01) Scattering Methods in Complex Environments - ICEAA, organized by G. Schettini, K. Watanabe

chair 1 G. Schettini chair 2 K. Watanabe Monday, 14 14:30 – 17:40 room 201 **ICEAA**

14:30 – 14:50 Detection of void in reinforced concrete using a neural network

199 T. Tsuburaya, Fukuoka University, Japan; Z. Meng, Fukuoka University, Japan

14:50 – 15:10 Fundamental Study on Scattering by a Thick Slit and a Rectangular Trough on the Back Side of a Conducting Plate -- E-polarization Case

481 R. Sato, Niigata University, Japan; H. Shirai, Chuo Univeristy, Japan

15:10 – 15:30 A physics-informed neural network approach to TM-polarized plane wave scattering by a dielectric cylinder

244 K. Ishida, Kyushu Sangyo University, Japan; T. Matsuoka, Kyushu Sangyo University, Japan

15:30 – 15:50 Incoherent Optical Diffraction Simulation by Micromirror Structures for Design of Optical Computing System

294 H. Nishikawa, Kitami Institute of Technology, Japan; J. Sugisaka, Kitami Institute of Technology, Japan; K. Hirayama, Kitami Institute of Technology, Japan

15:50 – 16:10 Dual-band reflectarray with frequency-dependent polarization response combining cross-type polarization conversion elements and omega-type resonant elements

184 Y. Murayama, Doshisha University, Japan; K. Hamada, Doshisha University, Japan; M. Ohira, Doshisha University, Japan; H. Deguchi, Doshisha University, Japan; M. Tsuji, Doshisha University, Japan

16:10 – 16:30 A Study on Spectral-Domain Approach to Electromagnetic Scattering Problem of Many Conducting Strips Arranged at Equal Intervals

460 K. Watanabe, Fukuoka Institute of Technology, Japan

17:00 – 17:20 Symmetry properties of reciprocity for reflection in anisotropic periodic structures

169 H. Wakabayashi, Faculty of Computer Science and Systems Engineering, Okayama Prefectural University, Japan; J. Yamakita, Professor Emeritus, Okayama Prefectural University, Japan

17:20 – 17:40 FDTD Analysis of a Stepped Plasmonic Grating Coupler

289 M. Yoshizawa, Hosei University, Japan; J. Shibayama, Hosei University, Japan

02) EMC/EMI/EMP - ICEAA

chair 1 T. Onishi chair 2 G. Schettini Monday, 14 17:40 – 18:40 room 201 **ICEAA**

17:40 – 18:00 Long-Term Monitoring of Electromagnetic Field Levels in Japan

115 T. Onishi, National Institute of Information and Communications Technology, Japan; K. Tobita, National Institute of Information and Communications Technology, Japan; M. Taki, National Institute of Information and Communications Technology, Japan

18:00 – 18:20 Study on Capacitive Coupling in Stripline Structures with Different Waveforms for Crosstalk Analysis

504 N. Rahayu, Institut Teknologi Bandung, Indonesia; T.D. Rachmildha, Institut Teknologi Bandung, Indonesia; L.O. Nur, Telkom University, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

18:20 – 18:40 Consistent vs. high-Impact IEMI excitations under increasing system uncertainty

323 M. A. Echeverri Bautista, TNO, Netherlands

03) Antenna theory and design - ICEAA

chair 1 C. Hynes chair 2 T.-Y. Lin Monday, 14 14:30 – 18:40 room 202 **ICEAA**

14:30 – 14:50 Design of a Dual-Port Efficient Rectangular Slot Antenna Using a Capacitive Decoupling Technique for SWIPT Applications

260 J.T. Kubwimana, University of Rouen Normandy, ESIGELEC, IRSEEM, France; C.M.A. Niamien, University of Rouen Normandy, ESIGELEC, IRSEEM, France; R. Khalifeh, University of Rouen Normandy, ESIGELEC, IRSEEM, France

14:50 – 15:10 Design Attempt of A Dual-Port Single-Band Rectangular Slot Antenna for SWIPT Applications

259 J.T. Kubwimana, University of Rouen Normandy, ESIGELEC, IRSEEM, France; C.M.A. Niamien, University of Rouen Normandy, ESIGELEC, IRSEEM, France; R. Khalifeh, University of Rouen Normandy, ESIGELEC, IRSEEM, France

15:10 – 15:30 Scanning performance of circularly polarized transmitarrays using linearly polarized cells: the role of periodicity

526 R. T. Horst, CEA-Leti, Univ. Grenoble Alpes, France; F. Foglia Manzillo, CEA-Leti, Univ. Grenoble Alpes, France; R. Sauleau, University of Rennes, CNRS, IETR - UMR CNRS 6164, France; A. Clemente, CEA-Leti, Univ. Grenoble Alpes, France

15:30 – 15:50 A 150-GHz high-gain LTCC antenna with dielectric-enhanced SIW transition

202 T.Y. Lin, S.G. Lin, Y.C. Chang, C. Hsieh, P.Y. Yin, D.C. Chang, Taiwan Semiconductor Research Institute, Taiwan

15:50 – 16:10 Low-profile Huygens source dielectric resonator antenna design using characteristic modes

221 A. Boiteau, ENAC, France; C. Morlaas, ENAC, France; R. Pascaud, ISAE-SUPAERO, France; A. Chabory, ENAC, France; V. Laquerbe, CNES, France; P. Pouliguen, AID/DGA, France

16:10 – 16:30 A new helix antenna operational mode with superdirectivity

241 C.G. Hynes, Simon Fraser University, Canada; R.G. Vaughan, Simon Fraser University, Canada

17:00 – 17:20 Wide-Stopband Millimeter-Wave Filtering Magnetoelectric Dipole Antenna and Its Application in an E-plane Phased Array

254 C.K. Hu, Beijing Jiaotong University, China - People; Y.J. Li, Beijing Jiaotong University, China - People; J.Y. Tan, Beijing Jiaotong University, China - People; J.H. Wang, Beijing Jiaotong University, China - People

17:20 – 17:40 Superdirective linearly polarized axial-mode helical slot antenna

255 C.G. Hynes, Simon Fraser University, Canada; R.G. Vaughan, Simon Fraser University, Canada

17:40 – 18:00 Design and Analysis via Circuit Modeling of Multi-Band Patch Antenna with Single I-Shaped Slot for mmWave 5G and Sensing Applications

429 B. J. Mugiraneza, University of the Ryukyus, Japan; M. Saito, University of the Ryukyus, Japan

18:00 – 18:20 Dual-band horizontally oriented CDRA array

402 J. Žemgulyte, P. Ragulis, R. Simniškis, M. Sadauskas, Center for Physical Sciences and Technology, Lithuania; A.G. Belous, O.I. V'yunov, V. I. Vernadsky Institute of General and Inorganic Chemistry, National Academy of Sciences of Ukraine, Ukraine; Z.A. Kancleris, Center for Physical Sciences and Technology, Lithuania

18:20 – 18:40 Performance Analysis of Dual-Polarized Rectangular Panel Antenna Arrays for 5G NR Base Stations

377 A. Shastri, Banasthali Vidyapith, India; S. Bandopadhaya, Banasthali Vidyapith, India; A. Shingh, Banasthali Vidyapith, India; M. G. Siddiqui, Banasthali Vidyapith, India; Y. S. Naruka, Banasthali Vidyapith, India; L. F. Guerrero-Vasquez, Universidad Politecnica Salesiana, Ecuador

04) Propagation models - APWC

chair 1 J. Honda chair 2 A. Papatsoris Monday, 14 14:30 – 15:50 room 203 **APWC**

14:30 – 14:50 Statistical Analysis of Aircraft Position Estimates on Airport Surface During Stationary Conditions

484 J. Honda, Electronic Navigation Research Institute, Japan; T. Otsuyama, Electronic Navigation Research Institute, Japan; Y. Kakubari, Electronic Navigation Research Institute, Japan; K. Matsunaga, Electronic Navigation Research Institute, Japan

14:50 – 15:10 Deriving rainfall statistics for radiowave propagation studies in Greece

262 A. D. Papatsoris, International Hellenic University, Greece; C. Houli, International Hellenic University, Greece; K. Giantsidou, International Hellenic University, Greece

15:10 – 15:30 Learning excess path loss over irregular terrain: CNN to attention with physics-informed scalars

284 E. Greenberg, University of Haifa, Israel; I. Klein, University of Haifa, Israel

15:30 – 15:50 Circularly Polarized UHF RFID Propagation Simulation in a Tunnel Using Unreal Engine 5 and MATLAB

396 Z.X. Boey, Universiti Tunku Abdul Rahman, Malaysia; Q.P. Soo, Universiti Tunku Abdul Rahman, Malaysia; S.Y. Lim, University of Nottingham Malaysia Campus, Malaysia; E.H. Lim, Universiti Tunku Abdul Rahman, Malaysia; P.L. Toh, Universiti Tunku Abdul Rahman, Malaysia; K.H. Yeap, Universiti Tunku Abdul Rahman, Malaysia

05) Electromagnetic theory - ICEAA

chair 1 G.N. Georgiev chair 2 T. Melamed Monday, 14 15:50 – 18:40 room 203 **ICEAA**

15:50 – 16:10 Diffraction by a Semi-infinite Parallel-Plate Waveguide with Fractional Boundary Conditions

443 T. Nagasaka, Ashikaga University, Japan; K. Kobayashi, Chuo University, Japan

16:10 – 16:30 Phase-space design of electromagnetic (light) structures in the frequency and time domains

136 T. Melamed, School of Electrical and Computer Engineering, Ben Gurion University of the Negev, Beer Sheva, Israel

17:00 – 17:20 Dr. Mariana N. Georgieva's Complex Numbers: Evolution from $M^{-}_{1,r}(\theta_{1,r})$ to the Invariant Limits $M^{-}_{1,\aleph}(\theta_{1,\aleph})$ of Sequences of Transcendental Kummer Function Zeros and Their Universal Properties in Electromagnetic Theory

496 G. N. Georgiev, Consulting and Researcher in Physics, Mathematics and Computer Sciences, Bulgaria; M. N. Georgieva-Grosse, Consulting and Researcher in Physics, Mathematics and Computer Sciences, Bulgaria

17:20 – 17:40 Development of a Transparent Flat Glass Microwave Absorber for Electronic Toll Collection Systems

177 F.F. Furuya, Tokyo City University, Japan; Y.O. Okano, Tokyo City University, Japan

17:40 – 18:00 Development of a Three-dimensional UHF RF-ID Reader/Writer Antenna for Automated Cash Registers

194 N.M. Matsumoto, Tokyo City University, Japan; Y.O. Okano, Tokyo City University, Japan

18:00 – 18:20 Oblique-incidence scattering of a bianisotropic slab

468 M. J. Havrilla, Air Force Institute of Technology, United States

18:20 – 18:40 A Unifying Local Propagation Condition (ULPC) Transition Index: Multi-Band Resonance Localization in Full-Wave Electromagnetic Analysis

491 A. Pirisi, Politecnico di Milano, Italy; G.F. Martinez, Politecnico di Milano, Italy; R.E. Zich, Politecnico di Milano, Italy

06) Multiscale and Multiphysics Computational Techniques - ICEAA, organized by S. Adrian, Y. Brick

chair 1 S. Adrian chair 2 Y. Brick Monday, 14 14:30 – 16:30 room 204 **ICEAA**

14:30 – 14:50 Multiphysics Simulation for Investigating Interactions between Electromagnetic Fields and Antiferromagnets

360 S. Kobayashi, Nihon University, Japan; T. Mukita, Nihon University, Japan; S. Kishimoto, Nihon University, Japan; K. Nakagawa, Nihon University, Japan; S. Ohnuki, Nihon University, Japan

14:50 – 15:10 Physics-encoded graph element networks for thermal surrogate modeling and heat source localization on irregular FEM meshes

518 N. Hosen, Howard University, United States; M. Anee, Howard University, United States; S. Yan, Howard University, United States

15:10 – 15:30 A Cylindrical-Wave Spectral-Domain MoM Formulation for Planar Currents on a Layered Substrate

332 C. Renard, UCLouvain, Belgium; J. Cavillot, UCLouvain, Belgium; D. Lederer, UCLouvain, Belgium; C. Craeye, UCLouvain, Belgium

15:30 – 15:50 Toward More Compressible Domain Decomposition Integral Equation Formulations for Homogeneous Penetrable Scatterers

125 B. Diner, Ben-Gurion University of the Negev, Israel; Y. Dahan, Ben-Gurion University of the Negev, Israel; Y. Brick, Ben-Gurion University of the Negev, Israel

15:50 – 16:10 A Study on Graph Coloring for Race-Free Parallel Construction of System Matrices in Integral Equation Discretizations

143 D. Jukic, Universität Rostock, Germany; B. Hofmann, Stanford University, United States; S.B. Adrian, Universität Rostock, Germany

16:10 – 16:30 A boundary element--cable method for modeling neuronal responses to external electric fields

422 V. sabino, Purdue University, United States; L. Gomez, Purdue University, United States

07) Fast and Efficient Solvers and Stable Discretizations - ICEAA, organized by F. Andriulli

chair 1 F. Andriulli chair 2 Monday, 14 17:00 – 18:20 room 204 **ICEAA**

17:00 – 17:20 High-Contrast Stable Potential-Based VIE

273 M. Nekoie, Purdue University, United States; S. S. Vaezi, Purdue University, United States; L. J. Gomez, Purdue University, United States

17:20 – 17:40 Reflective-Shield Mimicking Multipole-Based Generalized Source Integral Equation Kernels for Well-Conditioning and Compressibility

151 Y. Dahan, Ben-Gurion University of the Negev, Israel; S. B. Adrian, Universität Rostock, Germany; L. B. Klinkenbusch, Christian-Albrechts-Universität zu Kiel, Germany; A. Boag, Tel Aviv University, Israel; Y. Brick, Ben-Gurion University of the Negev, Israel

17:40 – 18:00 Asymptotic spectral insights behind fast direct solvers for high-frequency electromagnetic integral equations on non-canonical geometries

541 V. Giunzioni, Politecnico di Torino, Italy; C. Henry, IMT Atlantique, France; A. Merlini, IMT Atlantique, France; F. P. Andriulli, Politecnico di Torino, Italy

18:00 – 18:20 Multiresolution Preconditioning with Origami Basis Functions for Curvature-Aware Adaptive h-Refinement in Method of Moments

506 V.F. Martin, Universidad Rey Juan Carlos, Spain; L. Landesa, University of Extremadura, Spain; J.M. Taboada, University of Extremadura, Spain; F. Vipiana, Politecnico di Torino, Italy

08) Recent advancement of electromagnetic theory - ICEAA, organized by H. Shirai

chair 1 H. Shirai chair 2 Tuesday, 15 08:30 – 13:00 room 201 **ICEAA**

08:30 – 08:50 Lateral Wave Excitation for Dielectric Wedge Diffraction Problems

126 H. Shirai, Chuo University, Japan

08:50 – 09:10 Convergence Analysis of Slit Diffraction for H-Polarized Waves

469 H. Serizawa, NIT, Numazu College, Japan

09:10 – 09:30 Design of Schwarzschild type lens for focusing of optical vortex beam by using MoM analysis

