

2014 16th International Symposium on Antenna Technology and Applied Electromagnetics

(ANTEM 2014)

**Victoria, British Columbia, Canada
13 – 16 July 2014**



**IEEE Catalog Number: CFP1456F-POD
ISBN: 978-1-4799-2226-0**

Organized Session: Next Generation Dielectric-Based Antennas and Components

- 1 [Photoresist-Based Dielectric Resonator Antenna Fabrication and Performance: A Review](#)
Atabak Rashidian, University of Manitoba, Canada
Mohammadreza Tayfeh Aligodarz, University of Saskatchewan, Canada
David Klymyshyn, University of Saskatchewan, Canada
Martin Boerner, Karlsruhe Institute of Technology, Germany
Lotfollah Shafai, University of Manitoba, Canada
Juergen Mohr, Karlsruhe Institute of Technology, Germany
- 3 [Electronically Tunable Dielectric Resonator Reflectarray](#)
Abdelhady Mohamed, Concordia University, Canada
Saber Zainudeen, Elmonofia University, Egypt
Abdelaziz Mitkees, Military Technical College, Egypt
Ahmed Kishk, Concordia University, Canada
- 5 [A Fast and Efficient Permittivity Estimation Method for Artificially Engineered Microwave Materials](#)
Mohammadreza Tayfeh Aligodarz, University of Saskatchewan, Canada
Atabak Rashidian, University of Manitoba, Canada
David Klymyshyn, University of Saskatchewan, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 7 [Polymer Micro-Actuator for Frequency Agile Patch Antenna](#)
Samuel Baron, IETR, UMR CNRS 6164, University of Nantes, France
Benoit Guiffard, IETR, UMR CNRS 6164, University of Nantes, France
Ala Sharaiha, IETR, UMR CNRS 6164, University of Rennes 1, France
- 9 [Mutual Coupling Reduction Between Cylindrical DRA using PMC/PEC Parallel Plates for Millimeter-Waves MIMO Applications](#)
Amer Hagrass, Institut National de la Recherche scientifique, Canada
Tayeb Denidni, Institut National de la Recherche Scientifique, Canada
Mourad Nedil, Université du Québec en Abitibi-Témiscamingue, Canada
- 11 [Wideband Highly-Efficient Transparent/Miniaturized Antennas using Clear Colorless Acrylic Sheets for Space/WLAN Applications](#)
Atabak Rashidian, University of Manitoba, Canada
Lot Shafai, University of Manitoba, Canada

RFID Antennas and Sensor Fusion

13 [High Gain Fabry-Pérot Circular Polarization Cavity Antenna for UHF RFID Applications](#)

Dahbia Hamzaoui, IMEP-LAHC, Université de Grenoble, France

Tan-Phu Vuong, IMEP-LAHC, Université de Grenoble, France

Farid Djahli, Université de Sétif, Algeria

Ghaffer Kiani, Abdulaziz University, Saudi Arabia

17 [Near Field Chipless Tag for Food Quality Monitoring](#)

Sharmistha Bhadra, University of Manitoba, Canada

Douglas Thomson, University of Manitoba, Canada

Greg Bridges, University of Manitoba, Canada

Microwave Devices and Circuits

- 19 [Synthesis and Design of Direct-Coupled Rectangular Waveguide Filters with Arbitrary Inverter Sequence](#)
Qianqian Wang, University of Victoria, Canada
Jens Bornemann, University of Victoria, Canada
- 25 [An Oscillator Array using Positive Feedback Type Push-Push Oscillators and Directional Phase Shifters](#)
Takayuki Tanaka, Saga University, Japan
Ichihiko Toyoda, Saga University, Japan
- 27 [An Oscillator Array using Push-Push Oscillators and Very Simple Coupling Circuits](#)
Takayuki Tanaka, Saga University, Japan
Takeru Sameshima, Saga University, Japan
Masayoshi Aikawa, Saga University, Japan
Ichihiko Toyoda, Saga University, Japan
- 29 [Mode and Characteristic Impedance of Isosceles Triangular Waveguide](#)
Ying Chen, Simon Fraser University, Canada
Rodney Vaughan, Simon Fraser University, Canada
- 31 [A Wideband MMIC Low Noise Amplifier with Series and Shunt Feedback](#)
Filippo Rossi, University of Victoria, Canada
Chau-Ching Chiong, Academia Sinica Institute of Astronomy and Astrophysics, Taiwan
Huei Wang, National Taiwan University, Taiwan
Ming-Tang Chen, Academia Sinica Institute of Astronomy and Astrophysics, Taiwan
Frank Jiang, National Research Council, Canada
Poman So, University of Victoria, Canada
Stéphane Claude, National Research Council, Canada
Jens Bornemann, University of Victoria, Canada
- 33 [Wafer-Level Waveguide Filter Realization using Simplified 3D Fabrication Process](#)
Mehdi Nosrati, University of Alberta, Canada
Nahid Vahabisani, University of Alberta, Canada
Mojgan Daneshmand, University of Alberta, Canada
- 35 [Center Frequency and Bandwidth Controllable Microstrip Balun Bandpass Filter](#)
Ren-Chung Jiang, Yuan Ze University, Taiwan
Nan-Wei Chen, Yuan Ze University, Taiwan
Hsuan-Ju Tsai, HTC, Taiwan

