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EuMC01 : Focus Session on Modal Analysis of Electromagnetic Structures

Chair: George Kyriacou, Democritus University of Thrace
Co-Chair: Theodoros Kaifas, Aristotle University of Thessaloniki
Venue: Room 242B, Time 08:30 – 10:10, Tuesday 8th September 2015

EuMC 2015 Table of Contents

EuMC02 : Focus Session on Microwave in Agriculture, Environment and Earth Observation (MAGEO)

Chair: Maurizio Bozzi, Università di Pavia
Co-Chair: Vesna Crnojevic-Benjin, University of Novi Sad
Venue: Room 252A, Time 08:30 – 10:10, Tuesday 8th September 2015

EuMC03 : Passive Millimeter-Wave Circuits

Chair: Magdalena Salazar Palma, Universidad Carlos III de Madrid
Co-Chair: Philippe Ferrari, University of Grenoble Alpes
Venue: Room 252B, Time 08:30 – 10:10, Tuesday 8th September 2015

40 **A 200–325-GHz Wideband, Low-Loss Modified Marchand Balun in SiGe BiCMOS Technology**
Faisal Ahmed, Muhammad Furqan, Andreas Stelzer, Johannes Kepler Universität Linz, Austria

44 **Integration of Lange Couplers in SiGe BiCMOS Technology for RF and mm-Wave Applications: Perspectives for Distributed Chip-Package-PCB Co-Integration**
S. Wane [1], L. Leyssenne [2], O. Tesson [1], O. Doussin [3], D. Bajon [3], D. Lesénéchal [2], T.V. Dinh [2], M.P. van Heijden [4], Ralf Pijper [4], P. Magnée [4], P. Descamps [2], A. Erdem [1]
[1]NXP Semiconductors, France; [2]LaMIPS, France; [3]ISAE, France; [4]NXP Semiconductors, The Netherlands

48 **Dispersive Model for the Phase Velocity of Slow-Wave CMOS Coplanar Waveguides**
Anne-Laure Franc [1], Emmanuel Pistono [2], Philippe Ferrari [2]
[1]LAPLACE, France; [2]IMEP-LAHC, France

52 **A 2–30GHz Multi-Octave Planar Microwave Six-Port for Reflectometry Applications**
Andreas Bauch [1], Maximilian Hofmann [1], Johannes Nehring [1], Robert Weigel [1], Dietmar Kissinger [2]
[1]FAU Erlangen-Nürnberg, Germany; [2]IHP, Germany

56 **High Isolation MMIC Switch Design Technique Based on Novel High-/Low-Pass Switch Concept**
Hiroshi Mizutani [1], Ryo Ishikawa [2], Kazuhiko Honjo [2]
[1]Salesian Polytechnic, Japan; [2]University of Electro-Communications, Japan

EuMC04 : Systems and Techniques for Wireless Power Transfer and Energy Harvesting

Chair: Kamran Ghorbani, RMIT University
Co-Chair: Shigeo Kawasaki, Japan Aerospace Exploration Agency
Venue: Room 253, Time 08:30 – 10:10, Tuesday 8th September 2015

60 **Modulated Scheme and Input Power Impact on Rectifier RF-DC Efficiency for WiCoPT System**
Hiroto Sakaki [1], Kenjiro Nishikawa [1], Satoshi Yoshida [2], Shigeo Kawasaki [2]
[1]Kagoshima University, Japan; [2]JAXA, Japan

64 **Wireless Energy Link for Deep Brain Stimulation**
Giuseppina Monti, Maria Valeria De Paolis, Luciano Tarricone, Università del Salento, Italy

68 **Highly Sensitive FM Frequency Scavenger Integrated in Building Materials**
Negin Shariati, Wayne S.T. Rowe, Kamran Ghorbani, RMIT University, Australia

72 **Beam Collecting Efficiency Analysis in Microwave Power Transmission Demonstration System for SSPS**
Yazhou Dong, Shi-wei Dong, Ying Wang, Wenli Fu, He Bai, Xiaojun Li, Zhengjun Li, CAST, China

76 **RF CMOS Wireless Implantable Microsystem for Sacral Roots Stimulation with On-Chip Antenna and Far-Field Wireless Powering**
F. Rodrigues, S. Gomes, P. Anacleto, J. Fernandes, P.M. Mendes, Universidade do Minho, Portugal

EuMC05 : Power Amplifier Architectures

Chair: Luc Lapierre, CNES
Co-Chair: Olof Bengtsson, FBH
Venue: Room 243, Time 13:50 – 15:30, Tuesday 8th September 2015

80 **IF Predistortion in the Block Upconversion Path for Modern Satcom Applications in the Ku-Band**
Daniel Maassen, Felix Rautschke, Georg Boeck, Technische Universität Berlin, Germany

84 **Improving the Power Evenness of Power Amplifiers Using Out-of-Phase Combining**
Alexander Alt, André Grede, Daniel Gruner, TRUMPF Hüttinger, Germany

88 **A Load-Modulated Low-Power Amplifier with Average Power Tracking**
K. Mimis, S. Wang, Gavin T. Watkins, Toshiba Research Europe, UK

92 **Low Complexity Charge Pump Envelope Tracking RF Power Amplifier**
Gavin T. Watkins, K. Mimis, Toshiba Research Europe, UK

EuMC06 : Chipless RFID Technologies

Chair: Martin Vossiek, FAU Erlangen-Nürnberg
Co-Chair: Antonio Lazaro, Universitat Rovira i Virgili
Venue: Room 252A, Time 13:50 – 15:30, Tuesday 8th September 2015

96 **A Compact Printable Dual-Polarized Chipless RFID Tag Using Slot Length Variation in 'I' Slot Resonators**
Md. Aminul Islam, Nemai Karmakar, Monash University, Australia

100 **Higher Order Pulse Modulators for Time Domain Chipless RFID Tags with Increased Information Density**
Christian Mandel [1], M. Schüßler [1], Matthias Nickel [1], Bernd Kubina [1], Rolf Jakoby [1], Maximilian Pöpperl [2], Martin Vossiek [2]
[1] Technische Universität Darmstadt, Germany; [2] FAU Erlangen-Nürnberg, Germany

104 **Simplified, High Performance Transceiver for Phase Modulated RFID Applications**
N.B. Buchanan, Vincent Fusco, Queen's University Belfast, UK

107 **Improvement of RCS Response of U-Shaped Strip-Based Chipless RFID Tags**
Milan Polivka, Jaroslav Havlicek, Milan Svanda, Jan Machac, Czech Technical University in Prague, Czech Republic

111 **Modulated Corner Reflector Using Frequency Selective Surfaces for FMCW Radar Applications**
A. Lazaro, J. Lorenzo, R. Villarino, D. Girbau, Universitat Rovira i Virgili, Spain

EuMC07: Passive Power Dividers 1

Chair: Anne-Laure Franc, LAPLACE
Co-Chair: Nikolina Jankovic, University of Novi Sad
Venue: Room 252B, Time 13:50 – 15:30, Tuesday 8th September 2015

115 **Wideband Lumped-Element Wilkinson Power Dividers Using LC-Ladder Circuits**
Yosuke Okada, Tadashi Kawai, Akira Enokihara, University of Hyogo, Japan

119 **Fast Design Method and Validation of Very Wideband Tapered Wilkinson Divider**
Enric Miralles [1], Bernhard Schönlinner [1], Volker Ziegler [1], Frank Ellinger [2]
[1] Airbus Group Innovations, Germany; [2] Technische Universität Dresden, Germany

123 **A Design of Unequal Termination Impedance Power Divider with Filtering and Out-of-Band Suppression Characteristics**
Phirun Kim, Junhyung Jeong, Girdhari Chaudhary, Yongchae Jeong, Chonbuk National University, Korea

127 **A Design of Unequal Power Divider with Positive and Negative Group Delays**
Girdhari Chaudhary, Junsik Park, Qi Wang, Yongchae Jeong, Chonbuk National University, Korea

131 **A P-Band 5-Way Unequal Split High Power Divider for SAR Applications**
Alberto Di Maria, Markus Limbach, Ralf Horn, Andreas Reigber, DLR, Germany

EuMC08: Efficient Rectifying Circuits

Chair: Alessandra Costanzo, Università di Bologna
Co-Chair: Nuno Carvalho, University of Aveiro
Venue: Room 253, Time 13:50 – 15:30, Tuesday 8th September 2015

135 **Dynamic Range Enhancement of RF Rectifiers Through Adaptive Power Distribution Employing an Extended Resonance Network**
Xiaoyu Wang, Amir Mortazawi, University of Michigan, USA

139 **Rigorous Design of Wireless Power Transfer Links with One Transmitter and Two Receivers**
Marco Dionigi [1], Mauro Mongiardo [1], Renzo Perfetti [1], Slawomir Koziel [2]
[1] Università di Perugia, Italy; [2] Reykjavik University, Iceland

143 **A Wearable Wireless Energy Link**
Giuseppina Monti, Laura Corchia, Luciano Tarricone, Università del Salento, Italy

147 **Wide Bandwidth for High-Speed Communication in Mid-Range, Resonant WPT and RFID Systems**
Jordan Besnoff, David S. Ricketts, North Carolina State University, USA

151 **Study on Energy Recovery from Substrate Integrated Waveguide Circuits**
Miguel A. Sánchez-Soriano [1], Yves Quéré [1], Vincent Le Saux [2], Cédric Quendo [1], Jorge D. Martínez [3], Vicente E. Boria [3]
[1] Lab-STICC, France; [2] LBMS, France; [3] Universidad Politécnica de Valencia, Spain

EuMC09: Nanoscale Characterization and On-Wafer Calibration

Chair: Danielle Vanhoenacker-Janvier, UCL
Co-Chair: Ferry Kienberger, Keysight Technology Austria
Venue: Room 202 + 203, Time 13:50 – 15:30, Tuesday 8th September 2015

155 **Near-Field Scanning Microwave Microscope for Subsurface Non-Destructive Characterization**
Sijia Gu, Kamel Haddadi, A. El Fellahi, Tuami Lasri, IEMN, France

159 **Scanning Microwave Microscopy for Nanoscale Characterization of Semiconductors: De-Embedding Reflection Contact Mode Measurements**
L. Michalas [1], Andrea Lucibello [1], G. Badino [2], C.H. Joseph [1], Enrico Brinciotti [2], Ferry Kienberger [2], Emanuela Proietti [1], Romolo Marcelli [1]
[1] CNR-IMM, Italy; [2] Keysight Technologies, Austria

163 **Nanorobotic RF Probe Station for Calibrated On-Wafer Measurements**
A. El Fellahi, Kamel Haddadi, J. Marzouk, S. Arscott, C. Boyaval, Tuami Lasri, G. Dambrine, IEMN, France

167 **New 3D-TRL Structures for On-Wafer Calibration: For High Frequency S-Parameter Measurement**
Potéreau Manuel [1], Sébastien Fregonese [1], Arnaud Curutchet [1], Peter Baureis [2], Thomas Zimmer [1]
[1] IMS (UMR 5218), France; [2] FHWS, Germany

N/A **On the ill-Conditioned Problem of On-Wafer Calibration for Broadband Device/Circuit Scattering Parameter Measurements Without Impedance-Standard Substrate**
Chien-Chang Huang, Wei-Che Lin, Yuan Ze University, Taiwan

EuMC10: Novel Modal Techniques

Chair: Maurizio Bozzi, Università di Pavia
Co-Chair: Clive Tzuang, Tianjing University
Venue: Room 241, Time 16:10 – 17:50, Tuesday 8th September 2015

175 **Characteristic Mode Analysis of Electromagnetic Structures**
D.J. Ludick [1], P. Futter [1], U. Jakobus [1], R. Fiedler [2], M. Schick [2], E. Lezar [2]
[1] Altair Development, South Africa; [2] Altair Engineering, Germany

179 **A Characteristic Mode Analysis of Parallel Resonances Exploiting the Finite Element Scheme**
Constantinos L. Zekios, D.G. Makris, R.T. Maximidis, Peter C. Allilomes, George A. Kyriacou, Democritus University of Thrace, Greece

183 **Monolithic Leaky-Mode Antenna on the Perforated Ground Plane: Modal Characteristics**
Xinru Li [1], Qianru Weng [1], Hsien-Shun Wu [1], C.-K.C. Tzuang [2]
[1] Tianjin University, China; [2] UCAS, China

187 **An Inner Outer Iteration Scheme for the Spurious Free Solution of Polynomial Eigenvalue Problems of Electrically Large Structure**
Constantinos L. Zekios, Peter C. Allilomes, George A. Kyriacou, Democritus University of Thrace, Greece

191 **Frequency and Polarization Selectivity of Graphene Strip Gratings**
Tatiana L. Zinenko [1], Akira Matsushima [2], Alexander I. Nosich [1]
[1] NASU, Ukraine; [2] Kumamoto University, Japan

EuMC11 : Channel Measurement and Propagation

Chair: Patrice Pajusco, LabSTICC, Telecom Bretagne
Co-Chair: Michal Mrozowski, Gdansk University of Technology
Venue: Room 242A, Time 16:10 – 17:50, Tuesday 8th September 2015

195 **The Influence of Street Furniture and Tree Trunks in Urban Scenarios on Ray Tracing Simulations in the Millimeter Wave Band**
Barış Göktepe, Michael Peter, Richard J. Weiler, Wilhelm Keusgen, Fraunhofer HHI, Germany

199 **Millimeter Wave Spatial Multiplexing : Feasibility and Performance of a Short Range 2×2 Link**
Eddy Dailleux [1], Jean-François Frigon [1], Chaouki Hannachi [2], Serioja Ovidiu Tatu [2]
[1]École Polytechnique de Montréal, Canada; [2]INRS-EMT, Canada

203 **Broadband Transmission Performance and Antenna Displacement Tolerance in 4×4 Short-Range MIMO Simple Decoding**
Kazumitsu Sakamoto, Ken Hiraga, Maki Arai, Tomohiro Seki, Toshimitsu Tsubaki, Hideki Toshinaga, Tadao Nakagawa, NTT Corporation, Japan

207 **Antenna Placement and Wave Propagation for Car-to-Car Communication**
Miguel Bueno Diez, Patrick Plitt, Wilfrid Pascher, Stefan Lindenmeier, Universität der Bundeswehr München, Germany

211 **On-Body Propagation Characterization with an H-Plane Substrate Integrated Waveguide (SIW) Horn Antenna at 60GHz**
Solofo Razafimahatratra [1], Julien Sarrazin [1], Aziz Benlarbi-Delaï [1], Theodoros Mavridis [2], Luca Petrillo [2], Philippe De Doncker [2], Carole Leduc [3], Maxim Zhadobov [3], Ronan Sauleau [3]
[1]L2E, France; [2]Université Libre de Bruxelles, Belgium; [3]IETR, France

EuMC13 : Circuit Design for Power Amplifiers

Chair: Georg Fischer, FAU Erlangen-Nürnberg
Co-Chair: Franco Giannini, Università di Roma "Tor Vergata"
Venue: Room 243, Time 16:10 – 17:50, Tuesday 8th September 2015

215 **A Linearized, High Efficiency 2.7GHz Wideband Doherty Power Amplifier with Class-J Based Performance Enhancement**
Neal Tuffy, Lyndon Pattison, M/A-COM Technology Solutions, UK

219 **A 2.5-GHz Band Low Voltage High Efficiency CMOS Power Amplifier IC Using Parallel Switching Transistor for Short Range Wireless Applications**
Taufiq Alif Kurniawan, Xin Yang, Xiao Xu, Toshihiko Yoshimasu, Waseda University, Japan