247 H. Kawaguchi, Muroran Institute of Technology, Japan; K. Matsuo, Hiroshima University, Japan; M. Katoh, Hiroshima University, Japan; C. Wang, National Institute for Fusion Science, Japan; H. Nakamura, National Institute for Fusion Science, Japan

09:30 – 09:50 X/Ka-band groove-loaded horn antenna with low cross-polarization

180 H. Nishida, Doshisha University, Japan; K. Nishida, Doshisha University, Japan; M. Ohira, Doshisha University, Japan; H. Deguchi, Doshisha University, Japan

09:50 – 10:10 Boundary Integral Equation Formulation for Analysis of Two-Dimensional Photonic Crystal Waveguides with Resonators under TE Incidence

307 M. Tanaka, Gifu University, Japan

10:10 – 10:30 Analysis of the Heating Characteristics of a Defrosting Device Utilizing Electromagnetic Resonance

207 K. Kikuchi, Graduate School of Toyo University, Japan; Y. Shindo, Toyo University, Japan

11:00 – 11:20 Deep Tawing System Using Electromagnetic Resonant Mode

208 K. Shimegi, Graduate School of Toyo University, Japan; Y. Shindo, Toyo University, Japan

11:20 – 11:40 Heating Experiment of Thermal Rehabilitation System for Knee OA Using Agar Phantom Including Simulated Bone

216 N. Matsumura, Graduate School of Toyo University, Japan; Y. Shindo, Toyo University, Japan

11:40 – 12:00 Imaging Radar Simulation Using Compressed Sensing and FDTD Method

354 Y. Kato, Nihon University, Japan; S. Kishimoto, Nihon University, Japan; S. Ohnuki, Nihon University, Japan

12:00 – 12:20 Fundamental Study on Change Detection in Non-primary Scattering Mechanism Using Time-Series Dual Polarimetric Data

479 R. Sato, Niigata University, Japan; H. Niwa, Niigata University, Japan; H. Yamada, Niigata University, Japan; Y. Yamaguchi, Niigata University, Japan

12:20 – 12:40 Positioning Performance Evaluation of Compact High-Performance Antennas with Low Ground-Plane Dependency

145 D. Izawa, Chuo University, Japan; H. Sakamoto, Mitsubishi Electric Corporation, Japan; D. Yamamoto, Chuo University, Japan; Y. Suwabe, Chuo University, Japan; Y. Inasawa, Chuo University, Japan; S. Yamaguchi, Mitsubishi Electric Corporation, Japan; T. Takahashi, Mitsubishi Electric Corporation, Japan

12:40 – 13:00 A numerical analysis of electromegnetic wave scattering from sea surface based on the physical optics

121 K. Niino, Mitsubishi Electric Corporation, Japan; H. Suenobu, Mitsubishi Electric Corporation, Japan; K. Nishimoto, Mitsubishi Electric Corporation, Japan; T. Takahashi, Mitsubishi Electric Corporation, Japan

09) Advances in RF and Microwave Circuits, Antennas, and Applications - ICEAA, organized by H.A. Ulku, T. Haykir Ergin

chair 1 T.H. Ergin chair 2 H.A. Ulku Tuesday, 15 14:30 – 16:30 room 201 **ICEAA**

14:30 – 14:50 Design and Simulation of a 25–27 GHz Low-Phase-Noise LC-VCO in 65 nm CMOS Technology for mm-Wave Communication Applications

400 M.C. Ögütveren, Yeditepe University, Turkey; I. Sisman, Profen Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

14:50 – 15:10 Design of a high-gain and low-noise four-stage X-band LNA for microwave receiver applications

399 S. Sarikazal, Yeditepe University, Turkey; I. Sisman, Profen Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

15:10 – 15:30 An Adaptive OTA-Based Gm-C Filter for IF/Baseband Signal Conditioning in RF Receivers in 65nm CMOS

398 T. Haykir Ergin, Yeditepe University, Turkey; B. Ilgaz, Profen Technologies, Turkey; I. Sisman, Profen Technologies, Turkey

15:30 – 15:50 A Compact Dual-Band Ka/L Rotary Joint for Reliable Connectivity in Mobile Sensing and Communication Systems

397 B. Ilgaz, Profen Technologies, Turkey; I. Sisman, Profen Technologies, Turkey; T. Haykir Ergin, Yeditepe University, Turkey

15:50 – 16:10 Compact Triple-Band Microstrip Patch Antenna for GSM and Wi-Fi Applications

485 T. Haykir Ergin, A. Keskin,H.A. Ülkü, Yeditepe University, Turkey

16:10 – 16:30 Bandwidth Enhancement of a Crescent-Shaped Microstrip Patch Antenna Using Etched Inner Crescent Slots

532 E. Ficici, Yeditepe University, Turkey; S. Cakmak, Yeditepe University, Turkey; G. Koncel, Yeditepe University, Turkey; H.A. Ulku, Yeditepe University, Turkey

10)Electromagnetic models,geophysical products for microwave signal-of-opportunity reflectometry-ICEAA,organized J.Campbell,D.Comite,M.Moghaddam

chair 1 J. Campbell chair 2 D. Comite, M. Moghaddam Tuesday, 15 17:00 – 18:40 room 201 **ICEAA**

17:00 – 17:20 Cross-validating the Weather System Follow-on Microwave soil moisture product using Cyclone Global Navigation Satellite System data

251 J.D. Ouellette, US Naval Research Laboratory, United States; C.M. Selman, US Naval Research Laboratory, United States; E.M. Twarog, US Naval Research Laboratory, United States; J.P. Bobak, US Naval Research Laboratory, United States; M.H. Bettenhausen, US Naval Research Laboratory, United States; M.M. Al-Khaldi, The Ohio State University, United States; J.T. Johnson, The Ohio State University, United States

17:20 – 17:40 Performance of China's Tianmu-1 GNSS-R Satellite Constellation Observations in Land and Ocean Remote Sensing Applications

117 F. Guo, Wuhan University, China - People; W.T. Yang, Wuhan University, China - People; Z.Y. Zhang, Wuhan University, China - People; G.J. Hu, Wuhan University, China - People; X.H. Zhang, Wuhan University, China - People

17:40 – 18:00 Texture analysis of GNSS-Reflectometry delay-Doppler maps using electromagnetic scattering model

411 A. Kannan, University of Southern California, United States; A. Melebari, King Abdulaziz City for Science and Technology (KACST), Saudi Arabia; J.D. Campbell, University of Southern California, United States; M. Moghaddam, University of Southern California, United States

18:00 – 18:20 CYGNSS level 1 (L1) data analysis in the Goddard Earth Observing System (GEOS) Land Data Assimilation System (LDAS)

524 J. D. Campbell, University of Southern California, United States; A. Kannan, University of Southern California, United States; M. Moghaddam, University of Southern California, United States

18:20 – 18:40 Spectral geometry-informed neural interpolation for GNSS-R soil moisture retrieval

511 G. Ciabatti, Sapienza, University of Rome, Italy; S. Daftry, Jet Propulsion Laboratory, California Institute of Technology, United States; D.D. Bloisi, International University of Rome, Italy; D. Comite, Sapienza, University of Rome, Italy; V. Suriani, Sapienza, University of Rome, Italy;

11) Antenna Technologies - APWC

chair 1 J. Kelly chair 2 L. Kulas Tuesday, 15 08:30 – 13:00 room 202 **APWC**

08:30 – 08:50 Power Amplifier–Antenna Co-Design in Active Arrays Using Newton's Method and Matching-Circuit Embedding

331 I. Shilinkov, Chalmers University of Technology, Sweden; R. Maaskant, Chalmers University of Technology, Sweden; G. Lasser, Chalmers University of Technology, Sweden

08:50 – 09:10 Enhancing Radiation Coverage for Wi-Fi 7 MIMO Systems via Pattern Reconfigurable Antennas

155 D. L. HUANG, Pegatron Corporation, Taiwan; M. J. Chang, Pegatron Corporation, Taiwan

09:10 – 09:30 Design of Planar Switched Beam Antenna with Butler Matrix Feeding Network

512 M. Daud, Malikussaleh University, Indonesia; F.A. Nasution, Institut Teknologi Bandung, Indonesia; Z. Zulfi, Telkom University, Indonesia; N.M. Adriansyah, Telkom University, Indonesia; M.R. Effendi, Institut Teknologi Bandung, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

09:30 – 09:50 Towards jamming mitigation using low-cost energy efficient ESPAR antenna

495 R. Baranowski, Gdansk University of Technology, Poland; M. Groth, Gdansk University of Technology, Poland; K. Nyka, Gdansk University of Technology, Poland; L. Kulas, Gdansk University of Technology, Poland

09:50 – 10:10 A low-profile wideband dipole antenna loaded with four symmetric stepped dielectric sectors for sub-6 GHz applications

458 Y. Sun, Aalborg University, Denmark

10:10 – 10:30 Low-Profile Meta-Lens Superstrate for Patch Antenna Gain Enhancement

270 S. Meerabeab, Electrical, Information and Communication Engineering, Kanazawa University, Japan; T. Imachi, Electrical, Information and Communication Engineering, Kanazawa University, Japan; S. Yagitani, Electrical, Information and Communication Engineering, Kanazawa University, Japan

11:00 – 11:20 Microstrip Patch Antenna Utilising Ground Plane Control to Achieve Beam Switching

174 J. R. Kelly, Queen Mary University of London, United Kingdom

11:20 – 11:40 Anchor Node Antenna Array Configurations for Dual Plane PDoA/AoA in UWB Indoor Localization

489 H. Raghib Hokmabadi, Antenna and High Frequency Research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; W. U. R. Khan, Antenna and High Frequency Research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; P. McEvoy, Antenna and High Frequency Research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; M. J. Ammann, Antenna and High Frequency Research Centre (AHFR), Technological University Dublin (TuDublin), Ireland

11:40 – 12:00 Experimental Characterization of DW3000 UWB Transceivers for AoA-Based Indoor Localization

418 H. Raghib Hokmabadi, Antenna and High Frequency research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; W. U. R. Khan, Antenna and High Frequency research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; P. McEvoy, Antenna and High Frequency research Centre (AHFR), Technological University Dublin (TuDublin), Ireland; M. J. Ammann, Antenna and High Frequency research Centre (AHFR), Technological University Dublin (TuDublin), Ireland

12:00 – 12:20 Electromagnetic Coexistence of a Communication Antenna and a WPT Coil in a Smart Contact Lens

220 A.W. Essa, XPANCEO, United Arab Emirates; D.A. Dobrykh, XPANCEO, United Arab Emirates; V.A. Lenets, XPANCEO, United Arab Emirates; A.P. Slobozhanyuk, XPANCEO, United Arab Emirates; A.V. Arsenin, XPANCEO, United Arab Emirates; V.S. Volkov, XPANCEO, United Arab Emirates; P.B. Ginzburg, School of Electrical Engineering, Tel Aviv University, Tel Aviv 69978, Israel, Israel; S.A. Tretyakov, Aalto University, Espoo, Finland, Finland; A.R. Vilenskiy, XPANCEO, United Arab Emirates

12:20 – 12:40 Recent developments of smartwatch antennas: a review

380 A.T. Zhang, Xidian University, China - People; J.Q. Zhu, Xidian University, China - People; Y. Liu, Xidian University, China - People

12:40 – 13:00 Beam-Steerable 300-GHz-Wave Radiation Enabled by 3D-Printed Fresnel Zone-Plate Integration

130 M. Che, Kyushu University, Japan; B. Li, Kyushu University, Japan; S. Ye, Kyushu University, Japan; H. Ssali, Kyushu University, Japan; K. Kato, Kyushu University, Japan

12) Recent advances in electromagnetics for MRI - ICEAA, organized by G. Carluccio, D. Erricolo, R. Lattanzi

chair 1 G. Carluccio chair 2 D. Erricolo, R. Lattanzi Tuesday, 15 14:30 – 16:10 room 202 **ICEAA**

14:30 – 14:50 Modelling Beat Pilot Tone patterns in 3T MRI scanner loaded by different human models

131 M. Kozlov, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Germany; K.J. Pine, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Germany; H.E. Möller, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Germany; N. Weiskopf, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Germany

14:50 – 15:10 A 2D Analytical Solution to Determine the Properties of High-Permittivity Pads for Cardiac Applications in MRI

487 G. Carluccio, Università degli studi di Napoli Federico II, Italy; V. Miranda, National Inter-University Consortium for Telecommunications, Italy; C. Collins, New York University, United States; D. Riccio, Università degli studi di Napoli Federico II, Italy; G. Ruello, Università degli studi di Napoli Federico II, Italy

15:10 – 15:30 Evaluation of the SNR in Spherical Geometries when Receive Arrays are Used with High-Permittivity Materials

514 G. Carluccio, University of Napoli Federico II, Italy; V. Miranda, National Inter-University Consortium for Telecommunications, Italy; C. M. Collins, New York University, United States; D. Riccio, University of Napoli Federico II, Italy; G. Ruello, University of Napoli Federico II, Italy

15:30 – 15:50 Numerical Comparison of 5 Approaches to Improve MRI Performance for MR-guided Transcranial Focused Ultrasound at 3T

492 G. Carluccio, University of Napoli Federico II, Italy; C. M. Collins, NYU Grossman School of Medicine, United States

15:50 – 16:10 Helmholtz wireless coil load sensitivity study at 1.5T MRI

467 P. Tikhonov, ITMO University, Russian Federation; M. Kozhenkov, ITMO University, Russian Federation; T. Kislova, ITMO University, Russian Federation; A. Fedotov, ITMO University, Russian Federation; A. Hurshkainen, ITMO University, Russian Federation

13) Electromagnetics in biology and medicine - ICEAA

chair 1 G. Carluccio chair 2 C. Ramos Flores Tuesday, 15 17:00 – 18:40 room 202 **ICEAA**

17:00 – 17:20 A Compact Slotted Patch UWB Monopole Antenna Sensor for Non-Invasive Breast Tumor Detection

452 B. Tlili, Rochester Institute of Technology | (RIT Dubai), United Arab Emirates; Y. Benchoubane, Rochester Institute of Technology | (RIT Dubai), United Arab Emirates; M. Alhomsi, Rochester Institute of Technology | (RIT Dubai), United Arab Emirates; A. Abdi, Rochester Institute of Technology | (RIT Dubai), United Arab Emirates; M. Keshkar, Rochester Institute of Technology | (RIT Dubai), United Arab Emirates

17:20 – 17:40 A Metasurface Detector for Breast Cancer Detection

416 M. Hernandez, University of Waterloo, Canada; O. Ramahi, University of Waterloo, Canada

17:40 – 18:00 Exposure assessment of the gestational breast at 6 GHz

333 A. Hadi, Université de Rennes, CNRS, CentraleSupélec, Nantes Université, IETR UMR 6164, France; R. Rizzo, Université de Rennes, CNRS, CentraleSupélec, Nantes Université, IETR UMR 6164, France; M. Zhadobov, Université de Rennes, CNRS, CentraleSupélec, Nantes Université, IETR UMR 6164, France; G. Sacco, Université de Rennes, CNRS, CentraleSupélec, Nantes Université, IETR UMR 6164, France

