Field Antenna Characterization in Planar Geometry”
Amedeo Capozzoli, Claudio Curcio, and Angelo Liseno.....84