223 **A 0.85–2.7GHz Two-Cell Distributed GaN Power Amplifier Designed for High Efficiency at 1-dB Compression**
Christer M. Andersson, Eigo Kuwata, Yoshifumi Kawamura, Shintaro Shinjo, Koji Yamanaka, Mitsubishi Electric Corporation, Japan

227 **A 230W, 1.8 to 2.2GHz Broadband LDMOS Power Amplifier Utilizing Multi-Section Integrated Passive Device Input Matching**
Lei Zhao [1], Mike Watts [1], Basim Noori [2], Jeff Jones [1]
[1]Freescale Semiconductor, USA; [2]Apple, USA

EuMC14: Low Noise Amplifiers and Oscillators

Chair: Patrice Gamand, NXP
Co-Chair: Thierry Taris, IMS, University of Bordeaux
Venue: Room 251, Time 16:10 – 17:50, Tuesday 8th September 2015

231 **Dynamic Behaviour of a Low-Noise Amplifier GaN MMIC Under Input Power Overdrive**
Cristina Andrei[1], Olof Bengtsson[2], Ralf Doerner[2], Serguei A. Chevtchenko[2], Wolfgang Heinrich[2], Matthias Rudolph[1]
[1]Brandenburgische Technische Universität, Germany; [2]FBH, Germany

235 **High Gain Fully On-Chip LNAs with Wideband Input Matching in 0.15-μm GaAs pHEMT for Radio Astronomical Telescope**
Cheng-Feng Chou[1], Yu-Chuan Chang[1], Huei Wang[1], Chau-Ching Chiong[2]
[1]National Taiwan University, Taiwan; [2]Academia Sinica, Taiwan

239 **A Phase Noise Improvement of 19GHz VCO with Use of Feedback Coupled-Line Resonator**
T. Kawasaki, A. Otsuka, M. Kubota, T. Tokumitsu, S. Ogita, Sumitomo Electric Industries, Japan

243 **A Push-Push Oscillator Array with Very Simple Coupling Circuits Using HEMT**
Takayuki Tanaka, Takeru Sameshima, Ichihiko Toyoda, Saga University, Japan

247 **An Electrically Tunable X-Band Voltage-Controlled Oscillator Using Substrate Integrated Waveguide Dual-Mode Bandpass Filter with Circular Cavity**
W.C. Huang, Peng Chen, Z.Q. Yu, Lin Tian, J.Y. Zhou, Southeast University, China

EuMC15: RFID Techniques and Applications

Chair: Reinhard Feger, Johannes Kepler University
Co-Chair: Nuno Carvalho, University of Aveiro
Venue: Room 252A, Time 16:10 – 17:50, Tuesday 8th September 2015

251 **An Advanced Tag Detection Technique for Chipless RFID Systems**
Chamath Divarathne, Nemai Karmakar, Monash University, Australia

255 **A Multilayer Compact-Size UWB-UHF Antenna System for Novel RFID Applications**
Marco Fantuzzi, Diego Masotti, Alessandra Costanzo, Università di Bologna, Italy

259 **3D Microwave Imaging System for the Remote Detection and Reading of Passive Sensors**
D. Henry, P. Pons, H. Aubert, LAAS, France

263 **A Passive Temperature Sensor Based on a Printed Magnetoinductive-Wave (MIW) Delay Line**
F.J. Herraiz-Martínez, J. Martínez-Cebrián, Daniel Segovia-Vargas, Universidad Carlos III de Madrid, Spain

267 **Microwave Characterization of Materials During Corrosion: Application to Wireless Sensors**
Maria Yasri[1], Benoit Lescop[2], François Gallée[3], Erwan Diler[1], Dominique Thierry[1], Stéphane Rioual[2]
[1]Institut de la Corrosion, France; [2]LMB (EA 4522), France; [3]Lab-STICC, France

EuMC16: Couplers

Chair: Vesna Crnojevic-Bengin, University of Novi Sad
Co-Chair: Luca Perregrini, Università di Pavia
Venue: Room 252B, Time 16:10 – 17:50, Tuesday 8th September 2015

271 **A Novel Wideband Microstrip Branch-Line Coupler with Compact Footprint**
Piotr Kurgan, Slawomir Koziel, Reykjavik University, Iceland

275 **Compact Wideband 3dB Branch Line Coupler with Multiple Symmetric PI Section**
Rusan Kumar Barik, V. Phani Kumar K., S.S. Karthikeyan, IIITDM Kancheepuram, India

279 **Design and Characterization of Novel W-Band Wide-Band Couplers and Six-Port Circuit**
Emilia Moldovan, Serioja Ovidiu Tatu, INRS-EMT, Canada

283 **A Novel Trans-Directional Coupler Based on Vertically Installed Planar Circuit**
Aleksandr N. Sychev, Sergey M. Struchkov, Vladimir N. Putilov, Nickolay Yu. Rudyi, TUSUR, Russia

287 **A 300kHz–13.5GHz Directional Bridge**
Nikolay Drobotun [1], Philipp Mikheev [2]
[1] Micran, Russia; [2] TUSUR, Russia

EuMC17: Near Field Wireless Power Transfer

Chair: Luciano Tarricone, Università del Salento
Co-Chair: Diego Masotti, Università di Bologna
Venue: Room 253, Time 16:10 – 17:50, Tuesday 8th September 2015

291 **Design of a High Efficiency Rectifier with Wide Bandwidth and Input Power Range Based on the Time Reversal Duality of Power Amplifier**
Defu Wang, Xuan Anh Nghiem, Muh-Dey Wei, Renato Negra, RWTH Aachen University, Germany

295 **High-Efficiency DC-to-RF/RF-to-DC Interconversion Switching Module at C-Band**
Ryo Ishikawa, Kazuhiko Honjo, University of Electro-Communications, Japan

299 **High Efficiency and High Power GaN HEMT Inverse Class-F Synchronous Rectifier for Wireless Power Applications**
Sadegh Abbasian, Thomas Johnson, University of British Columbia, Canada

303 **Matching Network Improvement for RF Energy Harvesters in Body Sensor Area Network Context**
Véronique Kuhn, Fabrice Seguin, Cyril Lahuec, Christian Person, Lab-STICC, France

307 **A Dual Band 915MHz/2.44GHz RF Energy Harvester**
Romain Bergès, Ludivine Fadel, Laurent Oyhenart, Valérie Vigneras, Thierry Taris, IMS (UMR 5218), France

EuMC18: Reflectometers and Millimeter-Wave Characterization

Chair: Christophe Gaquiere, IEMN
Co-Chair: Phillipe Ferrari, IMEP
Venue: Room 202 + 203, Time 16:10 – 17:50, Tuesday 8th September 2015

311 **Characterization of Quasi-Optical Focusing Systems at W-Band Frequencies**
Mathias Klenner, Christian Zech, Axel Hülsmann, Michael Schlechtweg, Oliver Ambacher, Fraunhofer IAF, Germany

315 **Robotically Controlled Directivity and Gain Measurements of Integrated Antennas at 280GHz**
Linus Boehm, Sebastian Pledl, Frank Boegelsack, Martin Hitzler, Christian Waldschmidt, Universität Ulm, Germany

319 **WR-5.1 Band, On-Wafer Characterization at Cryogenic Temperatures**
David R. Daughton [1], Doug McLean [1], Scott Yano [1], Matthew Bauwens [2], Arthur Lichtenberger [2], N. Scott Barker [2], Robert M. Weikle [2], Alessandro Macor [3], Emile de Rijk [3], Arndt von Bieren [3], Mirko Favre [3], Jeffrey L. Hesler [4], Cliff Rowland [4], Eric Bryerton [4]
[1] Lake Shore Cryotronics, USA; [2] DMPI, USA; [3] SWISSto12, Switzerland; [4] Virginia Diodes, USA

323 **A Broadband 3–29GHz Reflectometer with a Frequency Compensated Multilayer Sixport Structure**
F. Trenz [1], Maximilian Hofmann [1], Robert Weigel [1], Dietmar Kissinger [2]
[1] FAU Erlangen-Nürnberg, Germany; [2] IHP, Germany

327 **Reflectometer Calibration with a Pair of Partially Known Standards**
Alexander Arsenovic [1], Robert M. Weikle II [2], Jeffrey L. Hesler [1]
[1] Virginia Diodes, USA; [2] University of Virginia, USA

EuMC19: Modeling of Electromagnetic Periodic Structures and Metamaterials

Chair: Francisco Medina, Universidad de Sevilla
Co-Chair: Alessandro Galli, Università di Roma "La Sapienza"
Venue: Room 241, Time 08:30 – 10:10, Wednesday 9th September 2015

331 **Wideband Equivalent Circuit for Non-Aligned 1-D Periodic Metal Strips Coupled Gratings**
Carlos Molero, Raúl Rodríguez-Berral, Francisco Mesa, Francisco Medina, Universidad de Sevilla, Spain

335 **Triple-Band Polarization-Independent Metamaterial Absorber Using Destructive Interference**
Saptarshi Ghosh, Somak Bhattacharyya, Yadunath Kaiprath, Devkinandan Chaurasiya, Kumar Vaibhav Srivastava, IIT Kanpur, India

339 **Wave Scattering by *PT*-Symmetric Epsilon-Near-Zero Periodic Structures**
O.V. Shramkova, G.P. Tsironis, University of Crete, Greece

343 **Short Wire Ultra-Wideband Filter and Polarizer**
Zahra Mostajabi, Jalil Rashed-Mohassel, University of Tehran, Iran

347 **Wire-Medium Loaded Planar Structures: A Novel Transmission-Line Model and Relevant Dispersion Properties**
Davide Comite, Paolo Burghignoli, Paolo Baccarelli, Alessandro Galli, Università di Roma "La Sapienza", Italy

EuMC20: Transmission Lines and Transitions

Chair: Ian Robertson, University of Leeds
Co-Chair: Marco Pasian, Università di Pavia
Venue: Room 242A, Time 08:30 – 10:10, Wednesday 9th September 2015

351 **Modeling of Multiple Coated Coaxial Air-Lines Considering Finite Conductivity and Surface Roughness**
Sherko Zinal, PTB, Germany

355 **Dielectric-Tube-Supported Metal Rod Transmission Line and its Application to Transition for 1mm Coaxial Connector at 80GHz Band**
Satoshi Kitabayashi [1], Futoshi Kuroki [1], Yuki Kawahara [2]
[1]KNCT, Japan; [2]Kawashima Manufacturing, Japan

359 **Versatile Phasers Constituted of Coupling-Free Nonuniform Stub-Loaded Transmission Lines**
Sajjad Taravati, Christophe Caloz, École Polytechnique de Montréal, Canada

363 **A Wideband Vertical Microstrip-to-Microstrip Transition on Two Dual-Mode Slotline Resonators**
Xin Guo [1], Wen Wu [1], Lei Zhu [2]
[1]NUST, China; [2]University of Macau, China

367 **Dual-Band Stepped-Impedance Transformer to Full-Height Substrate-Integrated Waveguide**
Thomas Jaschke, Benjamin Rohrdantz, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany

EuMC21: Microwaves in Biological and Medical Applications

Chair: Juan-Mari Collantes, University of the Basque Country
Co-Chair: Shokrollah Karimian, CERN
Venue: Room 242B, Time 08:30 – 10:10, Wednesday 9th September 2015

371 **A Novel Chipless RFID-Based Stretchable and Wearable Hand Gesture Sensor**
Taoran Le, Ryan Bahr, Manos M. Tentzeris, Bo Song, Ching-ping Wong, Georgia Institute of Technology, USA

375 **Detection Tube for Small HF RFID Tags, Based on Mutual Coupling with a Coil Resonator**
Antoine Diet [1], Christophe Conessa [1], Yann Le Bihan [1], Francisco Alves [1], Marjorie Grzeskowiak [2], Megdouda Benamara [2], Gaelle Lissorgues [2]
[1]GeePs, France; [2]ESYCOM, France

379 **Dielectric Characterization of Biocompatible Hydrogels for Application to Epidermal RFID Devices**
S. Amendola [1], C. Occhiuzzi [2], A. Ajovalasit [3], M.A. Sabatino [3], C. Dispenza [3], G. Marrocco [1]
[1]Università di Roma "Tor Vergata", Italy; [2]Radio6ense, Italy; [3]Università di Palermo, Italy

383 **High Doses Wireless Radiation Sensor Using Electromagnetic Transducers**
E. Debourg [1], A. Rifai [1], H. Aubert [1], P. Pons [1], I. Augustyniak [2], P. Knapkiewicz [2], J. Dziuban [2], M. Matusiak [3], M. Olszacki [3]
[1]LAAS, France; [2]WRUT, Poland; [3]NCBJ, Poland

387 **Propagation of Electromagnetic Waves Radiated by an Implanted Antenna**
Pavel Turalchuk [1], Orest Vendik [1], Irina B. Vendik [1], Michail Derkach [2]
[1]St. Petersburg Electrotechnical University, Russia; [2]Radar MMS, Russia

EuMC22 : Millimeter-Wave Circuits

Chair: Asher Madjar, M2Microwaves LLC
Co-Chair: Wolfgang Heinrich, Ferdinand-Braun-Institut (FBH)
Venue: Room 251, Time 08:30 – 10:10, Wednesday 9th September 2015

391 **A 250GHz Hetero-Integrated VCO with 0.7mW Output Power in InP-on-BiCMOS Technology**
M. Hossain [1], N. Weimann [1], B. Janke [1], M. Lisker [2], C. Meliani [2], B. Tillack [2], O. Krüger [1], Viktor Krozer [1], Wolfgang Heinrich [1]
[1]FBH, Germany; [2]IHP, Germany

395 **Low Noise 89GHz Detector Module for MetOp-SG**
Matthias Hoefle [1], Oleg Cojocari [1], Mykola Sobornytskyy [1], Andrzej Jankowski [1], Ion Oprea [1], Andreas Penirschke [2], Rolf Jakoby [2], Thibaut Decoopman [3], Marie-Genevieve Perichaud [4], Petri Piironen [4]
[1]ACST, Germany; [2]Technische Universität Darmstadt, Germany; [3]Airbus Defence & Space, France; [4]ESA, The Netherlands

399 **A 3.7mW 75–87-GHz Injection-Locked Frequency Tripler Using Bandwidth-Enhanced Transformer-Coupled Topology for Automatic Radar Applications**
Hsiang-Ting Huang [1], Ming-Hang Wu [1], Yi-Hsien Lin [1], Tian-Wei Huang [1], Jeng-Han Tsai [2]
[1]National Taiwan University, Taiwan; [2]National Taiwan Normal University, Taiwan

403 **High-Efficiency Low-Phase-Noise 79-GHz Gunn Oscillator Module**
Akihiro Nakamura, Jun-ichiro Nikaido, Yoshio Aoki, Yasushi Shirakata, Shintaro Takase, Yokowo, Japan

407 **Reflection and Band-Stop Types of Self-Injection Locked NRD Guide Gunn Oscillators Loading TEM Resonance Type Metal Rod Resonator Supported by PEEK Material at 60GHz**
Makoto Teramoto, Futoshi Kuroki, KNCT, Japan

EuMC23 : Advanced Technologies for Planar, Tunable and Acoustic-Wave Filters

Chair: Vicente Boria, Universidad Politécnica de Valencia
Co-Chair: Cedric Quendo, University of Brest
Venue: Room 252A, Time 08:30 – 10:10, Wednesday 9th September 2015

411 **Applied Methodology for Harmonic Suppression of Microstrip Edge Coupled Bandpass Filters Using Composite Circuit Materials**
John Coonrod, Rogers Corporation, USA