18:00 – 18:20 Quantitative analysis of additive noise effects on microwave image quality

423 C.A. Ramos Flores, McGill University, Canada; A. Poisot Palacios, McGill University, Canada; C. Jeffery, McGill University, Canada; E. Razzicchia, McGill University, Canada; E. Porter, McGill University, Canada

18:20 – 18:40 Near-Field Coupling Connectors for mmWave On-Body Systems on Flexible Substrates

405 E. Binot, IETR, France; D. Nikolayev, IETR, France; G. Sacco, IETR, France

14) Modulated and Reconfigurable RF Metasurfaces - ICEAA, organized by U. Khankhoje

chair 1 U. Khankhoje chair 2 Tuesday, 15 08:30 – 10:30 room 203 **ICEAA**

08:30 – 08:50 Enhanced OAM Beam Generation Using Optimized Modulated Metasurface Antennas

530 U. K. Khankhoje, Indian Institute of Technology Madras, India

08:50 – 09:10 Distance Limits of Metasurface OAM Multiplexing

520 A. Gupta, IIT Madras, India; K.P. Bilichod, IIT Madras, India; U.K. Khankhoje, IIT Madras, India

09:10 – 09:30 Electromagnetic Reciprocity of Reconfigurable Intelligent Surfaces

434 U. K. Khankhoje, Indian Institute of Technology Madras, India; D. Kundu, Indian Institute of Technology Delhi, India

09:30 – 09:50 Tile-Based Digitally Coded Reconfigurable Intelligent Surface for 3.5GHz Beam Steering

494 R. Malleboina, Indian Institute of Science (IISc), India; D. Sarkar, Indian Institute of Science (IISc), India

09:50 – 10:10 Ultralow-power Implementation of Reconfigurable Intelligent Surface Utilising RF CMOS Switches for 6G Wireless Applications

531 M.S. Shukoor, Indian Institute of Technology Roorkee, India; S. Dey, Indian Institute of Technology Palakkad, India; K. Rawat, Indian Institute of Technology Roorkee, India

10:10 – 10:30 Harmonic Beam Suppression at Grating Lobe Locations Using Space-Domain Prephasing on 1-bit STC Metasurface

493 D. K. Sahoo, Indian Institute of Technology Roorkee, India; D. Kundu, Indian Institute of Technology Delhi, India; U. Khankhoje, Indian Institute of Technology Madras, India; A. Patnaik, Indian Institute of Technology Roorkee, India

15) Scattering Modelling for Wave Propagation Problems - ICEAA, organized by X. Du

chair 1 X. Du chair 2 Tuesday, 15 11:00 – 13:00 room 203 **ICEAA**

11:00 – 11:20 Comparative Evaluation of Ellipsoidal Bistatic Radar Cross Section Between Physical Optics Formulation and Geometrical Optics Approximation

358 N. Keerativoranan, Institute of Science Tokyo, Japan; J. Takada, Institute of Science Tokyo, Japan

11:20 – 11:40 Improved Path Gain Modeling for RIS Channels Incorporating Specular Reflection and Wrapped-Phase Bragg Diffraction

245 Y. Ding, Niigata University, Japan; M. Kim, Niigata University, Japan

11:40 – 12:00 Two Types of Rhombic Unit Cell Structures with a Top-Gapped Metallic Pillar for Electromagnetic Topological Waveguides

513 T. Nagayama, Kagoshima University, Japan

12:00 – 12:20 E-Polarized Wave Scattering by Finite Parallel-Plate Waveguides Terminated with PEC Boundaries

227 T. Zhang, Chuo University, Japan; K. Kobayashi, Chuo University, Japan

12:20 – 12:40 Relationships among Uniform Theory of Diffraction, Physical Optics, Knife-edge Diffraction Method, and Split-step Parabolic Equation

148 X. Du, Kagoshima University, Japan

12:40 – 13:00 Propagation Shadowing Model Incorporating Low-Cost Fresnel Reflector

141 X. Du, Kagoshima University, Japan

16) Simulation and diagnostics of space plasma phenomena in the laboratory - ICEAA, organized by W.E. Amatucci, E. Scime

chair 1 W.E. Amatucci chair 2 E. Scime Tuesday, 15 14:30 – 18:20 room 203 **ICEAA**

14:30 – 14:50 Wave-driven electron inward transport in a magnetic nozzle laboratory experiment

299 C. Charles, The Australian National University, Australia; K. Takahashi, Tohoku University, Japan; A. Caldarelli, CNRS, France; R.W. Boswell, The Australian National University, Australia

14:50 – 15:10 Formation of High-Power Helicon Plasma and Emergence of Centrifugal Instability in the Madison AWAKE Prototype

419 J. Herbelot, University of Wisconsin–Madison, United States; M. Zepp, University of Wisconsin–Madison, United States; F. Sharmin, University of Wisconsin–Madison, United States; B. Elward, University of Wisconsin–Madison, United States; O. Schmitz, University of Wisconsin–Madison, United States

15:10 – 15:30 Laboratory Studies of the Modification of Electromagnetic Wave Propagation under Simulated Reentry Conditions

205 E. Thomas, Auburn University, United States; J. Powell, Auburn University, United States; M. Steurer, Auburn University, United States; W. J. D. Johnson, Auburn University, United States; S. Chakraborty Thakur, Auburn University, United States

15:30 – 15:50 Investigating turbulent spatiotemporal features of magnetic field aligned filamentary structures in the Magnetized Dusty Plasma eXperiment (MDPX)

374 S. Chakraborty Thakur, Auburn University, United States; A. Coleman, Auburn University, United States; S. Bachoti, Auburn University, United States; B. Koford, Auburn University, United States; E. Thomas, Auburn University, United States

15:50 – 16:10 Dielectric Scattering Models for Dusty Plasmas Based on Empirical Data

249 A. Hodges, MIT Lincoln Laboratory, United States; T. Canny, MIT Lincoln Laboratory, United States; E. Tejero, Naval Research Laboratory, United States; C. Enloe, Naval Research Laboratory, United States; A. Wilber, MIT Lincoln Laboratory, United States; A. Hyde, Naval Research Laboratory, United States; C. Holtsberg, MIT Lincoln Laboratory, United States; B. Amatucci, Naval Research Laboratory, United States

16:10 – 16:30 Material Effects on Precursor Soliton Excitation in Flowing Argon Plasma

403 C. Nasr, Orion Space Solutions (an Arcfield Company), United States; I. Collett, Orion Space Solutions (an Arcfield Company), United States; S. Thaller, Orion Space Solutions (an Arcfield Company), United States; M. Cooper, Orion Space Solutions (an Arcfield Company), United States; E. Tejero, Naval Research Laboratory, United States; B. Amatucci, Naval Research Laboratory, United States; E. Scime, West Virginia University, United States; K. Kumar, West Virginia University, United States

17:00 – 17:20 Remote sensing of plasma signatures of small orbital debris in LEO

315 G.L. Delzanno, Los Alamos National Laboratory, United States; F. Bagheri, Los Alamos National Laboratory, United States; V. Roytershteyn, Los Alamos National Laboratory, United States; P.A. Resendiz Lira, Los Alamos National Laboratory, United States; C. Lao, Los Alamos National Laboratory, United States; J. Holmes, Los Alamos National Laboratory, United States

17:20 – 17:40 The origin of non-gyrotropic distribution functions in compressed magnetotail current sheets

243 A.M. DuBois, U.S. Naval Research Laboratory, United States; C. Crabtree, U.S. Naval Research Laboratory, United States; E. Lichko, U.S. Naval Research Laboratory, United States; G. Ganguli, U.S. Naval Research Laboratory, United States

17:40 – 18:00 Frequency-resolved local measurements of phase-space energization

240 E. Lichko, U.S. Naval Research Laboratory, United States; J. Juno, Princeton Plasma Physics Laboratory, United States; S. Conley, Bates College, United States; G. G. Howes, University of Iowa, United States; M. Abler, Space Science Institute, United States; K. Klein, University of Arizona, United States

18:00 – 18:20 Experimental investigations of electrostatic and electromagnetic orbital debris soliton generation

335 B. Amatucci, Naval Research Laboratory, United States; E. Tejero, Naval Research Laboratory, United States; A. DuBois, Naval Research Laboratory, United States; C. L. Enloe, Naval Research Laboratory, United States; A. Hyde, Naval Research Laboratory, United States; D. Blackwell, Naval Research Laboratory, United States; C. Crabtree, Naval Research Laboratory, United States; G. Ganguli, Naval Research Laboratory, United States

17) Antenna and Wireless Technologies for 6G - ICEAA, organized by J. Guo, P. Qin

chair 1 J. Guo chair 2 P. Qin Tuesday, 15 08:30 – 13:00 room 204 **ICEAA**

08:30 – 08:50 Concept and Performance Evaluation of Feederless Active Phased Array for Satellite Formation Flying

438 N. Honma, Iwate Univerisity, Japan; K. Saito, Iwate University, Japan; R. Miura, Iwate University, Japan; Y. Ozawa, Iwate Univerisity, Japan; S. Arai, Iwate Univerisity, Japan; K. Murata, Iwate Univerisity, Japan; A. Shirane, Institute of Science Tokyo, Japan; S. Morioka, Interstellar Technologies Inc., Osaka University, Japan

08:50 – 09:10 Antenna-on-Camera (AoC) for Camera-Constrained Millimeter-Wave Beam Steering Toward 6G Mobile ISAC Platforms

359 D. Lee, Pohang University of Science and Technology, Korea, Republic of; K. Iimura, Dai Nippon Printing, Japan; M. Fukushima, Dai Nippon Printing, Japan; W. Hong, Pohang University of Science and Technology, Korea, Republic of

09:10 – 09:30 Advances in low cost and energy efficient multiple beamforming antennas for 6G

341 Y. J. Guo, University of Technology Sydney, Australia; M. Li, University of Technology Sydney, Australia

09:30 – 09:50 Design of a Self-Resonant and Self-Matched Compact Flexible Antenna

318 Q.W. Yuan, Y. Tang, T. Matsumoto, Tohoku Institute of Technology, Japan

09:50 – 10:10 Bessel-Beam Depth of Field Control for Wireless Power Transfer

268 G. Liu, University of Technology Sydney, Australia; L.Z. Song, University of Technology Sydney, Australia; A. Narbudowicz, Technical University of Denmark, Denmark; C. Ding, University of Technology Sydney, Australia

10:10 – 10:30 Deep Generative Model-Driven Automated Design of Antenna-in-Package for 6G Applications

257 H.S. Eun, UNIST, Korea, Republic of; G. Byun, UNIST, Korea, Republic of

11:00 – 11:20 Shared-aperture metasurface-antenna-in-package integrating X-band phased array and Ka-band folded reflectarray

225 Y. Zhang, City University of Hong Kong, Hong Kong; Y.S. To, City University of Hong Kong, Hong Kong; H. Wong, City University of Hong Kong, Hong Kong

11:20 – 11:40 Design of one-body two-dimensional switching matrix with a 4×4 triangular lattice of beams

209 S. Wu, Institute of Science Tokyo, Japan; J. Hirokawa, Institute of Science Tokyo, Japan; T. Tomura, Institute of Science Tokyo, Japan; N. J. G. Fonseca, Anywaves, France

11:40 – 12:00 A low-profile reconfigurable folded reflectrarray antenna for wide-angle beam scanning

201 S. Yu, Communication University of China, China - People; Z. Li, Communication University of China, China - People; Q. Guo, Communication University of China, China - People; J. Liu, Communication University of China, China - People

12:00 – 12:20 Design of a chessboard polarization conversion metasurface for wideband RCS reduction

198 J. Zhu, Communication University of China, China - People; Z. Li, Communication University of China, China - People; Q. Guo, Communication University of China, China - People; J. Liu, Communication University of China, China - People

12:20 – 12:40 Low-profile circularly polarized folded transmitarray antenna with ultra-high efficiency for Ku-band applications

181 X. Wei, Communication University of China, China - People; Q. Guo, Communication University of China, China - People; J. Liu, Communication University of China, China - People; Z. Li, Communication University of China, China - People

12:40 – 13:00 Advanced Beamforming Architectures: Modular AiP/AiM Scaling for Resilient 6G SATCOM, NTN, and Dynamic RIS

269 S.W. Chang, TMY Technology Inc., Taiwan

18) Advancements in the Modelling of Transient Fields - ICEAA, organized by K. Cools

chair 1 K. Cools chair 2 Tuesday, 15 14:30 – 17:40 room 204 **ICEAA**

14:30 – 14:50 A geometric algebra Schrödinger bridge for electromagnetic inverse scattering

476 G. Yu, 6G Innovation Centre, Institute for Communication Systems, University of Surrey, United Kingdom; M. Kamoun, Mathematical and Algorithmic Sciences Laboratory, Huawei Paris Research Center, France; M. Hamad, Mathematical and Algorithmic Sciences Laboratory, Huawei Paris Research Center, France; G. Gradoni, 6G Innovation Centre, Institute for Communication Systems, University of Surrey, United Kingdom

14:50 – 15:10 A late-time stable scalar-only integral equation for the modelling of transient scattering by perfect conductors

459 K. Cools, Ghent University, Belgium

15:10 – 15:30 Modelling of Time-Invariant and Time-Varying Meta surfaces Using a 2D FDTD-TF/SF Framework

407 A. Mallahzadeh, Institute for Communication Systems (ICS),University of Surrey, United Kingdom; G. Yu, Institute for Communication Systems (ICS),University of Surrey, United Kingdom; G. Gradoni, Institute for Communication Systems (ICS),University of Surrey, United Kingdom; M. Khalily, Institute for Communication Systems (ICS),University of Surrey, United Kingdom; R. Tafazolli, Institute for Communication Systems (ICS),University of Surrey, United Kingdom

15:30 – 15:50 The Critical Load Resistance of a Dual-Loaded Loop Antenna: A Time-Domain Study Based on the PEEC method

390 E. Mattucci, Brno University of Technology, Czech Republic; M. Štumpf, Brno University of Technology, Czech Republic; P. Kadlec, Brno University of Technology, Czech Republic; G. Antonini, University of L'Aquila, Italy

15:50 – 16:10 Numerical modelling of wave propagation in media with time-fractional constitutive relations

252 T.P. Stefanski, Gdansk University of Technology, Poland; D. Trofimowicz, Gdansk University of Technology, Poland; J. Gulgowski, University of Gdansk, Poland

16:10 – 16:30 Multi-GPU FDTD for Frequency- and Temperature-Dependent Electromagnetic Media

193 W.C. Snider, Auburn University, United States

17:00 – 17:20 Multi-core CPU acceleration of time-domain Green-function assembly in MOT-JVIE

114 S. Kumar, Eindhoven University of Technology, Netherlands; W. van der Hert, Eindhoven University of Technology, Netherlands; S. Eijsvogel, Eindhoven University of Technology, Netherlands; G. Gerini, Eindhoven University of Technology, Netherlands; M.C. Beurden, Eindhoven University fo Technology, Netherlands

17:20 – 17:40 Resonance-free calderón preconditioned global-multi-trace vector-potential integral equation for composite dielectric-PEC scattering