Bioelectromagnetics

- 37 [Weighted L2-Norm Edge Preserving Multiplicative Regularization Along with 3D Nonlinear Time-Domain Inversion Technique for Breast Cancer Detection](#)
Rezvan Rafiee Alavi, Iran University of Science and Technology, Iran
Majid Tayarani, Iran University of Science and Technology, Iran
Pedram Mousavi, University of Alberta, Canada
- 40 [Discontinuous-Galerkin Microwave Imaging](#)
Ian Jeffrey, University of Manitoba, Canada
Amer Zakaria, University of Manitoba, Canada
Joe LoVetri, University of Manitoba, Canada
- 42 [Dielectrophoresis Study of Electroporation Effects on Chinese Hamster Ovary Cells](#)
Elham Salimi, University of Manitoba, Canada
Katrin Braasch, University of Manitoba, Canada
Michael Butler, University of Manitoba, Canada
Douglas Thomson, University of Manitoba, Canada
Greg Bridges, University of Manitoba, Canada
- 44 [Use of Synthesized Fields in Microwave Tomography Inversion](#)
Nozhan Bayat, University of Manitoba, Canada
Puyan Mojabi, University of Manitoba, Canada
Joe LoVetri, University of Manitoba, Canada

Antenna Theory and Design

- 46 [A High-Efficiency Planar Series-Fed Array Antenna Based on Thick EBG Resonator Elements](#)
Mehdi Hosseini, University of Saskatchewan, Canada
David Klymyshyn, University of Saskatchewan, Canada
- 48 [Quantitative Assessment of the Operation of the Infinite Balun](#)
James McLean, TDK, United States
Robert Sutton, TDK, United States
Heinrich Foltz, University of Texas--Pan American, United States
- 50 [A Direction-Finding Method Based on Power Measurement in Space](#)
Shan Wang, China Academy of Space Technology, China
Jinyong Fang, China Academy of Space Technology, China
Song Jin, Beijing remote sensing institute, China
- 52 [The Cloverleaf Antenna: A Compact Wide-Bandwidth Dual-Polarization Feed for CHIME](#)
Meiling Deng, The University of British Columbia, Canada
Ducan Campbell-Wilson, The University of Sydney, Australia
- 54 [Radiation Pattern Shaping of Higher Order Broadside Modes of Circular Microstrip Radiator using Impedance Surfaces](#)
Prateek Juyal, University of Manitoba, Canada
Lot Shafai, University of Manitoba, Canada
- 57 [Open-Ended Waveguide Antenna Excitation with Microstrip Patch Elements](#)
Zahra Allahgholi Pour, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 59 [Very Low Profile Helix Antenna Feeding Resonant Cavity for ETC System](#)
Narcisse Rimbault, Université de Rennes 1, France
Ala Sharaiha, Université de Rennes 1, France
Sylvain Collardey, Université de Rennes 1, France
- 61 [Cavity Backed Circularly Polarized Spiral Antennas](#)
Ali Mehrabani, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 63 [Parametric Study of Cavity Back Spiral Antennas](#)
Ali Mehrabani, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 65 [A Novel Printed Directive Antenna Configuration](#)
Prateek Juyal, University of Manitoba, Canada
Lot Shafai, University of Manitoba, Canada