415 **Design of Tunable Dual-Band Filter with Multiple Types of Resonators**
Yen-Hong Cheng, Han-Sam Peng, Yi-Chyun Chiang, Chang Gung University, Taiwan

419 **A 2-Pole Tunable Bandpass Filter Using Commercial Digitally Tunable Capacitor**
G. Chaabane, M. Chatras, Cyril Guines, V. Madrangeas, Pierre Blondy, XLIM, France

422 **Acoustic-Wave-Lumped-Element Resonator (AWLR) Architectures for High-Q Reflective Bandstop Filters**
Dimitra Psychogiou [1], Roberto Gómez-García [2], Dimitrios Peroulis [1]
[1]Purdue University, USA; [2]Universidad de Alcalá, Spain

426 **Bandwidth Enlargement in Acoustic-Wave RF Bandpass Filters with Planar Transversal Circuits**
Roberto Gómez-García [1], Dimitra Psychogiou [2], Raúl Loeches-Sánchez [1], Dimitrios Peroulis [2]
[1]Universidad de Alcalá, Spain; [2]Purdue University, USA

EuMC24: Millimeter-Wave Imaging

Chair: Lorenz-Peter Schmidt, FAU Erlangen-Nürnberg
Co-Chair: Timo Jaeschke, Ruhr-Universität Bochum
Venue: Room 252B, Time 08:30 – 10:10, Wednesday 9th September 2015

430 **Wideband 120GHz to 140GHz MIMO Radar: System Design and Imaging Results**
Thomas Spreng [1], Shuai Yuan [2], Václav Valenta [2], Hermann Schumacher [2], Uwe Siart [3], Volker Ziegler [1]
[1] Airbus Group Innovations, Germany; [2] Universität Ulm, Germany; [3] Technische Universität München, Germany

434 **MIMO System for Fast Imaging at 90GHz**
R. Herschel, S. Nowok, P. Warok, R. Zimmermann, S.A. Lang, Nils Pohl, Fraunhofer FHR, Germany

438 **A Sparse Array Based Sub-Terahertz Imaging System for Volume Inspection**
B. Baccouche [1], A. Keil [2], M. Kahl [3], P. Haring Bolívar [3], T. Loeffler [4], J. Jonuscheit [1], F. Friederich [1]
[1] Fraunhofer IPM, Germany; [2] Becker Photonik, Germany; [3] Universität Siegen, Germany; [4] Synview, Germany

442 **A Fast Rotating Scanning Approach for Millimeter Wave Imaging**
Dirk Nüßler, Ralf Brauns, Sven Heinen, Stefan Kose, Nils Pohl, Fraunhofer FHR, Germany

446 **Characterizing Surface Profiles Utilizing mm-Wave FMCW SAR Imaging**
Jan Barowski [1], Dennis Pohle [1], Timo Jaeschke [1], Nils Pohl [2], Ilona Rolfes [1]
[1] Ruhr-Universität Bochum, Germany; [2] Fraunhofer FHR, Germany

EuMC25: Microwave Applications of Metamaterials

Chair: Tasuo Itoh, UCLA
Co-Chair: Amr Safwat, Ain Shams University
Venue: Room 241, Time 10:50 – 12:30, Wednesday 9th September 2015

450 **Demonstration of Circularly-Polarized Leaky-Wave Antenna Based on Pseudo-Traveling Wave Resonance**
Keisuke Ninomiya [1], Tetsuya Ueda [1], Andrey Porokhnyuk [1], Tatsuo Itoh [2]
[1] Kyoto Institute of Technology, Japan; [2] University of California at Los Angeles, USA

454 **Epsilon Near Zero Loaded Magnetrons, Design and Realization**
Nasrin Nasr Esfahani [1], Klaus Schünemann [1], Nickolay Avtomonov [2], Dmytro M. Vavriv [2]
[1] Technische Universität Hamburg-Harburg, Germany; [2] NASU, Ukraine

458 **Beam-Tilted and Wide Beam Antennas Using Hybrid Electromagnetic Band Gap Structures**
K. Kandasamy [1], B. Majumder [1], Jayanta Mukherjee [1], K.P. Ray [2]
[1] IIT Bombay, India; [2] SAMEER, India

462 **Active Diplexer Based on Isolation Circuits Imbedded Low Noise Amplifiers**
Hanseung Lee [1], Jun H. Choi [2], Tatsuo Itoh [1]
[1] University of California at Los Angeles, USA; [2] Syracuse University, USA

466 **Metapaper: A Frequency Selective Surface Wallpaper for the Attenuation of Wi-Fi Signals**
Alejandro Niembro-Martin [1], Fabien De Barros [1], Guy Eymin-Petot-Tourtollet [1], Pierre Lemaître-Auger [2], Emmanuel Pistono [3], Tan-Phu Vuong [3]
[1] CTP, France; [2] LCIS, France; [3] IMEP-LAHC, France

EuMC26: Passive Power Dividers 2

Chair: Jan Machac, Czech Technical University in Prague
Co-Chair: Luca Perregrini, Università di Pavia
Venue: Room 242A, Time 10:50 – 12:30, Wednesday 9th September 2015

N/A **A Novel Gysel Power Divider Based on Substrate-Integrated-Waveguide (SIW) Technology**
Haidong Chen, Wenquan Che, Chao Gu, Wenjie Feng, NUST, China

474 **Air-Bridge Free Coplanar Waveguide Power Divider**
AbdelHamid M.H. Nasr, Amr M.E. Safwat, Ain Shams University, Egypt

478 **E-Plane 3-dB Power Divider/Combiner in Substrate Integrated Waveguide Technology**
M. Pasian [1], Lorenzo Silvestri [1], Maurizio Bozzi [1], Luca Perregrini [1], K.K. Samanta [2]
[1] Università di Pavia, Italy; [2] Milmega, UK

482 **A Multilayer Substrate Integrated 3dB Power Divider with Embedded Thick Film Resistor**
Christian Rave, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany

486 **Four-Way Waveguide Power Dividers with Integrated Filtering Function**
Ali Musa Mohammed, Yi Wang, University of Greenwich, UK

EuMC27: Microwave Systems

Chair: Andreas Stelzer, Johannes Kepler University
Co-Chair: Steve Nightingale, Cobham
Venue: Room 242B, Time 10:50 – 12:30, Wednesday 9th September 2015

490 **Exploitation of Capacitive Coupling at UHF for Remote Sensing in a kW WPT System**
Riccardo Trevisan, Alessandra Costanzo, Università di Bologna, Italy

494 **FPGA Implementation of Delta Sigma Modulation Based All-Digital RF Transmitter for Parallel Magnetic Resonance Imaging**
Filiz Ece Sagcan, Aylin Bayram, Bulent Sen, ASELSAN, Turkey

N/A **Mini Electromagnetic Pulse Generator Based on Switched Quarter-Wavelength Oscillator**
Dongdong Jiang, Bo Zhang, Yan Wang, CETC 29, China

502 **Bi-Partition Based Analog Beamforming for Millimeter Wave Backhaul Systems**
Rui Lv [1], Tao Li [2], Hao Long [1], Xiaodong Li [1], Lei Wang [3], Weiqiang Cheng [3]
[1] Huawei Technologies, China; [2] Sichuan University, China; [3] China Mobile, China

506 **A Widely Nonlinear Approach to Compensate Impairments in I/Q Modulators**
C. Crespo-Cadenas, M.J. Madero-Ayora, J. Reina-Tosina, J.A. Becerra-González, Universidad de Sevilla, Spain

EuMC28: Front-End Subsystems

Chair: Christophe Gaquiere, University of Lille
Co-Chair: Yves Mancuso, Thales Airborne Systems
Venue: Room 251, Time 10:50 – 12:30, Wednesday 9th September 2015

510 **Millimetre Wave Transmitter Based on a Few-Layer Graphene Frequency Multiplier**
Carlos Vázquez, Andreea Hadarig, Samuel Ver Hoeye, René Camblor, Miguel Fernández, George Hotopan, Leticia Alonso, Fernando Las-Heras, Universidad de Oviedo, Spain

514 **GaN Based Wideband T/R Module for Multi-Function Applications**
Ralf Rieger, Andreas Klaaßen, Patrick Schuh, Martin Oppermann, Airbus Defence & Space, Germany

518 **Compact Transponder Front-End with Enhanced Gain for Electronic Toll Collection at 5.8GHz**
Stefano Maddio, Alessandro Cidronali, Marco Passafiume, Giovanni Collodi, Gianfranco Manes, Università di Firenze, Italy

522 **Design and Realisation of a pHEMT Diode MMIC Power Limiter Using 3D GaAs Multilayer CPW Technology**
Peter B.K. Kyabaggu, Norshakila Haris, Ali A. Rezazadeh, Emerson Sinulingga, Mohammad A. Alim, Yongjian Zhang, University of Manchester, UK

526 **Parametric Characterization of Six-Port Interferometer Demodulator Through Mixer Modeling**
Jaber Moghaddasi, Kuangda Wang, Ke Wu, École Polytechnique de Montréal, Canada

EuMC29: Design Techniques for Planar Microwave Filters

Chair: Ian Hunter, Leeds University
Co-Chair: Roberto Sorrentino, Università di Perugia
Venue: Room 252A, Time 10:50 – 12:30, Wednesday 9th September 2015

530 **Application of Aggressive Space Mapping (ASM) to the Automated Design of Differential-Mode Wideband Bandpass Filters with Common-Mode Suppression**
Marc Sans [1], Jordi Selga [1], Paris Vélez [1], Ana Rodríguez [2], Jordi Bonache [1], Vicente E. Boria [2], Ferran Martín [1]
[1] Universitat Autònoma de Barcelona, Spain; [2] Universidad Politécnica de Valencia, Spain

534 **Response Correction of a V-Band Narrow-Band Filter Using Tuning Metal Insertions and Aggressive Space Mapping**
Antonio Berenguer, Mariano Baquero-Escudero, Daniel Sanchez-Escuderos, Bernardo Bernardo-Clemente, Vicente E. Boria-Esbert, Universidad Politécnica de Valencia, Spain

538 **Parametric Modeling of the Coupling Parameters of Planar Coupled-Resonator Microwave Filters**
Matthias Caenepeel [1], Fabien Seyfert [2], Yves Rolain [1], Martine Olivi [2]
[1] Vrije Universiteit Brussel, Belgium; [2] INRIA, France

542 **Miniaturized Signal-Interference Planar Filters**
Raúl Loeches-Sánchez [1], Dimitra Psychogiou [2], Roberto Gómez-García [1], Dimitrios Peroulis [2]
[1] Universidad de Alcalá, Spain; [2] Purdue University, USA

546 **Reduced-Length Uniplanar Bandpass Filters Based on Coplanar-Waveguide-Slotline Tees**
Adrián Contreras [1], Lluís Pradell [1], Miquel Ribó [2], Pierre Blondy [3]
[1] Universitat Politècnica de Catalunya, Spain; [2] Universitat Ramon Llull, Spain; [3] XLIM, France

EuMC30: Millimeter-Wave Systems

Chair: Nils Pohl, Fraunhofer FHR
Co-Chair: Dietmar Kissinger, IHP Microelectronics
Venue: Room 252B, Time 10:50 – 12:30, Wednesday 9th September 2015

550 **A Lens-Coupled 210–270GHz Circularly Polarized FMCW Radar Transceiver Module in SiGe Technology**
Konstantin Statnikov [1], J. Grzyb [1], Neelanjan Sarmah [1], Bernd Heinemann [2], Ullrich R. Pfeiffer [1]
[1] Bergische Universität Wuppertal, Germany; [2] IHP, Germany

554 **A Compact W-Band LFMCW Radar Module with High Accuracy and Integrated Signal Processing**
Christian Zech [1], Axel Hülsmann [1], Michael Schlechtweg [1], Steffen Reinold [2], Christof Giers [2], Bernhard Kleiner [2], Leopold Georgi [3], Ruben Kahle [3], Karl-Friedrich Becker [3], Oliver Ambacher [1]
[1] Fraunhofer IAF, Germany; [2] Fraunhofer IPA, Germany; [3] Fraunhofer IZM, Germany

558 **300-GHz FM-CW Radar System by Optical Frequency Comb Generation**
Atsushi Kanno, Norihiko Sekine, Yoshinori Uzawa, Iwao Hosako, Tetsuya Kawanishi, NICT, Japan

562 **A 20Gbit/s, 280GHz Wireless Transmission in InP-HEMT Based Receiver Module Using Flip-Chip Assembly**
Yoichi Kawano, Hiroshi Matsumura, Shoichi Shiba, Masaru Sato, Toshihide Suzuki, Yasuhiro Nakasha, Tsuyoshi Takahashi, Kozo Makiyama, Taisuke Iwai, Naoki Hara, Fujitsu, Japan

566 **Surface Velocity Estimation of Fluids Using Millimetre-Wave Radar**
Christian Erhart [1], Steffen Lutz [1], Johannes Köhler [1], Hubert Mantz [1], Thomas Walter [1], Robert Weigel [2]
[1] Hochschule Ulm, Germany; [2] FAU Erlangen-Nürnberg, Germany

EuMC31: Integrated Antennas

Chair: Wolfgang Menzel, Universität Ulm
Co-Chair: Alaa Abunjaileh, Airbus Defence and Space
Venue: Room 253, Time 10:50 – 12:30, Wednesday 9th September 2015

570 **A Broadband 240GHz Lens-Integrated Polarization-Diversity On-Chip Circular Slot Antenna for a Power Source Module in SiGe Technology**
J. Grzyb, Konstantin Statnikov, Neelanjan Sarmah, Ullrich R. Pfeiffer, Bergische Universität Wuppertal, Germany

574 **Omnidirectional Bond-Wire Array Antenna for 60GHz Wireless Communication**
R. van Kemenade [1], C. Jarufe [2], R. Finger [2], A.B. Smolders [1], L. Bronfman [2]
[1] Technische Universiteit Eindhoven, The Netherlands; [2] Universidad de Chile, Chile

578 **Broadband High Gain SIW Ring Slot Antenna**
Zhi Shen [1], Kirti Dhwaj [1], Hanseung Lee [1], Tatsuo Itoh [1], Li Jun Jiang [2]
[1] University of California at Los Angeles, USA; [2] University of Hong Kong, China

582 **SIW Slot Antenna for E-Band Communications**
Dmitry Zelenchuk [1], Vincent Fusco [1], James Breslin [2], Mike Keaveney [2]
[1] Queen's University Belfast, UK; [2] Analog Devices, Ireland

586 **Digital Interference in Monolithic Integrated Antennas**
Hristomir Yordanov [1], Georgi Savov [1], Vladimir Poulkov [1], Bojidar Avdjiiski [2]
[1] Technical University Sofia, Bulgaria; [2] RaySat, Bulgaria

EuMC32 : Linear and Nonlinear Modelling Techniques

Chair: Anthony Ghiotto, University of Bordeaux
Co-Chair: Alessandro Galli, Universit'a di Roma "La Sapienza"
Venue: Room 241, Time 13:50 – 15:30, Wednesday 9th September 2015

590 **A Hybrid FEBI-MoM-PO Formulation for the Analysis of Radiation and Scattering Problems**
Kezhong Zhao, L.E. Rickard Petersson, ANSYS, USA

594 **Fast Near-Field Antenna Measurement Technique**
Po-Jui Chiu, Dong-Chen Tsai, Zuo-Min Tsai, National Chung Cheng University, Taiwan

598 **Comparison of Hybrid and Fully Implicit Time Domain Finite Element Solvers for Transient Electromagnetic Simulation**
Hsueh-Yung Chao, Brian Anderson, Stylianos Dosopoulos, L.E. Rickard Petersson, Din-Kow Sun, ANSYS, USA