386 P. Olyslager, Ghent university, Belgium; H. Rogier, Ghent university, Belgium; K. Cools, Ghent university, Belgium

19a) Wideband/Multiband Antennas and Emerging Antenna Technology - APWC, organized by H. Nakano

chair 1 H. Nakano chair 2 M. Matsunaga Tuesday, 15 14:30 – 18:40 room 999 **APWC**

14:30 – 14:50 Wideband behavior in metamaterial bent-line antenna frameworks

129 H. Nakano, Hosei University, Japan; T. Abe, Hosei University, Japan; J. Shibayama, Hosei University, Japan; A. Mehta, Swansea University, United Kingdom

14:50 – 15:10 Gain enhancement of a circularly polarized printed monopole antenna for UWB high band using a cavity reflector

300 T. Fujimoto, Nagasaki University, Japan; C.E. Guan, Nagasaki University, Japan

15:10 – 15:30 Wideband design of a dual-band microstrip antenna fed by an L-probe using a single-layer substrate with a relative dielectric constant of 3.3

361 Y. Kimura, Saitama University, Japan; T. Obinata, Saitama University, Japan; T. Matsushima, Saitama University, Japan; T. Arima, Tokyo University of Agriculture and Technology, Japan

15:30 – 15:50 A Wideband Single-Port Patch Antenna Fed Through a Symmetric CPW Side-Slot Aperture

478 M. Matsunaga, Shizuoka University, Japan; T. Kurokawa, Shizuoka University, Japan

15:50 – 16:10 Comparative Evaluation on Feeding Technique Configuration for Improving Radiation Performances of Planar Array Microstrip Antenna

510 M.R. Effendi, Institut Teknologi Bandung, Indonesia; M.F. Maulana, Telkom University, Indonesia; F.A. Nasution, Institut Teknologi Bandung, Indonesia; H. Mistialustina, Universitas Sangga Buana, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

16:10 – 16:30 Low axial ratio wide-angle scanning phased array antenna via low dielectric matching layer

214 T. Uesaka, Mitsubishi Electric Coporation, Japan; H. Watanabe, Mitsubishi Electric Coporation, Japan; T. Tanaka, Mitsubishi Electric Coporation, Japan; T. Takahashi, Mitsubishi Electric Coporation, Japan

17:00 – 17:20 Dual-Band Dual-Polarized Shared-Aperture Wide-Band Antenna Array

213 Y. Luo, Beijing Institute of Technology, China - People; Z. Shen, The Yangtze Delta Region Academy, Beijing Institute of Technology, China - People

17:20 – 17:40 Compact Dual Band Antenna Composed of Metal Case with Slot and Inner Folded Dipole Element

317 H. Hashiguchi, National Defense Academy, Japan; N. Michishita, National Defense Academy, Japan; H. Morhishita, National Defense Academy, Japan; Q.Q. Phung, Le Quy Don Technical University, Viet Nam; A. Takei, Panasonic Electric Works Co., Ltd., Japan; M. Takeda, Panasonic Electric Works Co., Ltd., Japan; A. Yamamoto, Panasonic Electric Works Co., Ltd., Japan; H. Ide, Panasonic Electric Works Co., Ltd., Japan; Y. Seki, Panasonic Electric Works Co., Ltd., Japan; Y. Koyanagi, Panasonic System Networks R&D, Japan; H. Sato, Panasonic System Networks R&D, Japan

17:40 – 18:00 Fan-shaped dielectric antenna on finite ground plane

134 K. Sato, DKK Co., Ltd., Japan; H. Nakano, Hosei Univ., Japan

18:00 – 18:20 On the Use of the Double Cornu Spiral Antenna in MIMO Systems

334 D. Pouhè, Reutlingen University of Applied Sciences, Germany

18:20 – 18:40 A design of variable multi-band conformal RIS with flexible printed circuit

311 T. Urakami, National Institute of Technology, Kagawa College, Japan; K. Okada, National Institute of Technology, Kagawa College, Japan; T. Maruyama, Hiroshima Institute of Technology, Japan; A. Ono, National Institute of Technology, Kagawa College, Japan; N. Chen, University of Science and Technology Beijing, China - People; M. Okada, Nara Institute of Science and Technology, Japan

19b) Wideband/Multiband Antennas and Emerging Antenna Technology - APWC, organized by H. Nakano

chair 1 H. Nakano chair 2 M. Matsunaga Wednesday, 16 08:30 – 15:10 room 201 **APWC**

08:30 – 08:50 An ultra-wideband BOR-SPR antenna with a two-step bending conical ground plane

165 Y. Oishi, Toshiba Corporation, Japan; Y. Masuda, Toshiba Corporation, Japan; M. Tanabe, Toshiba Corporation, Japan; H. Nakano, Hosei University, Japan

08:50 – 09:10 Bandwidth of Radiation Efficiency for Electrically Small Antennas Excited by a Folded Structure

428 K.N. Keisuke, Kanazawa Institute of Technology, Japan; D.M. Daiki, Kanazawa Institute of Technology, Japan; K.F. Keisuke, Maebashi Institute of Technology, Japan

09:10 – 09:30 A Novel Multi-Band MIMO Antenna with Bent Section for In-Vehicle Devices

163 Y. Koga, AutoNetworks Technologies, Ltd., Japan; K. Kikuchi, AutoNetworks Technologies, Ltd., Japan; Y. Miki, AutoNetworks Technologies, Ltd., Japan; S. Yamagishi, AutoNetworks Technologies, Ltd., Japan; I. Kuwayama, AutoNetworks Technologies, Ltd., Japan; K. Noguchi, Kanazawa Institute of Technology, Japan; H. Iwai, Doshisha University, Japan

09:30 – 09:50 Planar Array Fractal Microstrip Antenna with Switchable Radiation Patterns for Wireless Communication Systems

508 S. Suprayogi, Telkom University, Indonesia; B. Sumajudin, Telkom University, Indonesia; C. Chairunnisa, Institut Teknologi Bandung, Indonesia; N. Rahayu, Institut Teknologi Bandung, Indonesia; A.R. Oktaviani, Telkom University, Indonesia; R. Khairany, Telkom University, Indonesia; P.O.Y. Sihombing, Telkom University, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

09:50 – 10:10 A Study on Leaky-Wave Antennas Using Dielectric Waveguides

233 Y. Rikuta, Nihon Dengyo Kosaku Co., Ltd., Japan; U. Azuma, Nihon Dengyo Kosaku Co., Ltd., Japan; H. Hagiwara, Nihon Dengyo Kosaku Co., Ltd., Japan

10:10 – 10:30 Beam Tilt Realization Using an Artificial Dielectric Material

195 Y. Zhang, Ryukoku University, Japan; Y. Toda, Ryukoku University, Japan; Y. Inoua, Ryukoku University, Japan; H. Hirota, Ryukoku University, Japan

11:00 – 11:20 Beam squint suppression in broadband antennas using transmission-type metasurfaces

224 M. Yonehara, Kyocera corporation, Japan; H. Yoshikawa, Kyocera corporation, Japan; H. Nakano, Hosei University, Japan

11:20 – 11:40 Engineered Dielectric Resonator Antenna for Broadband Operation with Advanced Functional Features

325 S. Basak, Universitry of Calcutta, India; D. Guha, Universitry of Calcutta, India

11:40 – 12:00 Dual-sense Circularly Polarized Waveguide Antenna Using Two L-Shaped Probes and Perturbation Elements

465 T. Fukusako, Kumamoto University, Japan; K. Nishio, Kumamoto University, Japan; R. Kuse, Kumamoto University, Japan

12:00 – 12:20 Experimental Indoor WLAN Demonstration of a 12-Bit Pixel-Based Fluid Antenna System

139 B. Liu, Hong Kong Metropolitan University, Hong Kong; K.F. Tong, Hong Kong Metropolitan University, Hong Kong

12:20 – 12:40 A Compact Wideband Sub-THz Horn Feed Enabling Metasurface-based ISAC Systems in 6G Networks

248 Y.S. To, State Key Laboratory of Terahertz and Millimeter Waves (Hong Kong), Department of Electrical Engineering, City University of Hong Kong, Hong Kong; H. Wong, State Key Laboratory of Terahertz and Millimeter Waves (Hong Kong), Department of Electrical Engineering, City University of Hong Kong, Hong Kong

12:40 – 13:00 Comprehensive Multiphysics Simulation of a Terahertz Photoconductive Antenna

320 J. Shibayama, Hosei University, Japan; Y. Muraosa, Hosei University, Japan; Y. Akimoto, Hosei University, Japan; H. Nakano, Hosei University, Japan

14:30 – 14:50 Broadband Aperture Antenna-in-Package Techniques in 300GHz Band

217 K. Sakakibara, Nagoya Institute of Technology, Japan; T. Uemura, Nagoya Institute of Technology, Japan; H. Mori, Nagoya Institute of Technology, Japan; T. Narita, Nagoya Institute of Technology, Japan; Y. Sugimoto, Nagoya Institute of Technology, Japan; Y. Tanaka, Nagoya Institute of Technology, Japan; N. Kikuma, Nagoya Institute of Technology, Japan

14:50 – 15:10 Efficiency Enhancement of 10-GHz Wireless Power Transfer Using a Planar Lens and Patch Antennas

515 T. Maruyama, Hiroshima Institute of Technology, Japan; H. Abe, Hiroshima Institute of Technology, Japan; I. Awai, Department of Yamaguchi Laboratories, Mt. Fuji GX Holdings Inc, Japan

20) Antennas and Arrays Technologies - APWC

chair 1 G. Martinez chair 2 S. Dacuycuy Wednesday, 16 15:30 – 17:40 room 201 **APWC**

15:30 – 15:50 Compact multiresonance cubic antenna combining complementary series- and parallel-resonant elements

246 T. Kaneda, Maebashi Institute of Technology, Japan; H. Hayashi, Kanazawa Institute of Technology, Japan; K. Noguchi, Kanazawa Institute of Technology, Japan; K. Fujita, Maebashi Institute of Technology, Japan

15:50 – 16:10 A coplanar L-probe fed patch antenna for wideband wide-scanning phased arrays

319 Y. Sheng, The State Key Laboratory of Millimeter Waves, Southeast University, Nanjing, China - People; Z. Cao, The State Key Laboratory of Millimeter Waves, Southeast University, Nanjing, China - People

16:10 – 16:30 A Reconfigurable Reflectarray Using Electrically Actuated Liquid-Metal Elements

426 S.J. Dacuycuy, University of Hawaii at Manoa, United States; G.A.V. Manio, University of Hawaii at Manoa, United States; K.I. Maki, University of Hawaii at Manoa, United States; M.T. Kouchi, University of Hawaii at Manoa, United States; R.C. Ordonez, Naval Information Warfare Center Pacific, United States; C.I. Alizar, Naval Information Warfare Center Pacific, United States; C.K. Hayashi, Naval Information Warfare Center Pacific, United States; A.T. Ohta, University of Hawaii at Manoa, United States; W.A. Shiroma, University of Hawaii at Manoa, United States

17:00 – 17:20 Design of a 1-Bit, 28-GHz Liquid-Metal Reflective Metasurface for Anomalous Beam Steering

342 M.T. Kouchi, University of Hawaii at Manoa, United States; K.I. Maki, University of Hawaii at Manoa, United States; G.A.V. Manio, University of Hawaii at Manoa, United States; S.J. Dacuycuy, University of Hawaii at Manoa, United States; R.C. Ordonez, Naval Information Warfare Center Pacific, United States; C.I. Alizar, Naval Information Warfare Center Pacific, United States; C.K. Hayashi, Naval Information Warfare Center Pacific, United States; W.A. Shiroma, University of Hawaii at Manoa, United States; A.T. Ohta, University of Hawaii at Manoa, United States

17:20 – 17:40 Beam-Tilting Yagi–Uda Antenna with Suppressed Symmetrical Radiation Via Parasitic Striplines

278 R. Jaafar, IETR-University of Rennes, France; S. Collardey, IETR-University of Rennes, France; A. Sharaiha, IETR-University of Rennes, France

21) Quantum technologies in Electromagnetics - ICEAA, organized by G. Martinez, E. Zich

chair 1 G. Martinez chair 2 E. Zich Wednesday, 16 17:40 – 18:40 room 201 **ICEAA**

17:40 – 18:00 Hybrid Quantum-Classical Deep Learning for Low SNR Radar Signal Classification and OOD Detection

448 G. F. Martinez, Politecnico di Milano, Italy; A. Niccolai, Politecnico di Milano, Italy; R. E. Zich, Politecnico di Milano, Italy

18:00 – 18:20 Statistical Modeling and Sensor Fusion for SPAD-Based Time-of-Flight LiDAR

339 E.L. Zich, Politecnico di Milano, Italy; F. Pace Napoleone, Université de Toulouse - France; G.F. Martinez, Politecnico di Milano, Italy; R.E. Zich, Politecnico di Milano, Italy

18:20 – 18:40 Quantum Support Vector for Accelerometer-Based Intrusion Detection

338 F. Pace Napoleone, Université de Toulouse - Paul Sabatier, France; N. Simonov, Università di Pisa, Italy; E.L. Zich, Politecnico di Milano, Italy; F. Chiaudani, Politecnico di Milano, Italy; S. Copelli, Politecnico di Milano, Italy; Y. Amigoni, Politecnico di Milano, Italy; R.E. Zich, Politecnico di Milano, Italy

22) Natural and stimulated emissions and related phenomena in space and astrophysical plasmas - ICEAA, organized by G. Ganguli

chair 1 G. Ganguli chair 2 Wednesday, 16 08:30 – 15:50 room 202 **ICEAA**

08:30 – 08:50 Preliminary Theoretical Interpretation of Wave Observations from the SMART Experiment

297 C. Crabtree, G. Ganguli, C. Siefring, E. Lichko, A.R.Sot-Chavez, G. Gatling, US Naval Research Laboratory, United States

08:50 – 09:10 Space Measurement of A Rocket-released Turbulence (SMART) from Wake Island

408 C. Netwall, US Naval Research Laboratory, United States

09:10 – 09:30 Plasma Wave Observations During the Space Measurements of A Rocket-Released Turbulence (SMART) Experiment

525 C.L. Siefring, C.E. Crabtree, G.I. Ganguli, G.R. Gatling, J.M. Coombs, W.E. Amaucci, E.R. Lichko, A. Soto-Chavez, US Naval Research Laboratory, United States; J.L. McLain, NASA Goddard Space Flight Center, United States; M. McCarthy, R. Holzworth, University of Washington, United States; W. Farrell, Space Sciences Institute, United States; D. Hampton, University of Alaska Fairbanks, United States

09:30 – 09:50 Electric field measurements from an ionospheric barium release

497 M. P. McCarthy, University of Washington, Seattle, United States; R. H. Holzworth, University of Washington, Seattle, United States; C. L. Siefring, Naval Research Laboratory, United States; G. I. Ganguli, Naval Research Laboratory, United States; C. E. Crabtree, Naval Research Laboratory, United States

09:50 – 10:10 Downward Propagating Whistler Wave Reflection and Transmission from Below the F-Layer Generated by the SMART Experiment