Satcom and Reflector Antennas

- 67 [A Constant Beamwidth Reflector Antenna for a Harmonic Radar Operating in the Near-Field](#)
Herbert Aumann, University of Maine, United States
Nuri Emanetoglu, University of Maine, United States
- 69 [Dielectric Loaded Circular Waveguide Feeds](#)
Mohammad Maula, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
Zahra Allahgholi Pour, University of Manitoba, Canada
- 71 [Innovative Ku-Band Antenna Front-End for Satcom-On-The-Move](#)
Marta Arias Campo, IMST GmbH, Germany
Bahram Sanadgol, IMST GmbH, Germany
Rens Baggen, IMST GmbH, Germany
- 73 [Ka-band Dual Mode Circularly Polarized Reflectarray](#)
Abdelhady Mohamed, Concordia University, Canada
Ahmed Kishk, Concordia University, Canada
- 75 [Some Novel Properties of Asymmetric Adaptive Medium to Large Aperture Antennas](#)
Zahra Allahgholi Pour, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada

Special Session: MM-Wave Antennas and Devices

- 76 [Radio Analog Signal Processing: For Millimeter-Wave and Terahertz Applications \[Invited\]](#)
Christophe Caloz, École Polytechnique de Montréal,
- 78 [New Dense Dielectric Patch Array Antenna for Future 5G Short-Range Communications \[Invited\]](#)
Osama Haraz, King Saud University, Saudi Arabia
Ayman Elboushi, Concordia University, Canada
Abdel-Razik Sebak, Concordia University, Canada
- 82 [Millimeter-Wave Hybrid Isolator for Mutual-Coupling Reduction Applications \[Invited\]](#)
Mu'ath Al-Hasan, INRS-University of Québec, Canada
Tayeb Denidni, INRS-University of Québec, Canada
Abdel-Razik Sebak, Concordia University, Canada
- 84 [High-Gain Dielectric-Loaded Antipodal Fermi Tapered Slot Antenna for MM-Wave Applications \[Invited\]](#)
Issa Mohamed, Concordia University, Canada
Zouhair Briqech, Concordia University, Canada
Abdelrazik Sebak, Concordia University, Canada
- 86 [Surface Integrated Waveguide Fed Antipodal Fermi-Linear Tapered Slot Antenna at 28 GHz \[Invited\]](#)
Kiran Phalak, Concordia University, Canada
Zouhair Briqech, Concordia University, Canada
Abdelrazik Sebak, Concordia University, Canada
- 88 [Printed Folded Monopole Antenna for Portable Devices Operating in LTE/GSM/UMTS/WiFi Bands \[Invited\]](#)
Gijo Augustin, National Institute of Scientific Research (INRS), Canada
Bybi Chacko, National Institute of Scientific Research (INRS), Canada
Tayeb A. Denidni, National Institute of Scientific Research (INRS), Canada
- 90 [60 GHz Dual-Polarized 1 x 4 Antipodal Fermi Tapered Slot Antenna Array \[Invited\]](#)
Zouhair Briqech, Concordia University, Canada
Abdelrazik Sebak, Concordia University, Canada
Tayeb Denidni, INRS, Canada
- 92 [Design of an FSS-Backed 20/30 GHz Circularly Polarized Reflectarray for Shared Aperture X/Ka-Band Satellite Applications \[Invited\]](#)
Reza Chaharmir, Communication Research Centre, Canada
Jafar Shaker, Communication Research Centre, Canada
- 94 [Millimeter-Wave Antenna Array on Silicon with Embedded Cavity-Backed Structure \[Invited\]](#)
Hong Phuong Phan, Ho Chi Minh City University of Technology, Vietnam
Manh Ha Hoang, Ho Chi Minh City University of Technology, Vietnam
Tan Phu Vuong, MINATEC, INP Grenoble, France
Gustavo Rehder, University of São Paulo, Brazil
Constantine Balanis, Arizona State University, United States
- 96 [Millimeter Wave Antenna Based on Substrate Integrated Waveguide Technology for 60-GHz Communication System \[Invited\]](#)
Hamsakutty Vettikalladi, King Saud University, Saudi Arabia
Nadeem Ashraf, King Saud University, Saudi Arabia
Majeed Kanhal, King Saud University, Saudi Arabia

Measurement Techniques

- 98 [Dielectric Characterization of Commercial Absorbers with Curve Fits](#)
William Kefauver, Lockheed Martin, United States
Thomas Cencich, Lockheed Martin, United States