602 **Simulation of PIM Generated on the Mesh Reflector**
He Bai, Wanzhao Cui, CAST, China

606 **Lowering the Threshold for Bistability**
Anastasiia Y. Nimets, Dmytro M. Vavriv, NASU, Ukraine

EuMC33 : Integrated Antenna Technologies

Chair: Jozef Modelski, Warsaw University of Technology
Co-Chair: Manos Tentzeris, Georgia Institute of Technology
Venue: Room 242A, Time 13:50 – 15:30, Wednesday 9th September 2015

610 **A Fully Printed Multilayer Aperture-Coupled Patch Antenna Using Hybrid 3D/Inkjet Additive Manufacturing Technique**
Kunal A. Nate, Jimmy G.D. Hester, Michael Isakov, Ryan Bahr, Manos M. Tentzeris, Georgia Institute of Technology, USA

614 **X Band Tunable Slot Antenna with Graphene Patch**
A.-C. Bunea [1], D. Neculoiu [1], M. Dragoman [1], G. Konstantinidis [2], G. Deligeorgis [2]
[1] IMT Bucharest, Romania; [2] FORTH, Greece

618 **A V-Band End-Fire Yagi-Uda Antenna on an Ultra-Thin Glass Packaging Technology**
W.T. Khan [1], S. Sitaraman [2], A.L. Vera [2], M.R. Pulugurtha [2], V. Sundaram [2], R.R. Tummala [2], John Papapolymerou [2]
[1] LUMS, Pakistan; [2] Georgia Institute of Technology, USA

622 **Frequency Agile Antenna at 10GHz with High Optical Transparency**
A. Martin, Mohammed Himdi, Olivier Lafond, X. Castel, IETR, France

626 **A 3-Bit RF-MEMS Aperture Tunable PIFA Antenna**
G. Chaabane, M. Chatras, Cyril Guines, V. Madrangeas, Cyril Decroze, L. Huitema, Pierre Blondy, XLIM, France

EuMC34: Non-Linear Measurements and Models

Chair: Patrice Gamand, NXP
Co-Chair: Fabio Filicori, Università di Bologna
Venue: Room 242B, Time 13:50 – 15:30, Wednesday 9th September 2015

630 **Nonlinearity Measurement and Analysis of 0.25μm GaN HEMT Over Frequency and Temperature Using Two-Tone Intermodulation Distortion**
Mohammad A. Alim [1], Ali A. Rezazadeh [1], Christophe Gaquière [2], Mayahsa M. Ali [1], Yongjian Zhang [1], Norshakila Haris [1], Peter B.K. Kyabaggu [1]
[1] University of Manchester, UK; [2] IEMN, France

634 **Improving Upon Pulse-to-Pulse Stability in GaN RADAR Amplifiers Compromised by the Presence of GaN Trapping Effects**
Damian McCann, Changru Zhu, M/A-COM Technology Solutions, USA

638 **Adaptive Sampling Method for Experiments with Fixed-Grid Variables in Measurements of Nonlinear Active Devices**
Paweł Barmuta [1], Francesco Ferranti [2], Arkadiusz Lewandowski [3], Dominique Schreurs [1]
[1] Katholieke Universiteit Leuven, Belgium; [2] Vrije Universiteit Brussel, Belgium; [3] Warsaw University of Technology, Poland

642 **Early Demonstration of a High VSWR Microwave Coaxial Programmable Impedance Tuner with Coaxial Slugs**
Arnaud Curutchet, Anthony Ghiotto, Manuel Potéreau, Magali De Matos, Sébastien Fregonese, Eric Kerhervé, Thomas Zimmer, IMS (UMR 5218), France

646 **DIDO Behavioral Model Extraction Setup Using Uncorrelated Envelope Signals**
Hossein Zargar [1], Ali Banai [1], José C. Pedro [2]
[1] Sharif University of Technology, Iran; [2] Universidade de Aveiro, Portugal

EuMC35: Focus Session on Advances in Scanning Probe Microwave and mm-Wave Microscopy

Chair: Marco Farina, Università Politecnica delle Marche
Co-Chair: Alexander Tselev, Oak Ridge National Laboratory
Venue: Room 251, Time 13:50 – 15:30, Wednesday 9th September 2015

650 **Nanoscale Scanning Microwave Impedance Microscopy on Advanced Functional Materials**
Yuan Ren, Di Wu, Yingnan Liu, Xiaoyu Wu, Keji Lai, University of Texas at Austin, USA

654 **Transmission and Reflection Mode Scanning Microwave Microscopy (SMM): Experiments, Calibration, and Simulations**
Pablo F. Medina [1], Andrea Lucibello [2], Georg Gramse [3], Enrico Brinciotti [1], Manuel Kasper [3], A.O. Oladipo [4], Reinhard Feger [3], Andreas Stelzer [3], Hassan Tanbakuchi [5], Roger Stancliff [5], Emanuela Proietti [2], Romolo Marcelli [2], Ferry Kienberger [1]
[1] Keysight Technologies, Austria; [2] CNR-IMM, Italy; [3] Johannes Kepler Universität Linz, Austria; [4] Bio-Nano Consulting, UK; [5] Keysight Technologies, USA

658 **Sub-10 nm-Scale Capacitors and Tunnel Junctions Measurements by SMM Coupled to RF Interferometry**
F. Wang [1], T. Dargent [1], D. Ducatteau [1], G. Dambrine [1], Kamel Haddadi [1], N. Clément [1], D. Theron [1], B. Legrand [2]
[1] IEMN, France; [2] LAAS, France

662 **Probing Nanoscale Objects in Liquids Through Membranes with Near-Field Microwave Microscopy**
Alexander Tselev [1], Andrei Kolmakov [2]
[1] ORNL, USA; [2] NIST, USA

666 **Imaging of Biological Structures by Near-Field Microwave Microscopy**
Marco Farina [1], Andrea Di Donato [1], Davide Mencarelli [1], Giuseppe Venanzoni [1], A. Morini [1], Tiziana Pietrangelo [2]
[1] Università Politecnica delle Marche, Italy; [2] Università G. d'Annunzio, Italy

EuMC36: Waveguide Filter Structures

Chair: Richard V. Snyder, RS Microwave
Co-Chair: Stephane Bila, University of Limoges
Venue: Room 252A, Time 13:50 – 15:30, Wednesday 9th September 2015

670 **K-Band MEMS-Based Frequency Adjustable Waveguide Filter for Mobile Back-Hauling**
Luca Pelliccia [1], Paola Farinelli [1], Roberto Sorrentino [2], Giandomenico Cannone [3], Giulio Favre [3], Piero Coassini [3]
[1]RF Microtech, Italy; [2]Università di Perugia, Italy; [3]SIAE Microelettronica, Italy

674 **Integrated Ceramic Waveguide Filters with Improved Spurious Performance**
Ian Hunter, Sharjeel Afridi, Muhammad Sandhu, University of Leeds, UK

678 **Enhancing the Spurious Free Range in Inductive Rectangular Waveguide Filters**
J.M. Perez Escudero [1], D. Martinez Martinez [1], A. Pons Abenza [1], J.A. Lorente Acosta [1], Alejandro Alvarez-Melcon [1], Marco Guglielmi [2]
[1]Universidad Politécnica de Cartagena, Spain; [2]Universidad Politécnica de Valencia, Spain

682 **Experimental and Numerical Study of Microwave Breakdown in a Two-Channel Output Multiplexer**
K. Frigui [1], Stéphane Bila [1], Dominique Baillargeat [1], A. Catherinot [2], S. Verdeyme [1], J. Puech [3], L. Estagerie [3], D. Pacaud [4], H. Dillenbourg [4]
[1]XLIM, France; [2]SPCTS, France; [3]CNES, France; [4]Thales Alenia Space, France

686 **Design of "Masthead" Combiners**
Giuseppe Macchiarella [1], Stefano Tamiazzo [2]
[1]Politecnico di Milano, Italy; [2]Commscope Italy, Italy

EuMC37: Temperature Sensing and Modelling

Chair: Bart Nauwelaers, Katholieke Universiteit Leuven
Co-Chair: Andrew Gibson, University of Manchester
Venue: Room 252B, Time 13:50 – 15:30, Wednesday 9th September 2015

690 **A Novel Compact Microwave Radiometric Sensor to Noninvasively Track Deep Tissue Thermal Profiles**
Paolo F. Maccarini [1], Ankur Shah [1], Sharmila Y. Palani [1], Donald V. Pearce [1], Madhurima Vardhan [1], Tiago R. Oliveira [2], Paul R. Stauffer [3], Dario B. Rodrigues [3], Doug Reudink [4], Sara Salahi [5], Brent W. Snow [6]
[1]Duke University, USA; [2]Universidade de São Paulo, Brazil; [3]Thomas Jefferson University, USA; [4]ThermImage, USA; [5]ANSYS, USA; [6]University of Utah, USA

694 **A 1.4-GHz Radiometer for Internal Body Temperature Measurements**
Parisa Momenroodaki [1], Zoya Popović [1], Robert Scheeler [2]
[1]University of Colorado at Boulder, USA; [2]First RF Corporation, USA

698 **Thermal Model of Skin-Equivalent Phantoms at 60GHz**
Carole Leduc, Maxim Zhadobov, Ronan Sauleau, IETR, France

702 **Electromagnetic Techniques to Minimize the Risk of Hazardous Local Heating Around Medical Implant Electrodes During MRI Scanning**
Steven McCabe [1], Jonathan Scott [1], Stephen Butler [2]
[1]University of Waikato, New Zealand; [2]Midland MRI, New Zealand

706 **Wearable, Wireless Sensor Platform for Occupational Radiation Dosimetry Applications**
Sean Scott [1], Nithin Raghunathan [1], Charilaos Mousoulis [1], Dimitrios Peroulis [1], Daniel J. Valentino [2], Harikrishna Rajabather [2], James Thistlethwaite [2], Timothy McNamee [2], Paul Alexander Walerow [2], Mark R. Salasky [2]
[1]Purdue University, USA; [2]Landauer, USA

EuMC39: Digital Beamforming and MIMO Antennas

Chair: Alex Yarovoy, Delft University of Technology
Co-Chair: Marco Pasian, Università di Pavia
Venue: Room 242A, Time 16:10 – 17:50, Wednesday 9th September 2015

710 **Microwave Phased Array Digital Beamforming System Design Challenges for SKA**
G.A. Hampson, P.P. Roberts, M. Leach, A.J. Brown, T. Bateman, S. Neuhold, R.J. Beresford, W. Cheng, J. Tuthill, J.D. Bunton, R.G. Gough, M.A. Bowen, J. Kanapathippillai, CSIRO, Australia

714 **Asymmetrical Coplanar Waveguide Zeroth-Order Resonant Antenna with Extended Bandwidth**
Yu He, Feifei Tan, Changjun Liu, Sichuan University, China

718 **Dual Polarized Circular Array Antenna for PCL System and Possibility of Digital Beamforming of an Antenna Pattern**
Przemyslaw Piasecki, Michal Gasztold, PIT-RADWAR, Poland

722 **Mutual Coupling Compensation of a DBF Receiver Array**
M. Nhat Pham, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany

726 **λ/16 Spaced Single RF Chain MIMO Antenna Using Low-Power CMOS Switches**
Young-Kyun Cho, Jung-Nam Lee, Yong-Ho Lee, Gweongdo Jo, JungHoon Oh, Bong Hyuk Park, ETRI, Korea

EuMC40: Microwave Measurement Methods and Material Characterization

Chair: Nickolay Cherpak, IRE NAS of Ukraine
Co-Chair: Luca Perregrini, Università di Pavia
Venue: Room 242B, Time 16:10 – 17:50, Wednesday 9th September 2015

730 **Comparison of Methods for Measurement of Equivalent Source Match**
Johannes Hoffmann, Michael Wollensack, Juerg Ruefenacht, Markus Zeier, METAS, Switzerland

734 **Optimized Method for Achieving Accurate Signals for "True-Mode" S-Parameter Measurements**
Marcus Schramm [1], Michael Hrobak [2], Jan Schür [3], Lorenz-Peter Schmidt [3], Michael Konrad [1]
[1]Konrad Technologies, Germany; [2]FBH, Germany; [3]FAU Erlangen-Nürnberg, Germany

738 ***Q*-Factor Change of Cavity by Sample Installation in Resonance Perturbation Method**
Taro Miura [1], Ken Tahara [2], Jun-ichi Sugiyama [3], Masahiro Horibe [3]
[1]Mueller, Japan; [2]KEAD, Japan; [3]AIST, Japan

742 **RF Characterization of 3D Printed Flexible Materials — NinjaFlex Filaments**
Ryan Bahr [1], Taoran Le [1], Manos M. Tentzeris [1], Stefano Moscato [2], M. Pasian [2], Maurizio Bozzi [2], Luca Perregrini [2]
[1]Georgia Institute of Technology, USA; [2]Università di Pavia, Italy

746 **Experimental Study on the Relationship Between Specific Absorption Rate and RF Conducted Power for LTE Wireless Devices**
Benoît Derat, ART-Fi, France

EuMC41 : SIW Filters and Related Structures

Chair: Ke Wu, Polytechnique de Montreal
Co-Chair: Ferran Martin, Universitat Autonoma de Barcelona
Venue: Room 252A, Time 16:10 - 17:50, Wednesday 9th September 2015

749 **Quasi-Elliptic SIW Band-Pass Filter Based on Mushroom-Shaped Resonators**
Cristiano Tomassoni [1], Lorenzo Silvestri [2], Maurizio Bozzi [2], Luca Perregrini [2]
[1]Università di Perugia, Italy; [2]Università di Pavia, Italy

753 **Substrate Integrated Waveguide Diplexer with Dual-Mode Junction Cavity**
Zamzam Kordiboroujeni, Jens Bornemann, University of Victoria, Canada

757 **Design of a Surface Mounted Waveguide Filter in Substrate Integrated Waveguide Technology**
J. Schorer [1], Jens Bornemann [1], Uwe Rosenberg [2]
[1]University of Victoria, Canada; [2]Mician Global Engineering, Germany

761 **Low-Loss Air-Filled Substrate Integrated Waveguide (SIW) Band-Pass Filter with Inductive Posts**
Frédéric Parment [1], Anthony Ghiotto [2], Tan-Phu Vuong [1], Jean-Marc Duchamp [1], Ke Wu [3]
[1]IMEP-LAHC, France; [2]IMS (UMR 5218), France; [3]École Polytechnique de Montréal, Canada

765 **Compact Dual-Band Filter in SIW Technology for a L Band Receiver**
A. Périgaud [1], J. Sence [1], F. Fezai [1], Stéphane Bila [1], T. Monédière [1], B. Jarry [1], P. Pouliguen [2], P. Potier [2]
[1]XLIM, France; [2]DGA, France

EuMC42 : Hyperthermia Applications

Chair: Jan Vrba, Czech Technical University
Co-Chair: Dominique Schreurs, Katholieke Universiteit Leuven
Venue: Room 252B, Time 16:10 - 17:50, Wednesday 9th September 2015

769 **Development of a 27.12MHz CC-LCF Intraluminal Applicator for Hyperthermia of the Esophagus**
J. Crezee, H.J. Harms, H.J. Boluijt, J. Sijbrands, M.C.C.M. Hulshof, H.P. Kok, Academic Medical Center, The Netherlands

773 **A Mixed Frequency Approach to Optimize Locoregional RF Hyperthermia**
H.P. Kok, G. van Stam, A. Bel, J. Crezee, Academic Medical Center, The Netherlands