238 J.M. TenBarge, Princeton University, United States; C.E. Crabtree, US Naval Research Laboratory, United States; C.R. Brown, US Naval Research Laboratory, United States; E. Lichko, US Naval Research Laboratory, United States; A.R. Sato, US Naval Research Laboratory, United States; G. Ganguli, US Naval Research Laboratory, United States; J. Juno, Princeton Plasma Physics Laboratory, United States

10:10 – 10:30 Threats to a Sustainable Future in Low Earth Orbit

210 D.N. Baker, CSPC, University of Colorado Boulder, United States

11:00 – 11:20 Precursor solitons in a magnetized plasma

182 A. Sen, Institute for Plasma Research, India; A. Mir, Udaipur Solar Observatory, Physical Research Laboratory, India; S. Tiwari, Indian Institute of Technology Jammu, India; P. Bandyopadhyay, Institute for Plasma Research, India; C. Crabtree, Naval Research Laboratory, United States; G. Ganguli, Naval Research Laboratory, United States

11:20 – 11:40 Plasma signatures of small orbital debris in LEO: magnetic field effects

314 G.L. Delzanno, Los Alamos National Laboratory, United States; V. Roytershteyn, Los Alamos National Laboratory, United States; P. A. Resendiz Lira, Los Alamos National Laboratory, United States; C. Lao, Los Alamos National Laboratory, United States; F. Bagheri, Los Alamos National Laboratory, United States; J. Holmes, Los Alamos National Laboratory, United States

11:40 – 12:00 Towards state estimation of space objects from plasma wave observations

404 I.W. Collett, Orion Space Solutions, United States; E. McAleavy, Orion Space Solutions, United States; S. Thaller, Orion Space Solutions, United States; R. Patel, Orion Space Solutions, United States; C. Nasr, Orion Space Solutions, United States; F. Gasperini, Orion Space Solutions, United States; J. Wilson, Orion Space Solutions, United States; N. Re, Advanced Space, United States; B. Tatman, Advanced Space, United States

12:00 – 12:20 Plasma Structures in the Lower Hybrid Frequency Range Produced by Charged Space Objects

453 W. Scales, Virginia Tech, United States; M. Idso, University of California, United States; B. Srinivasan, University of Washington, United States

12:20 – 12:40 REAL CubeSat Observations of Electron Microbursts

502 R.M. Millan, Dept. of Physics and Astronomy, Dartmouth, United States

12:40 – 13:00 Cross-scale radiation belt modeling during geomagnetic storms

500 A. T. Michael, JHU/APL, United States; A. Ukhorskiy, JHU/APL, United States; K. Sorathia, JHU/APL, United States; V. Merkin, JHU/APL, United States; J. Albert, AFRL, United States; X. Shen, W. Li, Boston University, United States

14:30 – 14:50 Energetic Particle Transport, Acceleration, and Scattering by Mesoscale Convection in Earth's Magnetotail

498 A. Ukhorskiy, JHU/APL, United States; A.T. Michael, JHU/APL, United States; K. Sorathia, JHU/APL, United States; V.G. Merkin, JHU/APL, United States; R.M. Millan, Darmouth, United States

14:50 – 15:10 Penetration of solar energetic helium into the earth's magnetosphere: SEP events of september 2017

424 S.G. Kanekal, NASA, United States; F. Gautier, D.N. Baker, George Mason University, Fairfax, USA; A.Greeley, NASA, United States; Q. Schiller, George Mason University, Fairfax, USA

15:10 – 15:30 Electrojet Zeeman Imaging Explorer (EZIE) Mission: Redefining How We Study Magnetosphere–Ionosphere Coupling

417 V. G. Merkin, JHU/APL, United States; R. Mesquita, JHU/APL, United States; W. Swartz, JHU/APL, United States; J.H. Yee, JHU/APL, United States; J. Garretson, JHU/APL, United States; G. Starr, JHU/APL, United States; D. Stephens, JHU/APL, United States; F. Werner, JPL, United States; M. Schwartz, JPL, United States; S. Misra, JPL, United States

15:30 – 15:50 Flight Test Methods for Natural and Stimulated Emissions

192 B.J. Pokines, AFRL, United States; C. Crabtree, AFRL, United States

23) Wavefront Control and Radiation Engineering using Metasurfaces and Metamaterials - ICEAA, organized by S. Arslanagic, A. Monti, H. Wakatsuchi

chair 1 S. Arslanagic chair 2 A. Monti, H. Wakatsuchi Wednesday, 16 15:50 – 18:40 room 202 **ICEAA**

15:50 – 16:10 Realistic Superdirective Spherical Dielectric Lens Antennas

206 S. Arslanagic, R. W. Ziolkowski, University of Arizona, United States

16:10 – 16:30 Design Method for Aperiodic Asymmetric Metasurfaces

304 Y. Otsuka, Nagoya Institute of Technology, Japan; H. Wakatsuchi, Nagoya Institute of Technology, Japan

17:00 – 17:20 Drilling metal plates opens diversity of electromagnetic wave modes

420 O. Sakai, The University of Shiga Prefecture, Japan; G. Itami, The University of Shiga Prefecture, Japan; F. Pizarro, Pontificia Universidad Católica de Valparaíso, Chile; T. Nakanishi, The University of Shiga Prefecture, Japan

17:20 – 17:40 Digitally Coded Programmable CRLH Metamaterial Antenna for Reconfigurable Beamforming

427 Y. E. Kao, M. Q. Nguyen, C. T. M. Wu, National Taiwan Univeristy, Taiwan

17:40 – 18:00 Air Gap in Wideband, Wide-Scanning Connected Slot Arrays Loaded with Artificial Dielectrics

258 D. Choi, Ulsan National Institute of Science and Technology, Korea, Republic of; G. Byun, Ulsan National Institute of Science and Technology, Korea, Republic of

18:00 – 18:20 A Compact 2D Polarization-Mixing Beamforming Antenna Array with Controllable Beamwidth

173 F.C. Zeng, University of Technology Sydney (UTS), Australia; C. Ding, University of Technology Sydney (UTS), Australia; Y.J. Guo, University of Technology Sydney (UTS), Australia

18:20 – 18:40 Metasurfaces for spatially separating optical angular momentum beams to obtain gaussian waveforms

232 J. D. Tran, Technical University of Denmark, Denmark; A. Lavrinenko, Technical University of Denmark, Denmark; T. Morioka, Technical University of Denmark, Denmark; L.K. Oxenløwe, Technical University of Denmark, Denmark; R. Malureanu, Technical University of Denmark, Denmark

24) Novel Mathematical Methods in Electromagnetics, organized by K. Kobayashi, G. Lombardi, Y. Shestopalov

chair 1 K. Kobayashi chair 2 G. Lombardi, Y. Shestopalov Wednesday, 16 08:30 – 12:40 room 203 **ICEAA**

08:30 – 08:50 3-D PML-FDTD implementation using dimensionally aligned Maxwell’s equations

505 A. A. Cosan, National Defence University - Turkish Naval Academy, Turkey; F. Erden, Turkish Navy - Office of Navigation, Hydrography and Oceanography, National Defence University - Turkish Naval Academy, Turkey; M. E. Alaca, National Defence University, Graduate Institute, Turkey

08:50 – 09:10 Gradient-Based Optimization of mmWave Reflectors for Designated-Region Coverage

382 C.M.H. Le, Institute of Science Tokyo, Japan; N. Keerativoranan, Institute of Science Tokyo, Japan; H. Song, Hiroshima University, Japan; A.S. Andrenko, Institute of Science Tokyo, Japan; J. Takada, Institute of Science Tokyo, Japan

09:10 – 09:30 Impedance model of a black body of rotation of arbitrary polarization

351 Y. V. Yukhanov, Southern federal university, Russian Federation; T. Y. Privalova, Southern federal university, Russian Federation

09:30 – 09:50 Control the Pancharatnam-Berry phase of bistatic scattering from cylindrical sectorial metasurfaces

330 A.I. Semenikhin, Southern federal university, Russian Federation; D. V. Semenikhina, Southern federal university, Russian Federation; A. N. Savitskiy, Southern federal university, Russian Federation; T.Y. Privalova, Southern federal university, Russian Federation

09:50 – 10:10 Plane Wave Diffraction by a Perfectly Conducting Rectangular Cylinder: A Wiener–Hopf Analysis

301 K.W. He, Hunan University of Science and Technology, China - People; K. Kobayashi, Chuo University, Japan

10:10 – 10:30 A posteriori error estimates and adaptive algorithm for the reconstruction of dielectric properties in conductive objects

222 G. Kyhn, University of Gothenburg, Chalmers University of Technology, Sweden; E. Lindström, University of Gothenburg, Chalmers University of Technology, Sweden; L. Beilina, University of Gothenburg, Chalmers University of Technology, Sweden

11:00 – 11:20 Electromagnetic scattering by the magnetization structure of a Bloch point

274 V. Jandieri, Nagoya Institute of Technology, Japan; R. Khomeriki, Tbilisi State University, Georgia; D. Erni, University of Duisburg-Essen, Germany; N. Tsagareli, Binghamton University, United States; Q. Li, Tsinghua University, China; P.L. Werner, The Pennsylvania State University, United States; D.H. Werner, The Pennsylvania State University, United States; J. Berakdar, Martin-Luther Universität Halle-Wittenberg, Germany

11:20 – 11:40 The Thermodynamical Electromagnetism with an Introduction to the Inflective Magnetism

430 T. Sengör, Yildiz Technical University (Retired), Turkey

11:40 – 12:00 Magnetic Control of Quantum Čerenkov Emission in Confined Graphene

437 M. Longhi, Niccolò Cusano University, Italy; D. Mencarelli, Marche Polytechnic University, Italy; A. Toscano, Roma Tre University, Italy; L. Pierantoni, Marche Polytechnic University, Italy

12:00 – 12:20 Asymptotic Analysis of the Sommerfeld Problem for Magnetic Media

415 S. Sautbekov, G.Alkina, Al-Farabi Kazakh National University, Kazakhstan

12:20 – 12:40 A Self-Consistent Quantum–Classical Algorithm for Hot-Electron Generation in Complex Plasmonic Nanostructures

370 P. Li, Tsinghua University, China - People; Y. Li, Tsinghua University, China - People

25) Dedicated Communication Technologys - ICEAA, organized by Y. Wen

chair 1 Y. Wen chair 2 Wednesday, 16 14:30 – 18:20 room 203 **ICEAA**

14:30 – 14:50 Electromagnetic interference characteristics of maglev trains in the 30 - 200 MHz band

288 Y. Xu, Z. Zhang, X. Liu, G. Deng, H. Wang, State Key Laboratory of High-speed Maglev Transportation Technology, China; J. Zhang, Beijing Jiaotong University, China

14:50 – 15:10 Research on the measurement method of surface current and surface potential of maglev train

287 Y. Xu, Z. Zhang, X. Liu, G. Deng, H. W, State Key Laboratory of High-speed Maglev Transportation Technology, China; J. Zhang, Beijing Jiaotong University, China

15:10 – 15:30 Research on the influence of carbon fiber train body on radiation emission

286 Y. Li, S. Fu, D. Wu, Q. Xu, State Key Laboratory of High-speed Maglev Transportation Technology, China; Z. Liu, J. Zhang, Beijing Jiaotong University, China

15:30 – 15:50 Radio wave propagation prediction in tunnel based on residual learning

309 Z.L. Yue, Y. Wen, Beijing Jiaotong University, China - People

15:50 – 16:10 Terahertz Wave Propagation in Iron Filings Dust Clouds Based on Mie Scattering Theory and Monte Carlo Method

170 Y. Xiong, Beijing Jiaotong University, China - People; Y. Wu, Beijing Jiaotong University, China - People; X. Jia, Beijing Jiaotong University, China - People; Y. Wen, Beijing Jiaotong University, China - People

16:10 – 16:30 Interpretable transformer-based hardware health assessment and anomaly detection for servers in large-scale data centers

266 Z.A. Zhang, College of Intelligence And Computing, Tianjin University, China - People; X.Y. Yang, China Telecom Co., Ltd, China - People; J. Yan, China Telecom Co., Ltd, China - People; X. Jia, China Telecom Co., Ltd, China - People; Q.W. Zhang, China Telecom Co., Ltd, China - People; H.M. Li, China Telecom Co., Ltd, China - People

17:00 – 17:20 Prediction-driven active probing for fault detection in cloud networks

293 Y.T. Chen, University of Electronic Science and Technology of China, China - People; X.Y. He, China Mobile Communications Group Beijing Co.,Ltd., China - People; P. Hao, China Mobile Communications Group Beijing Co.,Ltd., China - People; G.D. Yang, China Mobile Communications Group Co., Ltd., China - People; Q.C. Shi, Beijing Jiaotong University, China - People; H. Zhao, China Mobile Communications Group Co., Ltd., China - People; Y. Xiao, China Mobile Communications Group Beijing Co.,Ltd., China - People

17:20 – 17:40 Geometry-residual factorization for calibration-efficient cross-environment UAV channel estimation

413 X. Wang, Beijing Jiaotong University, China - People; Z. Zhang, Beijing Jiaotong University, China - People; Q. Shi, Beijing Jiaotong University, China - People; Y. Wen, Beijing Jiaotong University, China - People

17:40 – 18:00 Adaptive reliability-driven fuzzy fusion for multi-radar target tracking in non-stationary environments

365 P. Zhao, School of Automation and Intelligence Beijing Jiaotong University, China - People; Y.H. Wen, School of Automation and Intelligence Beijing Jiaotong University, China - People; M.J. Wang, School of Automation and Intelligence Beijing Jiaotong University, China - People; J. Ren, School of Automation and Intelligence Beijing Jiaotong University, China - People; B.Y. Li, School of Automation and Intelligence Beijing Jiaotong University, China - People

18:00 – 18:20 Multi-Technology Converged Next-Generation Railway Mobile Communication Network

158 R. Yang, School of Automation and Intelligence, Beijing Jiaotong University, China - People

26) Antennas, Guiding Systems Inspired by Periodicity - ICEAA, organized by K. Esselle, L. Matekovits

chair 1 K. Esselle chair 2 L. Matekovits Wednesday, 16 08:30 – 10:30 room 204 **ICEAA**

08:30 – 08:50 2D-Steering of the Beam of A Short High-Gain Horn Antenna Using Two Near-Field Metasurfaces

303 P.B. Samal, University of Technology Sydney, Australia; M.I. Nabeel, University of Technology Sydney, Australia; K.P. Esselle, University of Technology Sydney, Australia; K. Singh, University of Technology Sydney, Australia; D.N. Thalakotuna, University of Technology Sydney, Australia

08:50 – 09:10 A Compact VO2-Based Reconfigurable Intelligent Surface for mm-Wave Beam Steering

219 U. Ali, Technical University of Denmark, Denmark; R.E. Jacobsen, Technical University of Denmark, Denmark; S. Arslanagic, Technical University of Denmark, Denmark

09:10 – 09:30 Gain Enhancement of Patch Antenna Using Fabry-Perot Cavity with Two-Layer Partially ´ Reflecting Surface