- 101 [Slotted Waveguide Arrays for Collecting Near-Field Scattering Data](#)
Majid Ostadrahimi, University of Manitoba, Canada
Kyle Nemez, University of Manitoba, Canada
Joe LoVetri, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
Stephen Pistorius, University of Manitoba, Canada

- 103 [A Novel Terrestrial Local Positioning Technique using Transmitting Multi-Frequency Antenna Array](#)
Mohammad Reza Ghafouri Fard, University of Alberta, Canada
Pedram Mousavi, University of Alberta, Canada
Amir Hossein Rezaie, Amirkabir University of Technology, Iran

- 105 [Truncation Study for Design of a Large Spherical Near-field Antenna Test System](#)
Daniel Janse Van Rensburg, Nearfield Systems, United States

- 107 [Generating and Analyzing mm Wave Signals with Multipliers and Harmonic Mixers](#)
Chris Gillis, Rohde & Schwarz Canada Inc., Canada

- 108 [Mixer Group Delay Measurements](#)
Mathieu Caillet, Rohde & Schwarz Canada Inc., Canada

Antenna Miniaturization

- 109 [Design of a Compact Omni-Directional ENG ZOR Antenna](#)
Ming-Chun Tang, Chongqing University, China
Tianwei Deng, National University of Singapore, Singapore
- 111 [Compact Multiband Monopole Antenna for USB Dongle Applications](#)
Bybi P. Chacko, National Institute of Scientific Research (INRS), Canada
Gijo Augustin, National Institute of Scientific Research (INRS), Canada
Tayeb A. Denidni, National Institute of Scientific Research (INRS), Canada
- 113 [Loss Reduction of Printed Meanderline Dipole Antenna using Laminated Conductors](#)
Robin Raju, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 115 [Pre-Fractal Resonant Rings for Compact Spiral Antennas](#)
Jeremy Valleau, LAAS-CNRS, France
Herve Aubert, LAAS-CNRS, France
Olivier Ripoche, LAAS-CNRS, France
Anthony Bellion, CNES, France
Patrick Potier, DGA, France
Philippe Pouliguen, DGA, France
- 117 [Laminated Small H-Shaped Microstrip Patch Antenna with Improved Efficiency](#)
Robin Raju, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada

UWB Antennas and Systems

- 119 [Novel Structure and EM-Driven Design of Small UWB Monopole Antenna](#)
Slawomir Koziel, Reykjavik University, Iceland
Adrian Bekasiewicz, Gdansk University of Technology, Poland
- 121 [Ultra-Wideband Pattern Diversity Antenna with Cavity](#)
Navid Rezazadeh, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 123 [Towards a High Gain, Low Profile Directional Ultra Wideband Antenna](#)
Abdelhalim Mohamed, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- N/A [Rotational Circular SRR Loaded UWB Monopole Antenna with Controllable Multi Notch Function](#)
Chinmoy Saha, Indian Institute of Space Science and Technology (IIST), India
Latheef Ahmed Shaik, Indian Institute of Space Science and Technology (IIST), India
Yahia M.M. Antar, Royal Military College of Canada, Canada
Jawad Y. Siddiqui, Royal Military College of Canada, Canada
- 125 [Ultra Wideband Phased Array Antenna Using Slow Wave Microstrip Dielectric Loaded Phase Shifters](#)
Muhammad Ashraf, King Saud University, Saudi Arabia
Abdel Razik Sebak, Concordia University, Canada
Saleh Alshebeili, King Saud University, Saudi Arabia
Majeed Alkanhal, King Saud University, Saudi Arabia
- 127 [Cross-Polarization Reduction in a Directive Ultra-Wideband Antenna using Electromagnetic Polarization Filter](#)
Navid Rezazadeh, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada
- 129 [Towards Non Dispersive, Low Cross Polarization Omnidirectional Ultra Wideband Antennas](#)
Abdelhalim Mohamed, University of Manitoba, Canada
Lotfollah Shafai, University of Manitoba, Canada