EuMC43 : Advanced Packaging and Interconnects

Chair: Jean-Francois Villemazet, Thales Alenia Space
Co-Chair: Wolfgang Heinrich, Ferdinand-Braun-Institut (FBH)
Venue: Room 241, Time 08:30 – 10:10, Thursday 10th September 2015

777 **Grooved Laminated Waveguide Devices for U-, V-, W- and G-Band Applications**
Camilla Kärnfelt, Pascal Coant, Maïna Sinou, Jean-Philippe Coupez, Daniel Bourreau, Alain Péden, Lab-STICC, France

781 **Wideband RF Interconnects for Organic Chip Packages: Comparison of Single Ended and Differential Transitions**
Franz Xaver Röhrl [1], Johannes Jakob [1], Werner Bogner [1], Daniel Hageneder [2]
[1] Technische Hochschule Deggendorf, Germany; [2] Rohde & Schwarz, Germany

785 **An Advanced Transmit/Receive 3D Ceramic Hybrid Circuit Module for Space Applications**
Antonio Fina [1], Ulisse Di Marcantonio [1], Andrea Suriani [1], Giovanni Mannocchi [1], Francesco de Paulis [2], Alessandro Di Carlofelice [2], Antonio Orlandi [2], Piero Tognolatti [2]
[1] Thales Alenia Space, Italy; [2] Università dell'Aquila, Italy

789 **A 5.4W X-Band Gallium Nitride (GaN) Power Amplifier in an Encapsulated Organic Package**
Spyridon Pavlidis, A. Çağrı Ulusoy, John Papapolymerou, Georgia Institute of Technology, USA

793 **Plastic Packaged E-Mode Transistors to 50GHz with Integrated ESD Protection and Bias Control**
Henrik Morkner, HTK Microwave, USA

EuMC44 : Wide-Band, Multi-Band and Multi-Mode Planar Filters

Chair: Giuseppe Macchiarella, Politecnico di Milano
Co-Chair: Roberto Gómez, Universidad Alcala de Henares
Venue: Room 242A, Time 08:30 – 10:10, Thursday 10th September 2015

N/A **Balanced Filter Using Dual-Mode Ring Resonators**
Wenjie Feng [1], Wenquan Che [1], Quan Xue [2]
[1] NUST, China; [2] City University of Hong Kong, China

801 **Dual-Wideband Bandpass Filter Using a Parallel-Coupled SIR and Open-Ended Stubs**
Chun-Ping Chen [1], Noriki Kato [1], Tetsuo Anada [1], Shigeki Takeda [2], Zhewang Ma [3]
[1] Kanagawa University, Japan; [2] Antenna Giken, Japan; [3] Saitama University, Japan

805 **Design of a Triband Lumped Element Filter for Digital Microwave Power Amplifiers**
Monica Martinez-Mendoza [1], Andreas Wentzel [1], Wolfgang Heinrich [1], Alejandro Alvarez-Melcon [2]
[1] FBH, Germany; [2] Universidad Politécnica de Cartagena, Spain

809 **Design of High-Selectivity Microstrip Bandpass Filter Using Triple-Mode Stub Loaded Resonator**
Ali Kursad Gorur, Murat Emur, Ceyhun Karpuz, Ahmet Ozek, Pamukkale University, Turkey

813 **Modified Split-Ring Resonator for Microstrip Dual-Band Notch Filter**
Juan Hinojosa, Félix L. Martínez-Viviente, Juan de Dios Ruiz, Alejandro Alvarez-Melcon, Universidad Politécnica de Cartagena, Spain

EuMC45 : Biosensors

Chair: Katia Grenier, LAAS-CNRS Toulouse
Co-Chair: R. Jacoby, Technische Universität Darmstadt
Venue: Room 243, Time 08:30 – 10:10, Thursday 10th September 2015

817 **Dual-Purpose Microwaves Application: Blood Sensing and Self-Blood Treatment**
K. Arkhypova [1], A. Nosatov [2], P. Krasov [1], A. Fisun [1], M. Nurushev [3], V. Malakhov [4]
[1]NASU, Ukraine; [2]Kharkiv City Clinical Hospital No 7, Ukraine; [3]L.N. Gumilyov Eurasian National University, Kazakhstan; [4]KhMAPE, Ukraine

821 **K-Band BiCMOS Based Near-Field Biomedical Dielectric Sensor for Detection of Fat and Calcium in Blood**
Farabi Ibne Jamal, S. Guha, M.H. Eissa, S. Vehring, Dietmar Kissinger, C. Meliani, IHP, Germany

825 **Conformal mm-Wave Antennas for Catheter Embedded Atherosclerotic Plaque Sensors**
Gordon Notzon, Christoph Baer, Thomas Musch, C. Dahl, Ilona Rolfes, Ruhr-Universität Bochum, Germany

829 **Parametric Study of a Microwave Sensor Dedicated to the Dielectric Spectroscopy of Single Particles and Biological Cells**
W. Chen, D. Dubuc, K. Grenier, LAAS, France

833 **Parallelization of Dielectric Measurements at Microwaves for Microfluidic Biosensor Arrays**
M. Schüßler [1], M. Puentes [1], Rolf Jakoby [1], D. Dubuc [2], K. Grenier [2]
[1]Technische Universität Darmstadt, Germany; [2]LAAS, France

EuMC46 : THz Components

Chair: Jan Stake, Chalmers University of Technology
Co-Chair: Viktor Krozer, Goethe-Universität Frankfurt
Venue: Room 252A, Time 08:30 – 10:10, Thursday 10th September 2015

837 **1.9–3.2THz Schottky Based Harmonic Mixer Design and Characterization**
B.T. Bulcha [1], Jeffrey L. Hesler [2], V. Drakinskiy [3], J. Stake [3], N. Scott Barker [2]
[1]Virginia Diodes, USA; [2]University of Virginia, USA; [3]Chalmers University of Technology, Sweden

841 **An Efficient 290GHz Harmonic Oscillator in Transferred-Substrate InP-DHBT Technology**
M. Hossain, K. Nosaeva, B. Janke, N. Weimann, O. Krüger, Viktor Krozer, Wolfgang Heinrich, FBH, Germany

845 **A Dual-Output 550GHz Frequency Tripler Featuring Ultra-Compact Silicon Micromachining Packaging and Enhanced Power-Handling Capabilities**
Jose V. Siles, Cecile Jung-Kubiak, Theodore Reck, Choonsup Lee, Robert Lin, Goutam Chattopadhyay, Imran Mehdi, Jet Propulsion Laboratory, USA

N/A **High Power LO Signals Generation for THz Multi-Pixel Array Receiver**
Xiang Chen [1], Zhenhua Chen [2], Junxiang Ge [2]
[1]CAST, China; [2]NUIST, China

853 **A Robust Waveguide Millimeter-Wave Noise Source**
Negar Ehsan [1], Jeffrey Piepmeier [1], Michael Solly [1], Shawn Macmurphy [2], Jared Lucey [1], Edward J. Wollack [1]
[1]NASA, USA; [2]AS and D, USA

EuMC47: Flexible Stretchable and Printed Technology

Chair: Dimitri Pavlidis, Boston University
Co-Chair: Henri Happy, University of Lille
Venue: Room 241, Time 10:50 – 12:30, Thursday 10th September 2015

857 **Inkjet-Printed, Flexible, High Performance, Carbon Nanomaterial Based Sensors for Ammonia and DMMP Gas Detection**
Jimmy G.D. Hester, Manos M. Tentzeris, Yunnan Fang, Georgia Institute of Technology, USA

861 **Study and Characterization of CNT Inkjet Printed Patterns for Paper-Based RF Components**
Carlos Paragua, K. Frigui, Stéphane Bila, Dominique Baillargeat, XLIM, France

865 **Inkjet-Printing of Hybrid Ag/Conductive Polymer Towards Stretchable Microwave Devices**
Sebastien Pacchini [1], Mathieu Cometto [1], Jian Jie Chok [1], Gaetan Dufour [2], Nicolas Tiercelin [2], Philippe Pernod [2], Tay Beng Kang [1], Philippe Coquet [1]
[1] CINTRA, Singapore; [2] IEMN, France

869 **Ultra-Foldable/Stretchable Wideband RF Interconnects Using Laser Ablation of Metal Film on a Flexible Substrate**
Sofiene Bouaziz, Matthieu Berthomé, Jean-François Robillard, Emmanuel Dubois, IEMN, France

873 **Design of Kapton Based Passive Circuits at Microwave Frequencies**
Zhening Yang, Alexandru Takacs, Samuel Charlot, Daniela Dragomirescu, LAAS, France

EuMC48: Wireless Technologies

Chair: Andrew Gibson, University of Manchester
Co-Chair: Noushin Karimian, University of Manchester
Venue: Room 243, Time 10:50 – 12:30, Thursday 10th September 2015

877 **2.45GHz, 100Mbps BPSK-DSSS Transmitter for Interference-Robust Wireless Neuroprosthetic Networks**
Pawan Agarwal [1], Luke Renaud [1], Joe Baylon [1], Deyasini Majumdar [2], Deukhyoun Heo [1], Christian Schlegel [2]
[1] Washington State University, USA; [2] Dalhousie University, Canada

881 **Measurement of Human Exposure to LTE Base Stations: Present Status and Future Challenges in Measurement Methodology**
Christian Bornkessel [1], Matthias A. Hein [1], Matthias Wuschek [2]
[1] Technische Universität Ilmenau, Germany; [2] Technische Hochschule Deggendorf, Germany

885 **Portable 9.4/18.8GHz Harmonic Radar System Using Pulse Pseudorandom Code Principle**
Miao-Lin Hsu [1], Shiang-Jie Jan [1], Zuo-Min Tsai [1], Huei Wang [2], Fan-Ren Chang [2], Pei-Hung Jau [2], Kun-You Lin [2], En-Cheng Yang [2]
[1] National Chung Cheng University, Taiwan; [2] National Taiwan University, Taiwan

889 **A Wide Dynamic Range Microwave Frequency Discriminator for Cognitive Radio**
Debalina Chatterjee, Kurt Blau, Matthias A. Hein, Technische Universität Ilmenau, Germany

EuMC49: Silicon Front-End Subsystems

Chair: Cicero Voucher, NXP
Co-Chair: Almudena Suarez, Universidad de Cantabria
Venue: Room 251, Time 10:50 - 12:30, Thursday 10th September 2015

893 **Design of a Differential Diplexer Based on Integrated Active Inductors with 0.25μm SiGeC Process**
Cherif Hamidou Sy, Stephane Bosse, Severin Barth, Sangitiana Rakotozafy Harison, Station de Radioastronomie de Nançay, France

897 **A Ku-Band Series/Shunt Switching Type S/H IC for Direct RF Under Sampling Reception**
Tomokazu Koizumi, Mizuki Motoyoshi, Daliso Banda, Osamu Wada, Suguru Kameda, Noriharu Suematsu, Tadashi Takagi, Kazuo Tsubouchi, Tohoku University, Japan

901 **A 2–30GHz Ring Mixer with Active Baluns in 0.18-μm CMOS Technology for Vital Sign Detection Application**
Huei-Wen Wang [1], Jen-Hao Cheng [1], Jie-Ying Zhong [1], Tian-Wei Huang [1], Jeng-Han Tsai [2]
[1]National Taiwan University, Taiwan; [2]National Taiwan Normal University, Taiwan

905 **A Low-Power and Low-Noise X-Band Receiver MMIC in 90nm CMOS**
Ping-Yi Wang [1], Yun-Chun Shen [1], Te-Lin Wu [1], Ming-Yu Chen [1], Yin-Cheng Chang [1], Da-Chiang Chang [2], Shawn S.H. Hsu [1]
[1]National Tsing Hua University, Taiwan; [2]NARLabs, Taiwan

909 **A Robust Low Phase Noise and Wide Tuning Range K_u Band Sub-Integer Frequency Synthesizer for E-Band Backhaul Transceivers**
R. Levinger, O. Katz, J. Vovnoboy, Roee Ben Yishay, R. Carmon, B. Shienman, N. Mazor, Danny Elad, IBM Haifa Research Lab, Israel

EuMC50: Emerging THz Technologies

Chair: Antti Räisänen, Aalto University
Co-Chair: Dirk Nüßler, Fraunhofer FHR
Venue: Room 252A, Time 10:50 - 12:30, Thursday 10th September 2015

N/A **Performance Enhancement of 300GHz On-Chip Double Slot Antenna by Means of Artificial Dielectrics**
Waqas H. Syed, Giuseppe Fiorentino, Daniele Cavallo, Pasqualina M. Sarro, Andrea Neto, Ioan E. Lager, Technische Universiteit Delft, The Netherlands

917 **Array of Dielectric Rod Waveguide Antennas for Millimeter-Wave Power Generation**
Alejandro Rivera-Lavado [1], Sascha Preu [2], Luis Enrique García-Muñoz [1], Andrey Generalov [3], Javier Montero-de-Paz [1], Gottfried Döhler [2], Dmitri Lioubtchenko [3], Mario Méndez-Aller [1], Stefan Malzer [2], Daniel Segovia-Vargas [1], Antti V. Räisänen [3]
[1]Universidad Carlos III de Madrid, Spain; [2]FAU Erlangen-Nürnberg, Germany; [3]Aalto University, Finland

N/A **Novel Wide-Band Finger-Shaped Phase Shifter Based on Silicon-On-Glass (SOG) Technology for Sub-Millimeter Wave and Terahertz Applications**
Aidin Taeb [1], Suren Gigoyan [1], Safieddin Safavi-Naeini [1], Mohammed Basha [2]
[1]University of Waterloo, Canada; [2]Zewail City of Science & Technology, Egypt

925 **Electronic THz-Spectrometer for Plasmonic Enhanced Deep Subwavelength Layer Detection**
A. Berrier [1], M.C. Schaafsma [1], J. Gómez-Rivas [1], H. Schäfer-Eberwein [2], P. Haring Bolívar [2], L. Tripodi [3], M.K. Matters-Kammerer [3]
[1]Technische Universiteit Eindhoven, The Netherlands; [2]Universität Siegen, Germany; [3]Philips, The Netherlands

929 **Detection of DNA by Graphene-on-Silicon FET Structures Simultaneously at DC and 101GHz**
E.R. Brown [1], W.-D. Zhang [1], D. Neff [2], N.S. Green [2], M.L. Norton [2], P.H.Q. Pham [3], P.J. Burke [3]
[1]Wright State University, USA; [2]Marshall University, USA; [3]University of California at Irvine, USA

EuMC51: Tunable Components for Signal Processing and Detection

Chair: Pierre Blondy, University of Limoges
Co-Chair: Fabio Coccetti, CNRS-LAAS
Venue: Room 241, Time 13:50 – 15:30, Thursday 10th September 2015

933 **Modeling Antennas Printed on Magnetized Substrate: Application to the Design of a Tunable PIFA Antenna**
July Paola Cortes Nino, Patrick Queffelec, Alexis Chevalier, Gregory Verissimo, Jean-Luc Mattei, Lab-STICC, France

937 **Double-Actuation Extended Tuning Range RF MEMS Varactor**
Alessandro Cazzorla [1], Roberto Sorrentino [1], Paola Farinelli [2]
[1]Università di Perugia, Italy; [2]RF Microtech, Italy

941 **Discrete RF-Power MIM BST Thick-Film Varactors**
Sebastian Preis [1], Alex Wiens [2], Daniel Kienemund [2], Dustin Kendig [3], Holger Maune [2], Rolf Jakoby [2], Wolfgang Heinrich [1], Olof Bengtsson [1]
[1]FBH, Germany; [2]Technische Universität Darmstadt, Germany; [3]Microsanj, USA