196 F. Goksel, Bahcesehir University, Turkey; L. Kouhalvandi, Dogus University, Turkey; Z. Hamzavi-Zarghani, Dogus University, Turkey; L. Matekovits, Politecnico di Torino, Italy; S. Karamzadeh, Silicon Austria Labs (SAL), Austria

09:30 – 09:50 All-dielectric 2-Bit transmitarray antenna for sub-terahertz applications

296 Z. Hamzavi-Zarghani, Graz University of Technology, Austria; l. Matekovits, Politecnico di Torino, Italy; W. Bösch, Graz University of Technology, Austria

09:50 – 10:10 Design and Analysis of VO_2-Based Reconfigurable Metasurface with Functional Layers

388 U. Ali, Technical University of Denmark, Denmark; R.E. Jacobsen, Technical University of Denmark, Denmark; R. Malureanu, Technical University of Denmark, Denmark; A. Laurynenka, Technical University of Denmark, Denmark; S. Arslanagic, Technical University of Denmark, Denmark

10:10 – 10:30 S/X-Band Shared-Aperture Antenna Using Heterogeneous Radiating Elements

385 A. George, University of Technology, Sydney, Australia; D.N. Thalakotuna, University of Technology, Sydney, Australia; P.I. Theoharis, University of Technology, Sydney, Australia; K.P. Esselle, University of Technology, Sydney, Australia; F. Cure, Quasar Satellite Technologies, Sydney, Australia

27) Electromagnetic Modeling, Analysis in Advanced Electronic Packaging - ICEAA, organized by J.-M. Jin, H. Ma

chair 1 J.-M. Jin chair 2 H. Ma Wednesday, 16 11:00 – 14:50 room 204 **ICEAA**

11:00 – 11:20 On the Nature, Root-Cause,, Suppression of Undesired Resonances in a Multi-Channel High-Speed Connector

355 N. Elahi, University of Illinois at Urbana-Champaign, United States; J.M. Jin, University of Illinois at Urbana-Champaign, United States

11:20 – 11:40 UCIe Channels: Effect of Interposer Via Geometry on the Accuracy of Signal Integrity Surrogate Models

433 R. Krishna, University of Illinois Urbana-Champaign, India; X. Chen, University of Illinois Urbana-Champaign, United States; E. Rosenbaum, University of Illinois Urbana-Champaign, United States

11:40 – 12:00 Power Noise Suppression Structure Design based on Transmission Line Modeling, Dispersion Analysis in Glass Package PDNs

464 Y.W. Kim, Sejong University, Korea, Republic of

12:00 – 12:20 Multilayer meshed power/ground plane modeling method for interposer power distribution network (PDN) in advanced system-in-package (SiP)

166 H.W. Kim, J.W. Lee, S.U. Lee, S.H. Lee, S.H. Ryu, J.H. Park, Korea Advanced Institute of Science, Technology, Korea, Republic of; J.W. Kim, SK hynix, Korea, Republic of; S.Y. Ahn, Korea Advanced Institute of Science, Technology, Korea, Republic of

12:20 – 12:40 A Physics-Informed LLM Hyper-Heuristic Method for Decap Optimization in 2.5D PDNs

348 S. Zhang, Zhejiang University, China - People; H. Ma, Zhejiang University, China - People

12:40 – 13:00 Measurement-, Optimization Algorithm-Based Inductor Model Coupled to Chassis

149 J. Song, Kyung Hee University, Korea, Republic of; J. Park, Kyung Hee University, Korea, Republic of

14:30 – 14:50 Electric field prediction of multi-polarized dipoles using potential-to-field neural network

226 Y. Xu, Zhejiang University, China - People; H. Ma, Zhejiang University, China - People

28) Numerical methods in electromagnetics - ICEAA, organized by R.D. Graglia, D.R. Wilton

chair 1 R.D. Roberto chair 2 D.R. Wilton Wednesday, 16 14:50 – 16:10 room 204 **ICEAA**

14:50 – 15:10 Integral-equation modeling of metasurface patches embedded in layered media

292 E.H. Bleszynski, M.K. Bleszynski, T. Jaroszewicz, monopole research, United States; W.A. Johnson, Consultant, Italy; J. Rivero, Istituto Superiore Mario Boella, Italy; F. Vipiana, Politecnico di Torino, Italy; D. Wilton, University of Houston, United States

15:10 – 15:30 A Directionally Low-Rank Compressed Multilevel Green's Function Interpolation Method for Metal-Dielectric Composite Problems

283 S. D. Jiang, Zhejiang University, China - People; H. C. Lan, Zhejiang University, China - People; H. G. Wang, Zhejiang University, China - People;

15:30 – 15:50 Impact of Green's Function Derivative Integral Accuracy on Frequency-Domain Interpolation Techniques in Method of Moments

507 V.F. Martin, Universidad Rey Juan Carlos, Spain; J. Rivero, Politecnico di Torino, Italy; D.R. Wilton, University of Houston, United States; W.A. Johnson, Consultant, United States; F. Vipiana, Politecnico di Torino, Italy

15:50 – 16:10 Investigations on a high-order discretization of the electric field integral equation based on prolate spheroidal wave functions

179 M. Mirmohammadsadeghi, Technical University of Munich, Germany; T.F. Eibert, Technical University of Munich, Germany

29) Computational Techniques in Electromagnetics and Applications - ICEAA, organized by R. Ozaki, T. Yamasaki

chair 1 R. Ozaki chair 2 T. Yamasaki Wednesday, 16 17:00 – 18:20 room 204 **ICEAA**

17:00 – 17:20 Performance Evaluation of Leapfrog-RNN for a Nonlinear ODE of a Simple Pendulum

455 T. Sakai, Tokyo Metropolitan University, Japan; Y. Suzuki, Tokyo Metropolitan University, Japan

17:20 – 17:40 A Study on the Acceleration of Acoustic Wave Propagation Analysis Using the Symplectic Integrator Method

279 S. Osada, Nihon University, Japan; S. Kishimoto, Nihon University, Japan; S. Ohnuki, Nihon University, Japan

17:40 – 18:00 Transmission Characteristics of an Inhomogeneous Structure with Frequency Dependence

369 Y. Wang, Graduate School of Science and Technology, Nihon University, Japan; R. Ozaki, Department of Electrical Engineering, College of Science and Technology, Nihon University, Japan; T. Yamasaki, Department of Electrical Engineering, College of Science and Technology, Nihon University, Japan

18:00 – 18:20 Scattering of Electromagnetic Waves in Inhomogeneous Dielectric Gratings Consists of Conducting Strips

471 T. Yamasaki, Nihon University, Japan

30) Numerical analysis of electromagnetic problems and devices, organized by J. Shibayama, K. Fujita

chair 1 J. Shibayama chair 2 K. Fujita Thursday, 17 08:30 – 11:20 room 201 **ICEAA**

08:30 – 08:50 Physics-informed neural networks based on the magnetic field integral equation for modeling plasmonic structures

401 K. Fujita, Saitama Institute of Technology, Japan

08:50 – 09:10 A Study on Discrete Inverse Laplace Transform Applied to Transient Analyses of Electromagnetic Fields with Bandpass Frequency Spectra

463 K. Watanabe, Fukuoka Institute of Technology, Japan

09:10 – 09:30 Planar Metallic Photonic Crystal Structures with a Dielectric Layer Inclusion

203 C. P. Chen, Kanagawa University, Japan; T. Hiraoka, Kanagawa University, Japan; T. Anada, Kanagawa University, Japan

09:30 – 09:50 Direction-of-Arrival Estimation Using Wavenumber-Space Analysis in a Local Region

280 G. Toyoda, Nihon University, Japan; S. Kishimoto, Nihon University, Japan; S. Ohnuki, Nihon University, Japan

09:50 – 10:10 Suppressing Radiation from Narrow Gap on Waveguide Using Serrated Structures

242 Y. Kusama, Toyo University, Japan; H.H. Chen, National Kaohsiung University of Science and Technology, Taiwan; Y.W. Hsu, National Kaohsiung University of Science and Technology, Taiwan

10:10 – 10:30 Waveguide-to-NRD Guide Transition Using High-Index Field Confinement

316 T. Matsuzaki, Muroran Institute of Technology, Japan; J. Chakarothai, National Institute of Information and Communications Technology, Japan; A. Iguchi, Muroran Institute of Technology, Japan; K. Fujii, National Institute of Information and Communications Technology, Japan; N. Sekine, National Institute of Information and Communications Technology, Japan; Y. Tsuji, Muroran Institute of Technology, Japan

11:00 – 11:20 Reconstruction methods for optical spectral reflectivity from the outputs of filter-array type multispectral sensor

421 Y. Ohtera, Toyama Prefectural University, Japan

31) Quantum Electromagnetics: Theory, Technology and Applications, organized by A. Boag, G. Gradoni

chair 1 A. Boag chair 2 G. Gradoni Thursday, 17 11:20 – 13:00 room 201 **ICEAA**

11:20 – 11:40 Spin dynamics in open quantum systems: a DLvN-TDDFT approach

349 O. Hod, Tel Aviv University, Israel

11:40 – 12:00 From Spin Angular Momentum to Orbital Angular Momentum at High Frequencies

444 U. Zanzuri, Tel Aviv University, Israel; S. Fliescher, Tel Aviv University, Israel; T. Seideman, Northwestern University, United States; A. Bahabad, Tel Aviv University, Israel; A. Natan, Tel Aviv University, Israel

12:00 – 12:20 Relativistic quantum antenna arrays and quantum MIMO in curved spacetime: an approach through algebraic quantum field theory

347 S. Mikki, Zhejiang University-University of Illinois Urbana-Champaign (ZJUI) Institute, China - People

12:20 – 12:40 Quantum Simulation of Maxwell's Equations

466 D. Kashyap, Delhi Technological University, India; G. Yu, University of Surrey, United Kingdom; G. Gradoni, University of Surrey, United Kingdom

12:40 – 13:00 Wigner-Smith Time Delay and its Validity for Characteristic Wave Packets

439 A. Boag, Tel Aviv University, Israel; G. Slepyan, Tel Aviv University, Israel

32) Artificial Intelligence and Optimization Techniques in Computational Electromagnetics, organized by F. De Flaviis

chair 1 F. De Flaviis chair 2 Thursday, 17 14:30 – 16:30 room 201 **ICEAA**

14:30 – 14:50 Towards Agent-Driven mm-Wave Computational Electromagnetics: A Unified Surrogate Library With Closed-Loop Full-Wave Validation

519 Y. Huang, University of California Irvine, United States; H. Aghasi, University of California Irvine, United States

14:50 – 15:10 Optimizing Bandwidth by Redistributing Control Nodes on Spline-Based Patch and Groundplane of CPW-fed Planar Antenna

503 A.D. Prasetyo, Institut Teknologi Bandung, Indonesia; D.A. Nurmantris, Institut Teknologi Bandung, Indonesia; Z. Zulfi, Telkom University, Indonesia; B.S. Nugroho, Telkom University, Indonesia; I. Surahmat, Universitas Muhammadiyah Yogyakarta, Indonesia; H.N.P. Wisudawan, Universitas Islam Indonesia, Indonesia; C. Chairunnisa, Institut Teknologi Bandung, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

15:10 – 15:30 NGnet-based topology optimization of a 1-bit reconfigurable intelligent surface (RIS) unit cell

313 S. Bagherkhani, University of California, Irvine, United States; Y. Rahmat-Samii, University of California, Los Angeles, United States; F. De Flaviis, University of California, Irvine, United States

15:30 – 15:50 Dominance Versus Indicator Methods: Multiobjective Optimization Strategies for Sparse Array Synthesis

454 N.M. Pena, Politecnico di Milano, Italy; A. Barbieri, Politecnico di Milano, Italy; G.F. Martinez, Politecnico di Milano, Italy; R.E. Zich, Politecnico di Milano, Italy

15:50 – 16:10 Kernel-Aided Rational Macromodeling via Physics-Informed Szegő Kernels

237 T. Dhaene, Ghent University-imec, Belgium

16:10 – 16:30 Surrogate-assisted parallel bi-objective algorithm for antenna miniaturization

156 S. J. Lu, Southeast University, China - People; Q. Wu, Southeast University, China - People; H. M. Wang, Southeast University, China - People

33) Leaky-Wave and Quasi-Optical Approaches for mm-Wave Systems Based on Periodic Structures, organized by D. Comite, G. Valerio

chair 1 D. Comite chair 2 G. Valerio Thursday, 17 08:30 – 12:00 room 202 **ICEAA**

08:30 – 08:50 Predicting the Maximum Directivity of Metasurface Antennas using Infinitesimal Dipole Model

461 P.K. Mishra, IISc Bangalore, India; R. Malleboina, IISc Bangalore, India; D. Sarkar, IISc Bangalore, India

08:50 – 09:10 Effectiveness analysis of EBG waveguides for microwave snow melting to prevent electromagnetic wave leakage

387 M. Nakatsugawa, National Institute of Technology, Hakodate College, Japan; K. Hatazawa, National Institute of Technology, Hakodate College, Japan; T. Maruyama, Hiroshima Institute of Technology, Japan; M. Omiya, Hokkaido university, Japan; Y. Tamayama, Nagaoka University of Technology, Japan

09:10 – 09:30 Shared-Aperture Leaky-Wave Radiation Concept Using Dual Floquet Harmonics in Periodic Structures

362 D. Lee, Pohang University of Science and Technology, Korea, Republic of; W. Hong, Pohang University of Science and Technology, Korea, Republic of

09:30 – 09:50 Design of a Radial Line Curl Array for Near-Field Beam Type Wireless Power Transfer

345 T. Tomura, Institute of Science Tokyo, Japan; Y. Kihara, Institute of Science Tokyo, Japan; G. Nakayama, Institute of Science Tokyo, Japan; T. Wada, Institute of Science Tokyo, Japan

09:50 – 10:10 Semi-Analytical Formalism in 3-D Dielectric Woodpile Structure: Bound and Leaky-Modes

204 V. Jandieri, Nagoya Institute of Technology, Japan; A. Romano, Roma Tre University, Italy; G. Valerio, Sorbonne Université, France; L. Tognolatti, Roma Tre University, Italy; P. Baccarelli, Roma Tre University, Italy

10:10 – 10:30 Advances in multi-beam flat GRIN lens antennas

162 L. Song, University of Technology Sydney, Australia; Y. Wen, University of Technology Sydney, Australia; P. Qin, University of Technology Sydney, Australia; Y. J. Guo, University of Technology Sydney, Australia

11:00 – 11:20 A Compact Phase-Gradient Metasurface Dome for Enhanced Scanning Range in Phased Arrays

366 M. Poveda-García, Defense University Center of San Javier, Spain; D. Comite, Sapienza University of Rome, Italy; J. Gómez-Tornero, Technical University of Cartagena, Spain; A. Algaba-Brazález, Technical University of Cartagena, Spain

11:20 – 11:40 Nonlocal metasurface-assisted leaky-wave and cavity antennas

310 M. Kim, Hongik University, Korea, Republic of; S. Jang, Hongik University, Korea, Republic of; M. Cho, Hongik University, Korea, Republic of; S. Kim, Hongik University, Korea, Republic of; H. Ryu, Hongik University, Korea, Republic of; E. Lee, Kyung Hee University, Korea, Republic of; M. Kim, Hongik University, Korea, Republic of