Scattering and Diffraction

- 131 [Radiation and Scattering Characteristics of Antenna Array Covered Frequency Selective Shield](#)
Diana V. Semenikhina, Southern Federal University, Russian Federation
Andrey I. Semenikhin, Southern Federal University, Russian Federation
Yury V. Yukhanov, Southern Federal University, Russian Federation
- 133 [Improvement of Shadowing with Iterative Physical Optics for Radiation Pattern of Mounted Antennas](#)
Antoine Thomet, IETR Nantes, France
Gildas Kubické, DGA/DT/MI (Direction Générale de l'Armement–Direction Technique–Maîtrise de l'Information), France
Christophe Bourlier, IETR Nantes, France
Philippe Pouliguen, DGA/DS/MRIS (Direction Générale de l'Armement–Direction de la Stratégie–Mission pour la Recherche et l'Innovation Scientifique), France
- 135 [Sea Proximity Influence Over EM Plane Wave Scattering Using the Finite Element Method](#)
Murilo Silva, Federal Institute of Bahia, Brazil
Lurimar Batista, Federal Institute of Bahia, Brazil

Remote Sensing

137 [A Derivation of the Radar Cross Section of an Iceberg for a Pulsed High Frequency Radar](#)

Bernard Ryan, Memorial University, Canada

Eric Gill, Memorial University, Canada

139 [High Frequency Radar Clutter Power for Mixed Ionosphere-Ocean Propagation](#)

John Walsh, Memorial University of Newfoundland, Canada

Shuyan Chen, Memorial University of Newfoundland, Canada

Eric Gill, Memorial University of Newfoundland, Canada

Weimin Huang, Memorial University of Newfoundland, Canada

141 [A Study of the Total Recording System for MBC with FM Broadcast Wave](#)

Tomoyuki Saito, National Defense Academy, Japan

Toshihisa Kamei, National Defense Academy, Japan

Metamaterials

- 143 [High-Gain Bow-Tie Antenna Array using Low-Index Metamaterial](#)
Abdolmehdi Dadgarpour, INRS-EMT, University of Québec, Canada
Behnam Zarghooni, INRS-EMT, University of Québec, Canada
Tayeb A. Denidni, INRS-EMT, University of Québec, Canada
- 145 [Polarization-Independent Tunable Reflector](#)
Tianwei Deng, National University of Singapore,
Ruifeng Huang, Minelab Electronics Pty Ltd, Australia
Peng Khiang Tan, National University of Singapore, Singapore
- 147 [Electrically Small Particles for Harvesting and Channeling Infrared Energy](#)
Mohammed AlShareef, University of Waterloo, Canada
Omar Ramahi, University of Waterloo, Canada

Special Session: Astronomical Observations at Radio Wavelengths

9 [Designing Antennas for the Aperture Array SKA-Low Instrument: A System Perspective](#)

Eloy de Lera Acedo, University of Cambridge, United Kingdom
Nima Razavi-Ghods, University of Cambridge, United Kingdom
Andrew J. Faulkner, University of Cambridge, United Kingdom
Jan Geralt bij de Vaate, ASTRON, Netherlands

1 1 [Mid Frequency Aperture Array Technology Developments for the SKA](#)

Jan Geralt Bij de Vaate, ASTRON, Netherlands
Pieter Benthem, ASTRON, Netherlands
Steve Torchinsky, Observatoire de Paris, France
David Zhang, University of Manchester, United Kingdom
Roel Witvers, ASTRON, Netherlands
Raymond van den Brink, ASTRON, Netherlands

[Improving the Murchison Widefield Array Tile Model for Polarimetry](#)

Adrian Sutinjo, Curtin University, Australia
Shantanu Padhi, Curtin University, Australia
Randall Wayth, Curtin University, Australia
Peter Hall, Curtin University, Australia
Steven Tingay, Curtin University, Australia
John O'Sullivan, Formerly of CSIRO CASS, Australia
Emil Lenc, The University of Sydney, Australia

[Optical Design of DVA-1, A Prototype Antenna for The SKA Mid-Band Array](#)

Lynn Baker, Consultant, United States
William A. Imbriale, Jet Propulsion Laboratory, United States

1 [Development of the Dish Verification Antenna-1 for the Square Kilometre Array](#)

Gary Hovey, National Research Council, Canada
Gordon Lacy, National Research Council, Canada
Peter Byrnes, National Research Council, Canada
Joeleff Fitzsimmons, National Research Council, Canada
Matt Fleming, Minex Engineering Corporation, United States

[Hybrid Cryogenic Low Noise Amplifier for the MeetKAT Array](#)

Frank Jiang, National Research Council, Canada
Stéphane Claude, National Research Council, Canada
Dominic Garcia, National Research Council, Canada