945 **Bistable RF Switches Using $Ge_2Sb_2Te_5$ Phase Change Material**
Amine Mennai, Annie Bessaudou, Françoise Cosset, Cyril Guines, Pierre Blondy, Aurelian Crunteanu, XLIM, France

948 **Un-Cooled Resonant IR Detectors Based on Barium Strontium Titanate Switchable FBARs**
Milad Zolfagharloo Koohi, Seungku Lee, Victor Lee, Seyit Ahmet Sis, Amir Mortazawi, University of Michigan, USA

EuMCPoster01 : EuMC Poster01 Session

Chair: Jean Francois Villemazet, Thales Alenia Space
Co-Chair: Denis Barataud, XLIM
Venue: Hall Ternes - Level 1, Time 12:30 – 14:10, Wednesday 9th September 2015

952 **A Wide-Band 16-Pole Low-Insertion-Loss UHF Bandpass Filter for High-Power-Amplifiers**
Maximilian Wölfel[1], Ulrich Bochtler[1], Thomas F. Eibert[2], Christoph Schmitt[3]
[1]Hochschule Aschaffenburg, Germany; [2]Technische Universität München, Germany; [3]KaiTec, Germany

956 **Rapid Design Optimization of Microwave Filters Using Variable-Fidelity EM Simulations and Adjoint Sensitivity**
Slawomir Koziel[1], Adrian Bekasiewicz[2]
[1]Gdansk University of Technology, Poland; [2]Reykjavik University, Iceland

960 **Radiation Losses of Sapphire WGM Resonators: Effects of Dielectric Disk Shape**
I.A. Protsenko[1], A.A. Barannik[1], N.T. Cherpak[1], M.S. Kharchenko[1], H.O. Hlukhova[2], S.A. Vitusevich[2]
[1]NASU, Ukraine; [2]Forschungszentrum Jülich, Germany

964 **Ultra Compact E-Plane Waveguide Multiplexers**
Nandun Mohottige, Uros Jankovic, Djuradj Budimir, University of Westminster, UK

967 **Compact SIW Based Multimode Filters for Future Generation Wireless Front-Ends**
Umair Naeem[1], Stéphane Bila[2]
[1]COMSATS, Pakistan; [2]XLIM, France

971 **Modeling and Design of Microwave Filters Employing Overmoded Empty Cylindrical Resonators**
A. Morini[1], M. Baldelli[1], Giuseppe Venanzoni[1], Marco Farina[1], P. Angeletti[2], P.M. Iglesias[2], C. Ernst[2], N. Sidiropoulos[3]
[1]Università Politecnica delle Marche, Italy; [2]ESA, The Netherlands; [3]Space Engineering, Italy

975 **Harmonic Radar Using Multiple Receivers and Angle of Arrival Positioning Technique for Environment with Obstacles**
Hong-Yu Hsu[1], Beng-Meng Chen[1], Yen-Heng Lin[1], Zuo-Min Tsai[1], Yung-Ysiang Chiang[1], Mao-Ching Chiu[1], Chien-Feng Kao[2], Shih-Cheng Lin[2]
[1]National Chung Cheng University, Taiwan; [2]National Chiayi University, Taiwan

979 **Broadband Measurement of Complex Permittivity for Liquids via the Open-Ended Cut-Off Waveguide Reflection Method Using a Large-Bore Connector**
Kouji Shibata, Masaki Kobayashi, Hachinohe Institute of Technology, Japan

983 **A Simple Test Fixture De-Embedding Method for PCB Components Measurements Using a Calibrated Vector Network Analyzer**
Aleksandr A. Savin[1], Vladimir G. Guba[2], Maxim V. Sinogin[2], Oleg Yu. Morozov[2], Olesya N. Bykova[2]
[1]TUSUR, Russia; [2]NPK TAIR, Russia

987 **A Study of Uncertainty Estimation for Time-Domain Analysis by Considering Incompleteness of TRL Calibration Kit**
Yuto Kato, Masahiro Horibe, AIST, Japan

EuMCPoster02 : EuMC Poster02 Session

Chair: Jean Francois Villemazet, Thales Alenia Space
Co-Chair: Denis Barataud, XLIM
Venue: Hall Ternes - Level 1, Time 12:30 – 14:10, Wednesday 9th September 2015

991 **Hydration of Biopolymer-Chlorophyllin Complexes Measured by Microwave Differential Dielectrometry**
Daryna Pesina, Olga Khorunzhaya, Vsevolod Kashpur, Anna Shestopalova, Vladimir Maleev, NASU, Ukraine

995 **A New TLM Algorithm to Solve the Pennes's Equation for Dosimetry Applications**
Oualid Makhlouf, Marylène Cueille, Jean-Lou Dubard, LEAT, France

999 **Design and Implementation of Planar Rectenna for ISM-Band Application**
Shih-Cheng Lin [1], Chi-Wen Hsieh [1], Chung-Hao Chang [2], Tai-Lang Jong [2]
[1]National Chiayi University, Taiwan; [2]National Tsing Hua University, Taiwan

1003 **GaN Schottky Diodes for RF Wireless Power Detection and Conversion**
Timothy Boles, Gary Lopes, M/A-COM Technology Solutions, USA

1007 **Reliability of Transmission Lines Fabricated by Screen Printing for On-Wafer Measurements at Millimeter-Wave**
Masahiro Horibe, Manabu Yoshida, AIST, Japan

1011 **Static and Dynamic Characteristics of a MEMS Varactor with Broad Analog Capacitive Tuning Range for Wideband RF VCO Applications**
G. Kahmen [1], M. Wietstruck [2], Mehmet Kaynak [2], B. Tillack [2], Hermann Schumacher [3]
[1]Rohde & Schwarz, Germany; [2]IHP, Germany; [3]Universität Ulm, Germany

1015 **A DC-30GHz High Performance Packaged RF MEMS SPDT Switch**
A.H. Zahr [1], Pierre Blondy [1], L.Y. Zhang [2], C. Dorion [2], R. Stéfanini [2], F. Courtade [3], F. Pressecq [3]
[1]XLIM, France; [2]AirMems, France; [3]CNES, France

1018 **MEMS-Based Switched-Capacitor Banks for Impedance Matching Networks**
Raisa G. Pesel, Sara S. Attar, Raafat R. Mansour, University of Waterloo, Canada

1022 **Modeling and Characterization of Bond-Wire Arrays for Distributed Chip-Package-PCB Co-Design**
T.V. Dinh [1], D. Lesénéchal [1], B. Domengès [1], L. Leyssenne [1], D. Pasquet [1], P. Descamps [1], O. Doussin [2], D. Bajon [2], S. Wane [3]
[1]LaMIPS, France; [2]ISAE, France; [3]NXP Semiconductors, France

1026 **Waveguide Loop-Type Directional Coupler Using a Coupling Conductor with Protuberances**
Hidenori Ishibashi [1], Manabu Kurihara [2], Yukihiro Tahara [1], Hidenori Yukawa [1], Tetsu Owada [1], Hiroaki Miyashiya [1]
[1]Mitsubishi Electric Corporation, Japan; [2]Ryoden Shonan Electronics Corporation, Japan

1030 **Differential-Mode BPF Design Using Folded Substrate Integrated Waveguide Cavities**
Meng-Yu Chen, Wanchu Hong, Min-Hua Ho, NCUE, Taiwan

1033 **Millimetre Wave Dielectric Characterisation of Multilayer LTCC Substrate**
Dmitry Zelenchuk [1], Vincent Fusco [1], James Breslin [2], Mike Keaveney [2]
[1]Queen's University Belfast, UK; [2]Analog Devices, Ireland

1037 **Power Amplifier Performances and Miniaturization Improvement Based on Wire Bondable Vertical Silicon Capacitors**
Olivier Gaborieau, Lionel Lenoir, IPDiA, France

1041 **A Wide Stopband Low-Pass Wilkinson Power Divider**
Chih-Jung Chen, Yin-Drin Su, National Taiwan Ocean University, Taiwan

1045 **Compact, Lumped-Element Six-Port Receiver with 25% Bandwidth**
Mohamed Saeed, Ahmed Hamed, Renato Negra, RWTH Aachen University, Germany

1049 **High-Gain Substrate Integrated Cavity Antenna Array with Laminated Waveguide Feeding Network for W-Band Application**
Baolin Cao [1], Hao Wang [1], Jianfang Zheng [1], Yong Huang [2]
[1]NUST, China; [2]Suzhou Bohai Microsystem, China

1053 **Bow-Tie Antenna Fed by Microstrip Balun Filter with Designable Bandwidth and Extended Stopband**
Shih-Cheng Lin [1], Chi-Wen Hsieh [1], Chun-Chieh Wang [2], Kuan-Yu Lin [2], Tai-Lang Jong [2]
[1]National Chiayi University, Taiwan; [2]National Tsing Hua University, Taiwan

EuMCPoster03 : EuMC Poster03 Session

Chair: Jean Francois Villemazet, Thales Alenia Space
Co-Chair: Denis Barataud, XLIM
Venue: Hall Ternes - Level 1, Time 12:30 – 14:10, Wednesday 9th September 2015

1057 **A Compact Miniature Sensor Based on a Microstrip Taper Coupled to a Metamaterial Resonator**
L. Benkhaoua, M.T. Benhabiles, M.L. Riabi, Université Frères Mentouri Constantine, Algeria

1061 **Numerical Modeling of Reconfigurable THz Devices Based on Graphene Nanostructures Using Autonomous Blocks with Floquet Channels**
G.S. Makeeva, O.A. Golovanov, Penza State University, Russia

1065 **The Role of Electrostatic Modes in Determining the Current Distribution of a Loop Antenna Transmitting in the Resonant Frequency Range and Placed on the Surface of an Anisotropic Column**
Anna S. Zaitseva [1], Alexander V. Kudrin [1], Tatyana M. Zaboronkova [2]
[1]UNN, Russia; [2]NNSTU, Russia

1069 **Broadband Computation of System Output Sensitivities Using Model-Order Reduction**
Ortwin Farle [1], Romanus Dyczij-Edlinger [1], Andreas Köhler [2]
[1]Universität des Saarlandes, Germany; [2]Fraunhofer IIS, Germany

1073 **Electric-Field Tuning of Spin-Electromagnetic Wave Dispersion in Ferrite-Ferroelectric Multilayers**
V.V. Vitko [1], A.A. Nikitin [1], A.B. Ustinov [1], A.A. Semenov [1], Al.A. Nikitin [1], E. Lähderanta [2]
[1]St. Petersburg Electrotechnical University, Russia; [2]Lappeenranta University of Technology, Finland

EuMC/EuMIC01 : Linearisation Techniques for Advanced Transmitters

Chair: Jacob Arne, Technische Universität Hamburg-Harburg
Co-Chair: Martin Audrey, XLIM - University of Limoges
Venue: Maillot, Time 13:50 – 15:30, Monday 7th September 2015

1120 **Joint Compensation of I/Q Impairments, Power Amplifier Nonlinearity and Crosstalk in MIMO Transmitters Using Two-Box Model**
Milica Bozic, Djuradj Budimir, University of Westminster, UK

1124 **A 2.7-GHz Multi-Level PWM Carrier-Bursting RF Transmitter**
Peter Singerl [1], Christian Schuberth [1], Martin Mataln [1], David Seebacher [1], Franz Dielacher [1], Thomas Magesacher [2]
[1]Infineon Technologies, Austria; [2]Lund University, Sweden

1128 **Effects of Digital Predistortion and Crest Factor Reduction Techniques on Efficiency and Linearity Trade-Off in Class AB GaN-PA**
Deepak Nair M.V., R. Giofré, Paolo Colantonio, Franco Giannini, Università di Roma "Tor Vergata", Italy

1132 **Simplified Power Adaptive Digital Predistorter for RF Power Amplifiers in Dynamic Power Transmission**
Yan Guo, Chao Yu, Anding Zhu, University College Dublin, Ireland

1136 **A Novel Concurrent Tri-Band Digital Predistortion for Broadband Signals**
Tingjian Tian, Yanqing Zhao, Yunfu Dou, Chunlei Yu, Jing Qiu, Huawei Technologies, China

EuMC/EuMIC02 : Fiber-Wireless Techniques for Innovative Antenna and Front-End Systems

Chair: Tibor Berceli, Technical University of Budapest
Co-Chair: Edward Ackerman, Photonics Systems
Venue: Room 251, Time 13:50 – 15:30, Monday 7th September 2015

1140 **Millimeter-Wave Wireless Beam-Steering Using Patch-Antennas with Meandering-Gaps on Electro-Optical Modulator**
Y.N. Wijayanto [1], Atsushi Kanno [1], Tetsuya Kawanishi [1], H. Murata [2], Y. Okamura [2]
[1]NICT, Japan; [2]Osaka University, Japan

1144 **Investigation of Novel Architectures for Tunable Antennas Based on Optically Generated Plasmas**
C.D. Gamlath, M.A. Collett, M.J. Cryan, University of Bristol, UK

1148 **Wideband Planar Near-Field Antenna Measurement Technique Using an Analog Fiber-Optic Link**
A. Chizh [1], S. Malyshev [1], K. Mikitchuk [1], A. Milyaev [2], M. Popikov [2]
[1]NASB, Belarus; [2]TRIM UWB Measurement Systems, Russia

1152 **Photonic Front-End for the Next-Generation of Space SAR Applications**
M.A. Piqueras [1], T. Mengual [1], B. Chmielak [2], A. Catalani [3], P. Huggard [4], H. Wang [4], R. Ortuño [5]
[1]DAS Photonics, Spain; [2]AMO, Germany; [3]Space Engineering, Italy; [4]RAL Space, UK; [5]Universidad Politécnica de Valencia, Spain

1156 **Low-Latency Fiber-Wireless Bridge for Flexible Fronthauling in Future Mobile Networks**
Tien Dat Pham [1], Atsushi Kanno [1], Tetsuya Kawanishi [2]
[1]NICT, Japan; [2]Waseda University, Japan

EuMC/EuMIC03 : GaN Based Power Amplifiers

Chair: Paolo Colantonio, Università di Roma "Tor Vergata"
Co-Chair: Vincenzo Carrubba, Fraunhofer IAF
Venue: Maillot, Time 16:10 – 17:50, Monday 7th September 2015

1160 **A Compact Tri-Band GaN Voltage-Mode Class-D/S PA for Future 0.8/1.8/2.6GHz LTE Picocell Applications**
Andreas Wentzel, Monica Martinez-Mendoza, Wolfgang Heinrich, FBH, Germany

1164 **A Dual-Band UMTS/LTE Highly Power-Efficient Class-ABJ Doherty GaN PA**
V. Carrubba, E. Ture, Stephan Maroldt, M. Mußer, Friedbert van Raay, Rüdiger Quay, Oliver Ambacher, Fraunhofer IAF, Germany

1168 **A First Step Towards a 230W SSPA for Galileo System Exploiting European GaN Technology**
R. Giofré [1], Paolo Colantonio [1], Elisa Cipriani [1], R. Danieli [1], Franco Giannini [1], L. Gonzalez [2], F. De Arriba [2], L. Cabria [2], D. Baglieri [3]
[1] Università di Roma "Tor Vergata", Italy; [2] TTI Norte, Spain; [3] United Monolithic Semiconductors, France

1172 **C-Band and X-Band Class F, F^{-1} GaN MMIC PA Design for Envelope Tracking Systems**
Gayle Collins [1], Jeremy Fisher [2], Fabian Radulescu [2], Jeff Barner [2], Scott Sheppard [2], Rick Worley [3], Brian Woods [1]
[1] MaXentric Technologies, USA; [2] Cree, USA; [3] AFRL, USA