11:40 – 12:00 A dual-frequency bidirectional leaky-wave corrugated antenna

446 B. Ambrogi, Sapienza University of Rome, Italy; F. Foglia Manzillo, CEA-Leti, Université Grenoble Alpes, France; A. Clemente, CEA-Leti, Université Grenoble Alpes, France; G. Valerio, Sorbonne Universite, CNRS, Laboratoire GeePs, France; D. Comite, Sapienza University of Rome, Italy

34) Metamaterials and metasurfaces - ICEAA

chair 1 D. Comite chair 2 Thursday, 17 12:00 – 16:30 room 202 **ICEAA**

12:00 – 12:20 cWGAN-Synthesized Unit Cells for Compact Near-Field Metasurface Beam Tilting

372 B. Zhang, National University of Singapore, Singapore; Z. N. Chen, National University of Singapore, Singapore

12:20 – 12:40 Exploring the Frequency Response of Nonlocal Metasurface Anti-Reflective Coatings for Optically Thick Material Slabs

185 A. Zhuravlev, ITMO University, Russian Federation; A. Shaham, Israel Institute of Technology, Israel; A. Epstein, Israel Institute of Technology, Israel; S. Glybovski, ITMO University, Russian Federation

12:40 – 13:00 Design Approach of PIN-Diode Driven Reconfigurable Reflective Electromagnetic Surface with Isolated Biasing Network

501 D.A. Nurmantris, Institut Teknologi Bandung, Indonesia; R.E. Poetro, Institut Teknologi Bandung, Indonesia; N. Sutisna, Institut Teknologi Bandung, Indonesia; A. Munir, Institut Teknologi Bandung, Indonesia

14:30 – 14:50 Electrically Controllable Asymmetric Absorptance of a One-Dimensional Photonic Crystal with a Central Three-Layer Defect

277 R. Rubio-Noriega, Pontificia Universidad Catolica del Peru, Peru; M. Clemente-Arenas, Universidad Tecnologica de Lima Sur, Peru; J. Urbina, The Pennsylvania State University, School of Electrical Engineering and Computer Science, United States; A. Lakhtakia, The Pennsylvania State University, Department of Engineering Science and Mechanics, United States

14:50 – 15:10 Time-varying metasurfaces for high-speed super-resolution RF imaging

290 G. Ichikawa, Nagoya institute of technology, Japan; Y. Kunitomo, Nagoya institute of technology, Japan; Y. Kozawa, Tohoku University, Japan; K. Serita, Waseda University, Japan; H. Wakatsuchi, Nagoya institute of technology, Japan

15:10 – 15:30 Circuit design of passive high-speed switching metasurfaces

291 H. Ito, Nagoya Institute of Techology, Japan; A. Nagata, Nagoya Institute of Techology, Japan; H. Wakatsuchi, Nagoya Institute of Techology, Japan

15:30 – 15:50 Millimeter-Wave Power Transfer via Surface-Wave Propagation on Flexible Metasurface Tape

305 P. T. Dang, Nagoya Institute of Technology, Japan; K. Suzuki, Nagoya Institute of Technology, Japan; Y. Ashikaga, Teraoka Seisakusho Co., Ltd., Tokyo, Japan, Japan; Y. Tsuchiya, Teraoka Seisakusho Co., Ltd., Tokyo, Japan, Japan; S. Phang, George Green Institute for Electromagnetics Research, Faculty of Engineering, University of Nottingham, Nottingham, UK, United Kingdom; H. Wakatsuchi, Nagoya Institute of Technology, Japan

15:50 – 16:10 Impact of the EBG Metamaterial Grid Size on Decoupling two Antennas at 60 GHz

368 N. Bunke, Technische Universität Berlin, Germany; R. Schuhmann, Technische Universität Berlin, Germany; R. Stöcker, Brandenburgische Technische Universität, Germany

16:10 – 16:30 Dual-port all-metal circular corrugated leaky-wave antenna for bidirectional scanning and broadside radiation

457 G. Pomante, Sapienza University, Italy; G. Flaviani, Sapienza University, Italy; B. Ambrogi, Sapienza University, Italy; P. Burghignoli, Sapienza University, Italy; G. Valerio, Sorbonne Université, France; D. Comite, Sapienza University, Italy

35) Advanced modeling techniques for the space plasma electromagnetic environment, organized by W. Scales and D. Lin

chair 1 W. Scales chair 2 D. Lin Thursday, 17 08:30 – 12:00 room 203 **ICEAA**

08:30 – 09:10 The State of Operational Space Weather Observations Enabling Modeling of the Space Plasma Environment

488 E. R. Talaat, Universities Space Research Association, United States

09:10 – 09:30 Modeling stormtime geospace as a complex system: recent progress from the Center for Geospace Storms

483 K. Sorathia, V.G. Merkin, A. Sciola, A. Michael, The Johns Hopkins University Applied Physics Laboratory, United States; D. Lin, K. Pham, National Center for Atmospheric Research, United States; S. Bao, Rice University, United States; M. Wiltberger, National Center for Atmospheric Research, United States; R. Varney, S. Roy, University of California, Los Angeles, United States

09:30 – 09:50 Considerations for Dayside Reconnection in Global Magnetohydrodynamics

537 D. T. Welling, University of Michigan, United States; A. Rewoldt, University of Michigan, United States

09:50 – 10:10 Introduction of REPPU -Simulation Study of the Magnetosphere-Ionosphere Response to the Solar Wind Impulse-

538 S. Fujita, Institute of Statistical Mathematics, Japan

10:10 – 10:30 3D Topology of Plasmoids at Substorm Onset in a Global MHD Simulation

540 D. Cai, Nagoya University of Commerce and Business, Japan; P. Bohla, Univ tsukuba, Japan; S. Fujita, ISM, Japan; M. Watanabe, Kyushu University, Japan

11:00 – 11:20 Sporadic E layer as an indicator for atmosphere-ionosphere-magnetosphere coupling

535 H. Liu, Kyushu University, Japan

11:20 – 11:40 Advancing space weather data-driven and machine learning applications for operations using the Space Weather Analyst

536 A. Engell, NextGen Federal Systems, United States

11:40 – 12:00 Whole Atmosphere Data Assimilation for Space Weather Specification and Forecasting

533 N.M. Pedatella, NSF-National Center for Atmospheric Research, United States; C.T. Hsu, NSF-National Center for Atmospheric Research, United States; F. Laskar, University of Colorado, United States

36) RCS, Remote Sensing and EM Characterization - ICEAA

chair 1 J. Shibayama chair 2 Y. Suzuki Thursday, 17 12:00 – 16:30 room 203 **ICEAA**

12:00 – 12:20 Radar Response Analysis for Dispersive Medium with Periodically Arranged Metallic Objects

435 Y. Masuda, Graduate School of Science and Technology, Nihon University, Japan; R. Ozaki, College of Science and Technology, Nihon University, Japan; T. Yamasaki, College of Science and Technology, Nihon University, Japan

12:20 – 12:40 Comparison of Kretschmann and Otto Configurations for Terahertz SPR Sensors with a Binary-Mixture Dielectric

172 H. Yagi, Tokyo Metropolitan University, Japan; Y. Suzuki, Tokyo Metropolitan University, Japan; J. Shibayama, Hosei University, Japan; J. Chakarothai, National Institute of Information and Communications Technology, Japan

12:40 – 13:00 Observations of AC Electric Fields and Electron Density Variations in the Ionosphere by S-520-27 Sounding Rocket

440 M. Matsuyama, Toyama Prefectural University, Japan; K. Ishisaka, Toyama Prefectural University, Japan; M. Yamamoto, Kyoto University, Japan; A. Kumamoto, Tohoku University, Japan; S. Saito, Electronic Navigation Research Institute, Japan; T. Abe, JAXA/ISAS, Japan

14:30 – 14:50 Broadband-Optimization-Flexible-Multilayer-Electromagnetic-Absorber-Planar-Analytical-Model

324 O.L. Lamrini, IETR-University of Rennes, France; G.D. Danielou, IETR-University of Rennes, France; H.B. Breiss, IETR-University of Rennes, France; A.S. Sharaiha, IETR-University of Rennes, France; R.B. Benzerga, IETR-University of Rennes, France

14:50 – 15:10 Experimental Characterization of Backscatter Signatures and Permittivity Using mmWave Radar for Medical Material Waste Identification

522 J. C. R. Cucchi Quispe, UNTELS, Peru; R. Kumar, SRM University AP, India; M. Clemente-Arenas, UNTELS, Peru

15:10 – 15:30 A Low-RCS Wideband Circularly Polarized Slot Antenna Array

235 Y. Wang, Communication University of China, China - People; J. Liu, Communication University of China, China - People; Q. Guo, Communication University of China, China - People; Z. Li, Communication University of China, China - People

15:30 – 15:50 A Compact Multi-Antenna Passive System for Detection, Direction Finding and Classification of Naval Radar Emitters in S- and X-Bands

394 R. Simniskis, Center for Physical Sciences and Technology, Lithuania; J. Zemgulyte, Center for Physical Sciences and Technology, Lithuania; K. Stankevicius, Center for Physical Sciences and Technology, Lithuania; A. Drabavicius, Center for Physical Sciences and Technology, Lithuania; S. Rudys, Center for Physical Sciences and Technology, Lithuania; P. Ragulis, Center for Physical Sciences and Technology, Lithuania

15:50 – 16:10 Foundation Models Under Class Imbalance in SAR Ship Classification: A Fusion-Based Evaluation

312 C.M. Awais, Institute of information science and technologies "Alessandro Faedo" (ISTI), CNR, Pisa, Italy; M. Reggiannini, Institute of information science and technologies "Alessandro Faedo" (ISTI), CNR, Pisa, Italy; D. Moroni, Institute of information science and technologies "Alessandro Faedo" (ISTI), CNR, Pisa, Italy

16:10 – 16:30 A 140-GHz Antenna-in-Package Transmit-Receive Array Using Stacked Patches for High-Precision Radar Applications

253 J.Y. Tan, Beijing Jiaotong University, China - People; Z. Li, Beijing Jiaotong University, China - People; Y.J. Li, Key Laboratory of All Optical Network and Advanced Telecommunication Network of MOE Beijing Jiaotong University, China - People; C.K. Hu, Beijing Jiaotong University, China - People; Z.R. Lu, Beijing Jiaotong University, China - People; X. Bu, Beijing Jiaotong University, China - People; J.H. Wang, Beijing Jiaotong University, China - People

37) Wireless Technologies - APWC

chair 1 J. Jianwei chair 2 Q.-P. Soo Thursday, 17 08:30 – 12:20 room 204 **APWC**

08:30 – 08:50 SAGE-6G: Towards a Sovereign AI-Guided Electromagnetic Ecosystem for Sixth-Generation Wireless Networks

389 A. Shastri, Banasthali Vidyapith, India

08:50 – 09:10 Design and Fabrication of a Small Loop Antenna for Underground Magnetic Communication

146 I.K. Cho, ETRI, Korea, Republic of; J.Y. Kim, ETRI, Korea, Republic of; H.J. Lee, ETRI, Korea, Republic of; J.H. Oh, ETRI, Korea, Republic of; S.W. Kim, ETRI, Korea, Republic of; K.S. Yoon, ETRI, Korea, Republic of

09:10 – 09:30 RAN-Centric Network Slicing: PRB Allocation and Throughput Assessment in an SDR-based 5G Mobile Network

236 J. J. Abularach Arnez, Sidia Institute of Science and Technology, Bolivia; W. Medeiros Silva, Sidia Institute of Science and Technology, Brazil; Y. Santos Barbosa, Sidia Institute of Science and Technology, Brazil; I. Da Silva Santos, Sidia Institute of Science and Technology, Brazil; C. A. Tavares Alves, Sidia Institute of Science and Technology, Brazil

09:30 – 09:50 Feasibility of SC-FDMA Re-Encoding for Packetized LTE-V2X microDoppler Sensing

521 B.M. Kihei, Kennesaw State University, United States

09:50 – 10:10 HARNR: Hybrid Attention-Residual Neural Receiver for 5G NR and Beyond Wireless Communications

482 P. Amutha, IIT Madras, India

10:10 – 10:30 A Study on Electromagnetic Wave Propagation Differences Between Rectilinear and Arched Tunnel Geometries

271 Z.X. Boey, Universiti Tunku Abdul Rahman, Malaysia; Q.P. Soo, Universiti Tunku Abdul Rahman, Malaysia; S.Y. Lim, University of Nottingham Malaysia Campus, Malaysia; E.H. Lim, Universiti Tunku Abdul Rahman, Malaysia; P.L. Toh, Universiti Tunku Abdul Rahman, Malaysia; K.H. Yeap, Universiti Tunku Abdul Rahman, Malaysia

11:00 – 11:20 OTA Characterization of Dual-User IEEE 802.11be EHT-MU Under Transmit-Chain Imbalance

442 M. Lodro, University of Bristol, United Kingdom; F. Raimondo, University of Bristol, United Kingdom; G. Hilton, University of Bristol, United Kingdom; M. Beach, University of Bristol, United Kingdom; A. Austin, University of Bristol, United Kingdom

11:20 – 11:40 A Lightweight Flexible Dual-Polarized Rectenna Array for IoT Energy Harvesting

186 J. Jianwei, Kyoto University, Liping Yan, Changjun Liu, Sichuan University, China, N.Shinohara, Japan, Kyoto University, Japan

11:40 – 12:00 Implementing and Testing Integrated STIR/SHAKEN and Rich Call Data Security in a Mobile Network Testbed

150 L. Silva Araujo, Sidia Institute of Science and Technology, Brazil; R. S. Santos Furtado, Sidia Institute of Science and Technology, Brazil; M. G. Lima Damasceno, Sidia Institute of Science and Technology, Brazil; I. A. Barros Gomes, Sidia Institute of Science and Technology, Brazil; J. J. Abularach Arnez, Sidia Institute of Science and Technology, Bolivia

12:00 – 12:20 Powering low-power internet of things devices: RF energy-harvesting opportunities and technical challenges

516 Z. Aasa, Ladoke Akintola University of Technology, Nigeria; F. Elias, Manchester Metropolitan University, UK, United Kingdom; S. Ekpo, Manchester Metropolitan University, UK, United Kingdom; C. Nwankwo, Manchester Metropolitan University, UK, United Kingdom; I. Ubesiri-Narayana, Manchester Metropolitan University, UK, United Kingdom

38) Antennas and Arrays - ICEAA

chair 1 Z. Cui chair 2 M. Johnston Thursday, 17 12:20 – 16:30 room 204 **ICEAA**

12:20 – 12:40 Transparent vertical-polarization glass antenna with switched omnidirectional and focused beams

132 Z.Q. Cui, University of Technology Sydney,GBDTC, Australia; S.L. Chen, University of Technology Sydney,GBDTC, Australia; P.Y. Qin, University of Technology Sydney,GBDTC, Australia; Y.J. Guo, University of Technology Sydney,GBDTC, Australia