6 [The First CMOS LNA on a Radio Telescope](#)

Leonid Belostotski, University of Calgary, Canada
James Haslett, University of Calgary, Canada
Bruce Veidt, NRC, Canada
Thomas Landecker, NRC, Canada
Andrew Gray, NRC, Canada
Gary Hovey, NRC, Canada
Ev Sheehan, NRC, Canada
Rob Messing, NRC, Canada

[Analysis of the ADC Resolution for Radio Astronomy Applications](#)

Eugene Zailer, University of Calgary, Canada
Troy Graham, University of Calgary, Canada
Leonid Belostotski, University of Calgary, Canada
Rene Plume, University of Calgary, Canada
Russ Taylor, University of Calgary, Canada

Microwave and Millimeter Wave Antennas

6 A Microstrip Leaky-Wave Antenna with Two Symmetrical Beams Towards Sides for Fixed-Frequency Dual-Beam Scanning

Debabrata K. Karmokar, Macquarie University, Australia

Karu P. Esselle, Macquarie University, Australia

Stuart G. Hay, CSIRO, Australia

Fast Multi-Objective Antenna Design Through Variable-Fidelity EM Simulations

Slawomir Koziel, Reykjavik University, Iceland

Adrian Bekasiewicz, Gdansk University of Technology, Poland

Wlodzimierz Zieniutycz, Gdansk University of Technology, Poland

1 2 A Dual Band Microstrip Dipole Antenna

Mohammad Maula, University of Manitoba, Canada

Lotfollah Shafai, University of Manitoba, Canada

A 24-GHz Microstrip Grid Array Antenna Excited by Capacitive Slot

Zihao Chen, Nanyang Technological University, Singapore

Yue Ping Zhang, Nanyang Technological University, Singapore

A 94-GHz LTCC Microstrip Grid Array Antenna for Imaging Application

Zihao Chen, Nanyang Technological University, Singapore

Yue Ping Zhang, Nanyang Technological University, Singapore

Development of a MEMS-Enabled Frequency Selective Surface

Mojtaba Safari, University of Manitoba, Canada

Cyrus Shafai, University of Manitoba, Canada

Lotfollah Shafai, University of Manitoba, Canada

18 Self-Assembled Helical Microstructures for Millimeter-Wave Helical Antennas

Sae-Won Lee, Simon Fraser University, Canada

M. (Ash) Parameswaran, Simon Fraser University, Canada

Rodney G. Vaughan, Simon Fraser University, Canada

EMI/EMC

- 1 [Evaluation of the Transient Transmitted Field into a Rectangular Enclosure by Marching-On-In-Degree Approach](#)
Mahshid Zoghi, Amirkabir University of Technology, Iran
Parisa Dehhoda, Amirkabir University of Technology, Iran
S. H. S. Sadeghi, Amirkabir University of Technology, Iran
- 1 [Improvement Multipactor Discharge of Microwave Components by Micro-Porous Surface](#)
Wanzhao Cui, China Academy of Space Technology (Xi'an), China

Mobile Radio Channel Modelling

1 [Application of Cognitive Radio Principles to Wireless Channel Sounding](#)

Robert White, University of British Columbia, Canada

David Michelson, University of British Columbia, Canada

1 [Use of Doppler Focusing to Resolve Spatial Channels from Moving Platforms](#)

Linli Cui, University of British Columbia, Canada

David Michelson, University of British Columbia, Canada

EBG Structures

"" Directive Beaming with Lens-Like Superstrates for Low Profile Fabry-Perot Cavity Antennas

Raheel Hashmi, Macquarie University, Australia

Karu P. Esselle, Macquarie University, Australia

Stuart G. Hay, CSIRO, Australia

"" Bandwidth Enhancement for RCS Reduction using Checkerboard EBG Surfaces

Wengang Chen, Arizona State University, United States

Constantine Balanis, Arizona State University, United States

"" Antenna Beam Forming using Holographic Artificial Impedance Surface

Sivaseetharaman Pandi, Arizona State University, United States

Constantine Balanis, Arizona State University, United States

A Compact Electromagnetic Band Gap Ground Controlled Tunable Dual Mode Band Pass Filter