1176 **C-Band Power Amplifier Design Based on Low-Frequency Waveform Engineering**
Elisa Cipriani [1], Paolo Colantonio [1], Franco Giannini [1], Gianni Bosi [2], Antonio Raffo [2], Valeria Vadalà [2], Giorgio Vannini [2]
[1] Università di Roma "Tor Vergata", Italy; [2] Università di Ferrara, Italy

EuMC/EuMIC04 : ICs-Based Tuning Techniques and Modulation Circuits for Millimeter-Wave and 5G Systems

Chair: Noriharu Suematsu, Tohoku University
Co-Chair: Robert Weigel, FAU Erlangen-Nürnberg
Venue: Room 251, Time 16:10 – 17:50, Monday 7th September 2015

1180 **An RF-MEMS Based SP4T Switched LNA MMIC Used in a 24GHz Beam-Steering Antenna Module**
R. Malmqvist [1], A. Gustafsson [1], W. Simon [2], M. Arias Campo [2], L. Baggen [2], B. Grandchamp [3], S. Seok [4], M. Fryziel [4], N. Rolland [4], M. Lahti [5], P. Rantakari [5], T. Vähä-Heikkilä [5]
[1] FOI, Sweden; [2] IMST, Germany; [3] OMMIC, France; [4] IEMN, France; [5] VTT Technical Research Centre of Finland, Finland

1184 **A Digital 70–140-GHz Impedance Tuner in 130-nm CMOS Technology**
Matthias Porranzl [1], Christoph Wagner [2], Herbert Jaeger [2], Andreas Stelzer [1]
[1] Johannes Kepler Universität Linz, Austria; [2] DICE, Austria

1188 **Large Bandwidth Tunable Analog Equalizer Based on a Differential Cascode Amplifier Cell for 100-GBaud Communication Systems**
Ronan Mettetal [1], Jean-Yves Dupuy [1], Filipe Jorge [1], Agnieszka Konczykowska [1], Muriel Riet [1], Virginie Nodjiadjim [1], Achour Ouslimani [2]
[1] III-V Lab, France; [2] ECS-Lab (EA 3649), France

1192 **High Speed Phase Modulator Driver Unit in 55nm SiGe BiCMOS for a Single-Channel 100Gb/s NRZ Silicon Photonic Modulator**
Jérémie Prades [1], Anthony Ghiotto [1], Denis Pache [2], Eric Kerhervé [1]
[1] IMS (UMR 5218), France; [2] STMicroelectronics, France

1196 **A High Linearity, Image/LO-Rejection I/Q Up-Conversion Mixer for 5G Cellular Communications**
Chul Woo Byeon, Jeong Ho Lee, Dae Young Lee, Mee-Ran Kim, Ju Ho Son, Samsung, Korea

EuMC/EuMIC05 : Power Device Advanced Performance Assessment

Chair: Eric Bergeault, Telecom-Paristech
Co-Chair: Rocco Giofrè, Università di Roma "Tor Vergata"
Venue: Room 243, Time 08:30 – 10:10, Tuesday 8th September 2015

1200 **RF PA Modeling with One Chirp Measurement**
Filipe M.E. Barradas, Pedro M. Lavrador, Telmo R. Cunha, José C. Pedro, Universidade de Aveiro, Portugal

1204 **Active Baseband Drain-Supply Terminal Load-Pull of an X-Band GaN MMIC PA**
Gian Piero Gibiino [1], Gustavo Avolio [2], Scott Schafer [3], Dominique Schreurs [2], Zoya Popović [3], Alberto Santarelli [1], Fabio Filicori [1]
[1] Università di Bologna, Italy; [2] Katholieke Universiteit Leuven, Belgium; [3] University of Colorado at Boulder, USA

1208 **Investigating the Linearity versus Efficiency Trade-Off of Different Power Amplifier Modes in an Envelope Tracking Architecture**
Z.A. Mokhti [1], J. Lees [1], P.J. Tasker [1], C. Cassan [2]
[1] Cardiff University, UK; [2] Freescale Semiconductor, France

1212 **Experimental Time-Domain Evaluation and Simulation of High Power GaN HEMTS for RF Doherty Amplifier Design**
Lotfi Ayari [1], Guillaume Neveux [1], Denis Barataud [1], Mohammed Ayad [2], Estelle Byk [2], Christophe Chang [2], Marc Camiade [2]
[1] XLIM, France; [2] United Monolithic Semiconductors, France

1216 **Linearity Analysis of a 40W Class-G-Modulated Microwave Power Amplifier**
Nikolai Wolff [1], Olof Bengtsson [1], Martin Schmidt [2], Manfred Berroth [2], Wolfgang Heinrich [1]
[1] FBH, Germany; [2] Universität Stuttgart, Germany

EuMC/EuMIC06 : Tunable and Reconfigurable Filters and Impedance Matching Techniques

Chair: Pierre Blondy, XLIM University of Limoges
Co-Chair: Jorge Perez Martinez, Universidad Politécnica de Valencia
Venue: Room 251, Time 08:30 – 10:10, Tuesday 8th September 2015

1220 **Center Frequency and Bandwidth Tunable Waveguide Bandpass Filter with Transmission Zeros**
Christian Arnod [1], Jean Parlebas [1], Thomas Zwick [2]
[1] Tesat Spacecom, Germany; [2] KIT, Germany

1224 **A Tunable Filter Based on Miniature SIR Coaxial Resonators**
Hakim Aouidad [1], Jean-François Favennec [1], Eric Rius [1], Alexandre Manchec [2], Yann Clavet [2]
[1] Lab-STICC, France; [2] Elliptika, France

1228 **Reconfigurable UWB Filtennas with Sharp WLAN Dual Bandnotch**
Waqas Ahmad, Djuradj Budimir, University of Westminster, UK

1232 **Tunable Band-Reject Filter and Suppression of In-Band Interfering Signals in Mobile Communication**
Dieter Ferling, Xin Yu, Rupert Rheinschmitt, Andreas Pascht, Bell Labs, Germany

1236 **Tunable In-Package Impedance Matching for High Power Transistors Based on Printed Ceramics**
Alex Wiens [1], Sebastian Preis [2], Christian Kohler [3], Daniel Kienemund [1], Holger Maune [1], Olof Bengtsson [2], M. Nikfalazar [1], Joachim R. Binder [3], Wolfgang Heinrich [2], Rolf Jakoby [1]
[1] Technische Universität Darmstadt, Germany; [2] FBH, Germany; [3] KIT, Germany

EuMC/EuMIC07: Focus Session on Advances in THz and Opto-Nanoelectronics

Chair: Luca Pierantoni, Universita Politecnica Delle March
Co-Chair: Davide Mencarelli, Universita Politecnica Delle March
Venue: Room 242B, Time 13:50 – 15:30, Tuesday 8th September 2015

1240 **Nanoresonator Based Dielectric Surfaces for Light Manipulation**
F. Silvestri[1], E. Pisano[2], G. Gerini[1], V. Lancellotti[3], V. Galdi[2]
[1]TNO, The Netherlands; [2]Università del Sannio, Italy; [3]Technische Universiteit Eindhoven, The Netherlands

1244 **Performance Evaluation of Novel Technologies for Terahertz Reflectarrays**
Michele Tamagnone, Santiago Capdevila, Hamed Hasani, Pietro Romano, Anja Skrivervik, Julien Perruisseau-Carrier, Juan R. Mosig, Wolfgang A. Vitale, Clara Moldovan, Adrian M. Ionescu, EPFL, Switzerland

1248 **Optical Antennas in Hybrid Photonic Systems**
Ruud Hendrikx, Hugo Doeleman, Freek Ruesink, A. Femius Koenderink, Ewold Verhagen, FOM Institute AMOLF, The Netherlands

1252 **Ballistic Simulation of Ratchet Effect in Antidot Lattices Patterned on Graphene**
Luca Pierantoni[1], Davide Mencarelli[1], Fabio Coccetti[2], Tullio Rozzi[1]
[1]Università Politecnica delle Marche, Italy; [2]LAAS, France

1256 **Width-Modulated Magnonic Crystal and its Application for Spin-Wave Logic**
A.A. Nikitin[1], A.B. Ustinov[1], A.A. Semenov[1], A.V. Chumak[2], A.A. Serga[2], V.I. Vasyuchka[2], E. Lähderanta[3], B.A. Kalinikos[1], B. Hillebrands[2]
[1]St. Petersburg Electrotechnical University, Russia; [2]Technische Universität Kaiserslautern, Germany; [3]Lappeenranta University of Technology, Finland

EuMC/EuMIC08: Emerging Techniques for Parametric Tuning and Frequency Stability

Chair: Amir Mortazawi, University of Michigan
Co-Chair: Tan Phu Vuong, IMEP-LAHC, Grenoble INP
Venue: Room 251, Time 13:50 – 15:30, Tuesday 8th September 2015

1260 **Continuously Tuneable Liquid Crystal Based Stripline Phase Shifter Realised in LTCC Technology**
M. Jost[1], S. Strunck[2], A. Heunisch[3], Alex Wiens[1], A.E. Prasetiadi[1], C. Weickhmann[1], B. Schulz[3], M. Quibeldey[4], O.H. Karabey[1], T. Rabe[3], R. Follmann[4], D. Koether[4], Rolf Jakoby[1]
[1]Technische Universität Darmstadt, Germany; [2]Continental Teves, Germany; [3]BAM, Germany; [4]IMST, Germany

1264 **Low Bias Voltage Tunable Phase Shifter Based on Inkjet-Printed BST MIM Varactors for C/X-Band Phased Arrays**
M. Nikfalazar[1], A. Mehmood[1], M. Sohrabi[1], Alex Wiens[1], Y. Zheng[1], Holger Maune[1], Rolf Jakoby[1], M. Mikolajek[2], A. Friederich[2], Christian Kohler[2], Joachim R. Binder[2]
[1]Technische Universität Darmstadt, Germany; [2]KIT, Germany

1268 **Characterization of GaN-Based HEMTs as Varactor Diode Devices**
Abdelaziz Hamdoun[1], Langis Roy[1], Mohammed Himdi[2], Olivier Lafond[2]
[1]Carleton University, Canada; [2]IETR, France

1272 **A Wideband Class-AB Tunable Active Filter**
L. Pantoli, V. Stornelli, G. Leuzzi, Università dell'Aquila, Italy

1276 **Stable Frequency Dissemination via Optical Fiber Based on Passive Phase Fluctuation Cancellation**
Juan Wei[1], Fangzheng Zhang[1], Shilong Pan[1], Lan Yu[2]
[1]NUAA, China; [2]WIT, China

EuMIC/EuMCPoster: EuMIC/EuMC Poster Session

Chair: Denis Barataud, University of Limoges
Co-Chair: Eric Tournier, LAAS-CNRS, University of Toulouse
Venue: Hall Ternes - Level 1, Time Lunch, Tuesday 8th September 2015

1279 **A Novel Broadband High-Power Source-Pull/Load-Pull Concept for the HF- to UHF-Range**
Florian A. Maier[1], André Grede[1], Daniel Gruner[1], Rüdiger Quay[2], Patrick Waltereit[2], Oliver Ambacher[2]
[1]TRUMPF Hüttinger, Germany; [2]Fraunhofer IAF, Germany

1283 **Temperature Insensitive PA Bias Circuit with Digital Control Interface Using InGaP/GaAs HBT Technology**
Wei-Ling Chang[1], Chinchun Meng[1], Shyh-Chyi Wong[2], Hwey Chien[2], Guo-Wei Huang[3]
[1]National Chiao Tung University, Taiwan; [2]Richwave Technology Corporation, Taiwan; [3]National Nano Device Laboratories, Taiwan

1287 **A WLAN RF CMOS Power Amplifier with Power Detector, High Harmonic Suppression, and Temperature Compensation**
Wei-Tsung Li, Shih-Ming Wang, Gao-Ching Lin, ITRI, Taiwan

1291 **Frequency-Agile Packaged GaN-HEMT Using MIM Thickfilm BST Varactors**
Sebastian Preis[1], Alex Wiens[2], Nikolai Wolff[1], Rolf Jakoby[2], Wolfgang Heinrich[1], Olof Bengtsson[1]
[1]FBH, Germany; [2]Technische Universität Darmstadt, Germany

1295 **A New Variant of the Indirect Learning Architecture for the Linearization of Power Amplifiers**
Jessica Chani-Cahuana, Christian Fager, Thomas Eriksson, Chalmers University of Technology, Sweden

1299 **High Efficiency Ultra Broadband GaN Amplifier Using Series-Shunt Inductor Matching Network**
Eigo Kuwata, Atsuo Sugimoto, Christer M. Andersson, Shuichi Sakata, Hidetoshi Koyama, Yoshitaka Kamo, Koji Yamanaka, Hiroshi Fukumoto, Mitsubishi Electric Corporation, Japan

1303 **Coupled-Oscillator System with Two Stable Phase-Shift Intervals**
Franco Ramírez, Almudena Suárez, Sergio Sancho, Universidad de Cantabria, Spain

1307 **Project-Based RF/Microwave Education**
Richard L. Campbell, Branimir Pejcinovic, Portland State University, USA

1311 **The Microwave Virtual Laboratory for RF Engineers Education**
D.S. Gubsky, V.V. Zemlyakov, I.V. Mamay, Southern Federal University, Russia

1315 **Real-Time Microwave Remote Laboratory Architecture**
S. Farah[1], A. Benachenhou[1], Guillaume Neveux[2], Denis Barataud[2], G. Andrieu[2], T. Fredon[2]
[1]University of Mostaganem, Algeria; [2]XLIM, France

EuMC/EuRAD01 : Novel Microwave Technologies for Antennas

Chair: Tan-Phu Vuong, University of Grenoble
Co-Chair: Christian Waldschmidt, Universität Ulm
Venue: Maillot, Time 08:30 – 10:10, Wednesday 9th September 2015

1319 **Crossed-Slot Cavity Antenna in Slow-Wave SIW**
Anh-Tu Ho [1], Emmanuel Pistono [1], Tan-Phu Vuong [1], Alejandro Niembro-Martin [2]
[1] IMEP-LAHC, France; [2] CTP, France

1323 **Substrate Integrated Waveguide Slot-Fed Grid Array Antenna**
Osama Khan [1], Johannes Meyer [1], Klaus Baur [1], Christian Waldschmidt [2]
[1] Robert Bosch, Germany; [2] Universität Ulm, Germany

1327 **Metamaterial Structures Composed of Multi-Layer Ceramic Capacitors for Antenna Applications**
Naobumi Michishita, Hisashi Morishita, National Defense Academy, Japan

1331 **Bulk-Glass Ceramic Based Stacked Dielectric Resonator Antenna as Phased Array Element**
A. Mehmood [1], M. Nikfalazar [1], M. Sohrabi [1], Rolf Jakoby [1], M. Hovhanisyan [2], M. Letz [2]
[1] Technische Universität Darmstadt, Germany; [2] Schott, Germany

1335 **New Wideband Quadrature Rectangular Dielectric Resonator Antenna**
Pragati Patel [1], G. Shrikanth Reddy [1], Jayanta Mukherjee [1], Biswajeet Mukherjee [2]
[1] IIT Bombay, India; [2] IIIT Jabalpur, India

EuMC/EuRAD02 : UWB Antenna Systems

Chair: Cyrille Menudier, University of Limoges
Co-Chair: Michele Lalande, University of Limoges
Venue: Room 243, Time 08:30 – 10:10, Wednesday 9th September 2015