12:40 – 13:00 Compact LTCC Realization of a 4×4 Butler Matrix for Ku-Band

178 M.S. Akyul, Istanbul Technical University, Turkey; O. Ozdemir, Istanbul Technical University, Turkey

14:30 – 14:50 Conical reflector leaky-wave antenna: preliminary design

450 C. Canale, Sapienza University of Rome, Italy; G. Pomante, Sapienza University of Rome, Italy; G. Flaviani, Sapienza University of Rome, Italy; P. Burghignoli, Sapienza University of Rome, Italy; D. Comite, Sapienza University of Rome, Italy

14:50 – 15:10 K-Means Amplitude Clustering for Compact Subarray Configuration in FDA Radar

352 P.E. Alparslan Bozkurt, ASELSAN A.S., Turkey; O. Ozdemir, Istanbul Technical University, Turkey

15:10 – 15:30 A Composite Fitness Function with Main-Beam Control for Phase-Only Null Steering Using PSO

353 E.S. Ortak, ASELSAN A.S., Turkey; O. Ozdemir, Istanbul Technical University, Turkey

15:30 – 15:50 A COSY Antenna Incorporating a Pattern Coil for Dual-Band 2.4/5 GHz WLAN Applications

223 S. Kojima, The University of Electro-Communications, Japan; R. Ishikawa, The University of Electro-Communications, Japan

15:50 – 16:10 Dual-Band Dual-Polarized Ultra-Thin Flexible Antenna Array for mmWave Wearable Applications

306 S. Alamdar, University of California, Irvine, United States; F. De Flaviis, University of California, Irvine, United States; S. Saadat, Mflex, United States

16:10 – 16:30 Electromagnetic analysis of the Ghana radio telescope for K-band applications

329 M. A. Johnston, South African Radio Astronomy Observatory, South Africa

39) Mathematical advances in electromagnetics - ICEAA, organized by P. Smith, E. Vinogradova

chair 1 P. Smith chair 2 E. Vinogradova Friday, 18 08:30 – 11:20 room 201 **ICEAA**

08:30 – 08:50 Wave scattering by random inhomogeneities of the medium

113 B.V. Budaev, University of California at Berkeley, United States

08:50 – 09:10 A two-dimensional problem of diffraction by a convex polygon

120 B.V. Budaev, University of California at Berkeley, United States

09:10 – 09:30 Frequency Spectrum and Resonances of Rotating Structures

231 T. Geva, Tel-Aviv University, Israel; B. Z. Steinberg, Tel-Aviv University, Israel

09:30 – 09:50 Electric Field Integral Equation for a Body-of-Revolution Scatterer in a PEC-Terminated Rectangular Waveguide

412 A. Akgun, Eindhoven University of Technology, Netherlands; S. Eijsvogel, Eindhoven University of Technology, Netherlands; B.P. de Hon, Eindhoven University of Technology, Netherlands; M.C. van Beurden, Eindhoven University of Technology, Netherlands

09:50 – 10:10 Electromagnetic scattering characteristics of material-loaded parallel-plate waveguides under H-Polarized incidence

187 T. Zhang, Chuo University, Japan; K. Kobayashi, Chuo University, Japan

10:10 – 10:30 The Abel integral transform and the regularization of electromagnetic wave scattering problems

376 P.D. Smith, Macquarie University, Australia; E.D. Vinogradova, Macquarie University, Australia

11:00 – 11:20 Resonance scattering of EM plane waves by arbitrarily shaped slotted metallic cylinders

425 E. Vinogradova, Macquarie University, Australia

40) Recent Developments in Computational Electromagnetic Techniques and Engineering Applications - ICEAA, organized by A.A. Ergin, H.A. Ulku

chair 1 A.A. Ergin, H.A. Ul chair 2 A.A. Ergin, H.A. Ulku Friday, 18 11:20 – 12:40 room 201 **ICEAA**

11:20 – 11:40 Range Profile Construction Using Triangular Ray Tube Tracing

490 A.A. Ergin, Bahcesehir University, Turkey; M. Güvenç, Yeditepe University, Turkey

11:40 – 12:00 Well-Conditioned T-Matrix Method for a Pair of Transparent Inhomogeneities

447 M.E. Hatipoglu, Gebze Technical University, Turkey; T. Tanaka, Kyoto University, Japan; F. Dikmen, Gebze Technical University, Turkey

12:00 – 12:20 Genetic Algorithm and Neural Network Based Fine Tuning of the Sommerfeld Integration Path in Planar Layered Media

445 M.E. Hatipoglu, Gebze Technical University, Turkey; A. Alparslan, Trakya University, Turkey; F. Dikmen, Gebze Technical University, Turkey

12:20 – 12:40 On the Electrostatic Analysis of Two Circular Disks

285 D. Coksak, Yeditepe University, Turkey; S. Cakmak, Yeditepe University, Turkey; H. A. Ulku, Yeditepe University, Turkey

41) Metamaterials with Symmetry Properties, organized by R. Kastner

chair 1 R. Kastner chair 2 Friday, 18 08:30 – 12:20 room 202 **ICEAA**

08:30 – 08:50 Toward Practical Nonreciprocal Metasurfaces: Design Framework, Mechanisms, and Applications

480 K. Takahagi, Acquisition Technology and Logistics Agency, Ministry of Defense, Japan; A. Tennant, The University of Sheffield, United Kingdom

08:50 – 09:10 Polarizability tensor and current symmetries of high-order knot scatterers via modal EFIE

328 N. Goshen, Tel-Aviv University, Israel; Y. Mazor, Tel-Aviv University, Israel

09:10 – 09:30 Towards Realization of Thin PTD-Symmetric Surfaces at the VHF-UHF Bands

138 R. Geva, Tel Aviv University, Israel; R. Kastner, Tel Aviv University, Israel

09:30 – 09:50 AI-Driven Chiral Metasurfaces Exhibiting Prominent Circular Dichroism

197 M. Iwanaga, National Institute for Materials Science (NIMS), Japan; C.H. Chiang, National Institute for Materials Science (NIMS), Japan; Y.L. Ho, National Institute for Materials Science (NIMS), Japan; M.K. Sahoo, National Institute for Materials Science (NIMS), Japan; K. Watanabe, National Institute for Materials Science (NIMS), Japan

09:50 – 10:10 Rotation Induced Symmetries in Rest-Frame Electrodynamics of Rotating Structures

230 T. Geva, Tel-Aviv University, Israel; B. Z. Steinberg, Tel-Aviv University, Israel

10:10 – 10:30 Extending the Scan Range of Antenna Arrays Using Anisotropic Nonlocal Phase-Gradient Metasurfaces: From Rigorous Theory to Realistic Constructs

183 A. Zhuravlev, ITMO University, Russian Federation; A. Shaham, Israel Institute of Technology, Israel; A. Epstein, Israel Institute of Technology, Israel

11:00 – 11:20 Zero-spacing moiré metasurface for dynamic beamforming

124 S. Liu, T.J. Cui, Southeast University, China - People

11:20 – 11:40 Penetrable nonlinear metagratings for transmissive bistable diffraction

275 N. Cohen Levi, Technion – Israel Institute of Technology, Israel; A. Epstein, Technion – Israel Institute of Technology, Israel

11:40 – 12:00 Infrared Optical Metasurfaces with Broken Symmetry Meta-atoms

529 V. Raghunathan, Indian Instititute of Science, India; U. Bag, Indian Institute of Science, India; A.S. Lal Krishna, Indian Instititute of Science, India

12:00 – 12:20 Leaky-mode generation in all-metal corrugated structures via slow-wave perturbation

462 G. Flaviani, Sapienza University of Rome, Italy; B. Ambrogi, Sapienza University of Rome, Italy; G. Pomante, Sapienza University of Rome, Italy; P. Burghignoli, Sapienza University of Rome, Italy; D. Comite, Sapienza University of Rome, Italy

42) Visualization and Imaging of Electromagnetic Fields and Waves, organized by S. Yagitani

chair 1 S. Yagitani chair 2 Friday, 18 08:30 – 09:30 room 203 **ICEAA**

08:30 – 08:50 Imaging of Electromagnetic Field Distributions by Metasurface Sensors

451 S. Yagitani, Kanazawa University, Japan; T. Imachi, Kanazawa University, Japan; M. Ozaki, Kanazawa University, Japan

08:50 – 09:10 A Compact Metasurface Sensor for Near-Field Electromagnetic Mapping and Leakage Detection

441 E. M. Putro, Kanazawa University, Japan; S. Yagitani, Kanazawa University, Japan; T. Imachi, Kanazawa University, Japan; M. Ozaki, Kanazawa University, Japan

09:10 – 09:30 Prototype of a low frequency metasurface absorber with embedded ferrite sheets

326 A. Tatsuta, Panasonic Connect Co., Ltd,, Japan; S. Tanimoto, Panasonic Connect Co., Ltd,, Japan; M. Iyoda, Panasonic Connect Co., Ltd,, Japan; M. Arimatsu, Kanazawa University, Japan; I. Fujimori, Kanazawa University, Japan; S. Yagitani, Kanazawa University, Japan

43) Technologies and Measurement Methods for Antennas - ICEAA

chair 1 M. de Villiers chair 2 H. Maune Friday, 18 09:30 – 12:20 room 203 **ICEAA**

09:30 – 09:50 Microwave Liquid Crystal Technologies for Reconfigurable Intelligent Surfaces: Toward Scalable Smart Radio Environments

189 H. Maune, TU Darmstadt, Germany

09:50 – 10:10 Machine Learning-Based Source Separation of RF Signals for Digital Communications

371 N. Karsch, Ruhr University Bochum, Germany; T. Musch, Ruhr University Bochum, Germany

10:10 – 10:30 Assessing the incident field in a spherical near-field setup via a shifted halfwave dipole

256 A.L. Vergnes, ENAC, France; A. Chabory, ENAC, France; R. Douvenot, ENAC, France; L. Kuhler, ENAC, France; C. Morlaas, ENAC, France; N. Mézières, CNES, France

11:00 – 11:20 Holographic measurement of the first MeerKAT Extension antennas in the ku band

373 M. S. de Villiers, South African Radio Astronomy Observatory, South Africa; A. Peens-Hough, South African Radio Astronomy Observatory, South Africa; M. Johnston, South African Radio Astronomy Observatory, South Africa; T. Glaubach, Max-Planck-Institut fur Radioastronomie, Germany; D. C. Bok, OHB Digital Connect GmbH, Germany

11:20 – 11:40 Dual-Band Second-Order Reflective Polarization Rotator

381 A. El Yousfi, King Fahd University of Petroleum and Minerals, Saudi Arabia; A. F. Abbas, King Fahd University of Petroleum and Minerals, Saudi Arabia; A. M. Alnour Ahmed, The University of Queensland, Australia; A. A. Omar, King Fahd University of Petroleum and Minerals, Saudi Arabia

11:40 – 12:00 Development of a Millimeter-Wave Transmitarray Antenna with Bidirectional Beam Steering

127 P. Mei, Huazhong University of Science and Technology, China - People; J. W. Yu, Huazhong University of Science and Technology, China - People; G.F. Pedersen, Aalborg University, Denmark; S. Zhang, Aalborg University, Denmark

12:00 – 12:20 Electro-Optic Control of Asymmetric Electromagnetic Transmission Characteristics of a Grating

250 M. Clemente-Arenas, Universidad Nacional Tecnol´ ogica de Lima Sur, Peru; R.E. Rubio-Noriega, Pontificia Universidad Católica del Perú, Peru; J. V. Urbina, The Pennsylvania State University, United States; A. Lakhtakia, The Pennsylvania State University, United States

44) Microwave antennas, components, and devices - APWC

chair 1 W.C. Lai chair 2 Y.-F. Tsao Friday, 18 08:30 – 09:50 room 204 **APWC**

08:30 – 08:50 A Top-Parallel Coupled Quadrature Voltage-Controlled Oscillator in Low Cost 0.35 µm CMOS

383 W.C. Lai, S.L. JAng, C.W. Chang, C.D. Chinh, Ming Chi University of Technology, Taiwan

08:50 – 09:10 Demonstration of a GaN-based Single-Pole-Quadruple-Throw Switch for Millimeter-wave Beam-Switching System

218 Y. F. Tsao, National Yang Ming Chiao Tung University, Taiwan; C. Y. Liu, National Yang Ming Chiao Tung University, Taiwan; O. Hilt, Ferdinand-Braun-Institut (FBH), Germany; S. Chevtchenko, Ferdinand-Braun-Institut (FBH), Germany; H. Yazdani, Ferdinand-Braun-Institut (FBH), Germany; Y. H. Tu, National Yang Ming Chiao Tung University, Taiwan; H. T. Hsu, National Yang Ming Chiao Tung University, Taiwan

09:10 – 09:30 Design of dual-band power divider with purely resistive isolation network

234 C.Y. Liu, NYCU, Taiwan; H.T. Hsu, NYCU, Taiwan; Y.H. Tu, NYCU, Taiwan; Y.F. Tsao, NYCU, Taiwan

09:30 – 09:50 Multiple-Band Voltage-Controlled Oscillator of Synthesizer with Phase Balanced Micromixer

384 W.C. Lai, Ming Chi University of Technology, Taiwan

45) Advances in Computational electromagnetics and Optimization - ICEAA

chair 1 G. Martinez chair 2 Y. Wada Friday, 18 09:50 – 12:40 room 204 **ICEAA**

09:50 – 10:10 A large-scale database search method for real-time estimation and optimization

308 Y. Wada, Nagoya Institute of Technology, Japan; R. Ikeya, Nagoya Institute of Technology, Japan; H. Shiokawa, University of Tsukuba, Japan; H. Wakatsuchi, Nagoya Institute of Technology, Japan

10:10 – 10:30 Directional H2-matrix method with higher-order hierarchical basis functions for large-scale electromagnetic scattering analysis

517 A. Noor, Howard University, United States; S. Yan, Howard University, United States

11:00 – 11:20 A Hybrid Kernel-Independent Fast Multipole Method for Efficient Simulation of Layered Media

410 S.S. Vaezi, Purdue University, United States; L.J. Gomez, Purdue University, United States; W.C. Chew, Purdue University, United States

11:20 – 11:40 Comparison of macro-basis-function construction methods for reduced-order analysis of cavity-backed reflectarrays

406 D. Lin, Chalmers University of Technology, Sweden; L. Manholm, Ericsson Research, Sweden; O. Talcot, Ericsson Research, Sweden; R. Maaskant, Chalmers University of Technology, Sweden

11:40 – 12:00 Solving-system transformation for inverse scattering with mixed boundary conditions

364 B. Jiang, University of Science and Technology of China, China - People; C. Chen, University of Science and Technology of China, China - People; W. Chen, University of Science and Technology of China, China - People; X. Zhang, University of Science and Technology of China, China - People

12:00 – 12:20 Automatic Generation of Pixel-Based Patch Antennas Using Fast Rank-Revealing Algorithm

523 A. Gupta, IIT Madras, India; A. Bekasiewicz, Gdansk University of Technology, Poland

12:20 – 12:40 Design of a Reflectarray Antenna With Quantum Behaved Warring-States Optimization

449 F. Chiaudani, Politecnico di Milano, Italy; G.F. Martinez, Politecnico di Milano, Italy; E.L. Zich, Politecnico di Milano, Italy; R.E. Zich, Politecnico di Milano, Italy