Basudev Majumder, Indian Institute of Technology Bombay, India

Krishnamoorthy Kandasami, Indian Institute of Technology Bombay, India

Jayanta Mukherjee, Indian Institute of Technology Bombay, India

Kamla Prasan Ray, SAMEER-Center for Electromagnetics, India

Reconfigurable Zeroth Order and Half Wave Length Resonator Antenna for Pattern

Reconfiguration using Tunable EBG Structures

Krishnamoorthy Kandasami, Indian Institute of Technology Bombay, India

Basudev Majumder, Indian Institute of Technology Bombay, India

Jayanta Mukherjee, Indian Institute of Technology Bombay, India

Kamla Prasan Ray, SAMEER-Center for Electromagnetics, India

Special Session: Graphene, Metamaterials and Nano-Composites

Effective-Medium Properties of A Fully-Printed Biplanar Volumetric NRI-TL Metamaterial Lens [Invited]

Hoang-Linh Nguyen, University of Alberta, Canada
Ashwin Iyer, University of Alberta, Canada

2 Stepped Impedance Resonator Technique for Metamaterial Miniaturization [Invited]

Tayeb A. Denidni, INRS-EMT, University of Québec, Canada
Behnam Zarghooni, INRS-EMT, University of Québec, Canada

2 6 Surface Waves on Complementary Metasurfaces [Invited]

David Gonzalez-Ovejero, University of Siena, Italy
Enrica Martini, University of Siena, Italy
Stefano Maci, University of Siena, Italy

Weaving One-Way Threads into Non Reciprocal Meta-Surfaces: The Meta-Weaves [Invited]

Yarden Mazor, Tel-Aviv University, Israel
Ben Steinberg, Tel-Aviv University, Israel

10 Anisotropic/Isotropic Carbon-Fiber Nanocomposites for Emerging RF/Antenna/Microwave Applications [Invited]

Aidin Mehdipour, University of Toronto, Canada
Abdel R. Sebak, Concordia University, Canada
Christopher W. Trueman, Concordia University, Canada
Iosif D. Rosca, Concordia University, Canada
Suong V. Hoa, Concordia University, Canada
Tayeb A. Denidni, INRS, Canada

Terahertz Graphene Magnetoplasmons: Non-Reciprocity, Tunability and Gyrotropy [Invited]

Nima Chamanara, École Polytechnique de Montréal, Canada
Thomas Szkopek, McGill University, Canada
Christophe Caloz, Poly-Grames - École Polytechnique de Montréal, Canada

2 Large Area Graphene Electromagnetic Devices [Invited]

Thomas Szkopek, McGill University, Canada
Christophe Caloz, École-Polytechnique de Montréal, Canada
Helgi Skuli Skulason, Freescale Semiconductor Inc., United States

Analytic and Numerical Methods

[Johns Matrix Formulation of Inverse TLM Problems](#)

Poman So, University of Victoria, Canada

Wolfgang Hoefer, Faustus Scientific Corporation, Canada

****[Sensitivity of the Singularity Expansion Method Applied on Dipole Antenna Backscattering](#)

Francois Sarrazin, IETR, France

Ala Sharaiha, IETR, France

Philippe Pouliguen, DGA, France

Janic Chauveau, DGA, France

Patrick Potier, DGA, France

****[Analysis of Depolarized Electromagnetic Waves Propagated Through Random Medium by using Perturbation Method](#)

Yukihisa Nanbu, Sasebo National College of Technology, Japan

Mitsuo Tateiba, Kyushu University, Japan

Hosam El-Ocla, Lakehead University, Canada

****[D Electromagnetic Simulation of Integrative Antenna](#)

Kai Peng, China Academy of Space Technology (Xi'an), China

Song Jin, China Academy of Space Technology (Xi'an), China

Jinyong Fang, China Academy of Space Technology (Xi'an), China

[Modified Gaussian Elimination Technique using at Each Step an Equation with Original Coefficients](#)

Ioan R. Ciric, University of Manitoba, Canada

[A Vector-Based Divergence-Free Meshless Method](#)

Shunchuan Yang, The University of Electronic Science and Technology of China, China

Zhizhang (David) Chen, The University of Electronic Science and Technology of China, China

Yiqiang (Johnny) Yu, Dalhousie University, Canada

Sergey Ponomarenko, Dalhousie University, Canada

[Free Space Material Characterization using Genetic Algorithms](#)

Raenita Fenner, Loyola University MD, United States

Suzanne Keilson, Loyola University MD, United States