1339 **UWB Impulse Radiation Source with Integrated Optoelectronic Generator**
Romain Négrier [1], Michèle Lalande [1], Valérie Bertrand [2], Joël Andrieu [1], Vincent Couderc [1], Badr M. Shalaby [1], Laurent Pecastaing [3], Antoine De Ferron [3], Laurent Desrumaux [4]
[1] XLIM, France; [2] CISTEME, France; [3] SIAME, France; [4] DGA, France

1343 **Evaluation of a UWB Radar Interface for Low Power Radar Sensors**
Dieter Genschow, Johannes Kloas, IHP, Germany

1347 **A 1–21GHz, 3-Bit CMOS True Time Delay Chain with 274ps Delay for Ultra-Broadband Phased Array Antennas**
Feng Hu, Koen Mouthaan, National University of Singapore, Singapore

1351 **A CMOS UWB K-Band Impulse Radar Receiver**
Kristian Gjertsen Kjelgård, Tor Sverre Lande, University of Oslo, Norway

N/A **Ultra-Wideband Planar Antennas with Dual-Band Notched Characteristics Based on Electric Ring Resonators**
Irina B. Vendik [1], Alexander Rusakov [1], Komsan Kanjanasit [2], Jiasheng Hong [2], Dmitry Filonov [3]
[1] St. Petersburg Electrotechnical University, Russia; [2] Heriot-Watt University, UK; [3] ITMO University, Russia

EuMC/EuRAD03 : Antenna System Assessment for Radar and Communication Applications

Chair: Jean-Yves Dauvignac, University of Nice Sophia Antipolis
Co-Chair: Alexander Yarovoy, Delft University of Technology
Venue: Room 253, Time 08:30 – 10:10, Wednesday 9th September 2015

1359 **Study on Multiple Stream Transmission by Using Multiple Polarizations**
Maki Arai [1], Tomohiro Seki [1], Naoki Shinohara [2]
[1]NTT Corporation, Japan; [2]Kyoto University, Japan

1363 **A Closed-Form Formula for RSSI-Based DoA Estimation with Switched Beam Antennas**
Stefano Maddio, Marco Passafiume, Alessandro Cidronali, Gianfranco Manes, Università di Firenze, Italy

1367 **Synthesis of Multi-Element Antennas Using a Measurement Test Bench**
C. Menudier [1], Eric Arnaud [1], M. Thevenot [1], F. Fezai [1], A. Oueslati [1], Nicolas Chevalier [2], S. Reynaud [2], T. Monédière [1]
[1]XLIM, France; [2]CISTEME, France

1371 **Calibration of Polarimetric Radar System with Giant Aperture Antenna**
Jianzhi Lin, Weixing Li, Yue Zhang, Qianqiang Lin, Zengping Chen, NUDT, China

1375 **Impact of Soil on UWB Buried Antenna and Communication Link in IR-UWB WUSN Applications**
Hamadache Zemmour [1], Geneviève Baudoin [1], Cherif Hamouda [1], Antoine Diet [2], Marc Biancheri-Astier [3]
[1]ESYCOM, France; [2]GeePs, France; [3]GEOPS, France

EuMC/EuRAD04 : Feeds, Wideband and Multi Band Antennas

Chair: Alexandru Takacs, University of Toulouse
Co-Chair: Jean-Yves Dauvignac, University of Nice
Venue: Room 251, Time 16:10 – 17:50, Wednesday 9th September 2015

1379 **The Yagi-Helix: A Multi-Director Configuration for the Backfire-Helix Antenna**
Cosme Culotta-Lopez, Korbinian Schraml, Ralf Wilke, Dirk Heberling, RWTH Aachen University, Germany

1383 **Dual Polarized Monopulse Tracking Feed for Prime Focal Reflector Antenna at S-Band Using Crossed Dipole Elements**
Vamshi Krishna Panasa [1], Rajesh Chivukula [1], K. Sreekumar [1], S.B. Sharma [2]
[1]Larsen & Toubro, India; [2]Indus University, India

N/A **Design of a Multiband Microstrip Patch Antenna with Defected Ground Structures (DGS)**
Alper Çalişkan, Mehmet Ali Belen, Peyman Mahouti, Salih Demirel, Filiz Güneş, Yıldız Technical University, Turkey

1391 **Efficient Tapered Dielectric Image Line Antenna in Planar Environment**
Chandra Shekhar Prasad, Animesh Biswas, IIT Kanpur, India

EuMC/EuRAD05 : Printed Antennas

Chair: Raphaël Gillard, INSA Rennes
Co-Chair: Milan Polivka, Czech Technical University in Prague
Venue: Room 253, Time 16:10 – 17:50, Wednesday 9th September 2015

1395 **An Active Three-Dimensional GPS Patch Antenna Using MID-Technology**
A. Friedrich [1], L. Berkelmann [1], T. Martinelli [1], B. Geck [1], O. Klemp [2], I. Kriebitzsch [2]
[1]Leibniz Universität Hannover, Germany; [2]BMW Group, Germany

1399 **Orbital Angular Momentum Mode Multiplexing with Half-Mode Substrate Integrated Waveguide Antenna**
Yiling Chen, Shilie Zheng, Hao Chi, Xiaofeng Jin, Xianmin Zhang, Zhejiang University, China

1403 **Circularly Polarized Isoflux Compact X Band Antenna for Nano-Satellites Applications**
J. Fouany [1], M. Thevenot [1], Eric Arnaud [1], F. Torres [1], T. Monédière [1], N. Adnet [2], R. Manrique [2], L. Duchesne [2], J.M. Baracco [2], K. Elis [3]
[1]XLIM, France; [2]SATIMO, France; [3]CNES, France

1407 **Multiband Printed Antenna Composed of an Array of Split Ring Resonators**
Achmad Munir, Jumail Soba, Institut Teknologi Bandung, Indonesia

1411 **Dual Orthogonal CPW Feed Single Element UWB Antenna with Polarization Diversity**
G. Shrikanth Reddy, Kaustubh Chhabilwad, Shilpa Kharche, Pragati Patel, Jayanta Mukherjee, IIT Bombay, India

EuMC/EuRAD06 : Array Antennas — Design & Concepts

Chair: Peter Gardner, University of Birmingham
Co-Chair: Ioan E. Lager, Delft University of Technology
Venue: Maillot, Time 08:30 – 10:10, Thursday 10th September 2015

1415 **An Implemented Non-Focal Rotman Lens**
Mojtaba Rajabalian, Bijan Zakeri, Babol Noshirvani University of Technology, Iran

1419 **A Study of Multi-Phase Vector-Sum Phase Shifters for Phased Array**
Atsushi Honda, Toshihiro Shimura, Yoji Ohashi, Fujitsu Laboratories, Japan

1423 **Analysis and Design of a Slotted Waveguide Antenna Array Using Hollow Substrate Integrated Waveguide**
Lukui Jin, Razak M. Lee, Ian D. Robertson, University of Leeds, UK

1427 **Design of a Scalable Phased Array Antenna with a Simplified Architecture**
Fatemeh Akbar, Amir Mortazawi, University of Michigan, USA

1431 **Design Considerations on a Sparse Array Antenna for Ka-Band Spaceborne SAR Applications**
S. Jacobs [1], D. Bekers [1], S. Monni [1], M. Otten [1], W. van Rossum [1], G. Gerini [1], C. Germani [2], D. Fortini [2], G. Toso [3]
[1]TNO, The Netherlands; [2]Thales Alenia Space, Italy; [3]ESA, The Netherlands

EuMC/EuRAD07 : Antenna Arrays for Different Applications

Chair: Jean-Marc Goutoule, Airbus Defence and Space
Co-Chair: Alexander Yarovoy, Delft University of Technology
Venue: Room 253, Time 08:30 – 10:10, Thursday 10th September 2015

1435 **An Agile Electronically Scanned EBG Matrix Antenna for Monitoring Target Activity**
Hussein Abou Taam [1], Ali Siblini [1], Georges Zakka El Nashef [1], Bernard Jecko [1], Eric Arnaud [1], Nicolas Chevalier [1], Mohamed Rammal [2]
[1] XLIM, France; [2] Lebanese University, Lebanon

1439 **Comparison of Virtual Arrays for MIMO Radar Applications Based on Hexagonal Configurations**
C. Dahl, Ilona Rolfes, M. Vogt, Ruhr-Universität Bochum, Germany

1443 **Wideband Antenna Array for Real-Time Data and Video Transmission**
Jean-Marie Floch, Bilal El Jaafari, Ahmed El Sayed Ahmed, IETR, France

1447 **Multi-Beam Tapered Slot Antenna Array Using Substrate Integrated Waveguide Rotman Lens**
Javad Pourahmadazar, Tayeb A. Denidni, INRS-EMT, Canada

1451 **Wide Angle Scanning Reconfigurable Beam Steering Antenna**
T. Sabapathy [1], M. Jusoh [1], R.B. Ahmad [1], M.R. Kamarudin [2]
[1] Universiti Malaysia Perlis, Malaysia; [2] Universiti Teknologi Malaysia, Malaysia

EuMC/EuRAD08 : Array Antennas — Implementation

Chair: Ioan E. Lager, Delft University of Technology
Co-Chair: Peter Gardner, University of Birmingham
Venue: Maillot, Time 10:50 – 12:30, Thursday 10th September 2015

1455 **Prototype of 21-GHz Band Beam Forming Network for Array-Fed Imaging Reflector Antenna**
Masafumi Nagasaka, Susumu Nakazawa, Masashi Kamei, Shoji Tanaka, Tomohiro Saito, NHK, Japan

1459 **Compact Scan-Phase Antenna Diversity System for High Driving Speeds**
S. Senega, A. Nassar, Stefan Lindenmeier, Universität der Bundeswehr München, Germany

1463 **Implementation of the Ubiquitous Radar Concept with a Conformal Array**
P. Carta [1], G. Galati [1], E.G. Piracci [1], F. Madia [2], R. Ronconi [2]
[1] Università di Roma "Tor Vergata", Italy; [2] Fincantieri, Italy

1467 **Analog Beamforming Network for Ka Band Satellite on the Move Terminal with Phase Shifting Technique Based on I/Q Mixer**
Saverio Alessandro [1], Maria Concetta De Bilio [1], Salvatore Coco [2], Gaspare Bavetta [2], Ignazio Pomona [3], Antonio Laudani [4]
[1] Selex ES, Italy; [2] Università di Catania, Italy; [3] RF System Engineer Consultant, Italy; [4] Università di Roma Tre, Italy

1471 **Compact Ku-Band GaAs Multifunction Chip for SATCOM Phased Arrays**
Dong-Hwan Shin [1], Jin-Cheol Jeong [1], Seong-Mo Moon [1], In-Bok Yom [1], Dong-Wook Kim [2]
[1] ETRI, Korea; [2] Chungnam National University, Korea

EuMC/EuRAD09: Antenna Arrays and Beam Scanning

Chair: Olivier Lafond, University of Rennes 1
Co-Chair: Dirk Heberling, Aachen University
Venue: Room 253, Time 10:50 – 12:30, Thursday 10th September 2015

1475 **Pulsed-Field Array Performance: A TD Analysis**
Ioan E. Lager, Technische Universiteit Delft, The Netherlands

1479 **Waveguide-Type Discrete Beam-Scan Antenna with Switching Diodes**
Hiroshi Kubo, Tsunayuki Yamamoto, Masayuki Takamatsu, Atsushi Sanada, Yamaguchi University, Japan

1483 **Linear Dual-Band Phased Arrays with Wide-Angle Scanning Capability**
S.E. Valavan, D. Tran, A.G. Yarovoy, A.G. Roederer, Technische Universiteit Delft, The Netherlands

1487 **Antenna for 3D Radar Demonstrator**
Vadim Závodný, Petr Kopecký, Eldis Pardubice, Czech Republic

1491 **Design of a Waveguide Slot Array Antenna for Monopulse Tracking Application in Millimeter Wave**
Wentao Zhang, Fengyun Cui, Qiang Wang, Xiaoyang He, Chuanfei She, Yingyi He, CAEP, China

EuMC/EuRAD10: Antennas for Ka-Band Applications

Chair: Arne Jacob, Technical University of Hamburg
Co-Chair: Erwan Fourn, INSA Rennes
Venue: Room 253, Time 13:50 – 15:30, Thursday 10th September 2015

1495 **A Dual-Frequency and Dual-Polarized Patch Antenna at Ka-Band**
Benjamin Rohrdantz, Thomas Jaschke, Frauke K.H. Gellersen, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany

1499 **Design and Investigation of Meshed Patch Antennas for Applications at 24GHz**
Q.H. Dao, R. Braun, B. Geck, Leibniz Universität Hannover, Germany

1503 **SIW Multilayer Rotman Lens Antenna in the 24-GHz Band**
Karim Tekkouk, Mauro Ettorre, Ronan Sauleau, IETR, France

1507 **A Wideband Planar Array Antenna for Ka-Band Wireless Communication Applications**
Jie Wu, Yu Jian Cheng, Yong Fan, UESTC, China

1511 **Conformal K Band Array Performance Prediction Based on Improved Element Modeling**
G. Nelson[1], G.R. Branner[1], M. Chun[1], B.P. Kumar[2]
[1]University of California at Davis, USA; [2]California State University at Sacramento, USA

EuRAD/EuMCPoster01 : EuRAD/EuMC Poster01 Session

Chair: Michèle Lalande, University of Limoges
Co-Chair: Laurent Ferro-Famil, University of Rennes 1
Venue: Hall Ternes — Level 1, Time 12:30 - 14:10, Thursday 10th September 2015

1515 **A Rotating Antenna Ground-Based SAR**
Massimiliano Pieraccini, Nicola Agostini, Federico Papi, Silvestro Rocchio, Università di Firenze, Italy

1519 **A Real-Time Multiple Target Detecting Scheme Based on Microwave Metamaterials**
Chung-Tse Michael Wu, Wayne State University, USA

1523 **Phase Noise Analysis in FMCW Radar Systems**
Kashif Siddiq [1], Robert J. Watson [1], S.R. Pennock [1], Philip Avery [2], Richard Poulton [2], Ben Dakin-Norris [2]
[1]University of Bath, UK; [2]Navtech Radar, UK

1527 **Performance Evaluation of Passive Secondary Surveillance Radar for Small Aircraft Surveillance**
Takuya Otsuyama [1], Junichi Honda [1], Kakuichi Shiomi [1], Gaku Minorikawa [2], Yusuke Hamanaka [2]
[1]ENRI, Japan; [2]Hosei University, Japan

1531 **FMCW Ramp Non-Linearity Effects and Measurement Technique for Cooperative Radar**
Andreas Frischen [1], Juergen Hasch [1], Christian Waldschmidt [2]
[1]Robert Bosch, Germany; [2]Universität Ulm, Germany

1535 **Zero-IF Radar Signal Processing**
Stefano Turso, Thomas Bertuch, Fraunhofer FHR, Germany

1539 **cuDeformer — Software for Reversing Radar Signal Processing, Based on CUDA Technology**
Jacek Gambrych, Warsaw University of Technology, Poland

1543 **Analysis of Circular Polarization of the Quadrifilar Helix Antenna in the Presence of Ground Plane for LEO Satellites**
M. Ahmad [1], M. Amin [2], A.A. Khan [1], M.T. Azim [3], Mohammad A. Alim [4]
[1]CIIT, Pakistan; [2]IST, Pakistan; [3]SRDC, Pakistan; [4]University of Manchester, UK

1547 **Comparison Study of Scalar and Vector Calibrations for Wideband Modulation Signals**
Shuw-Guann Lin [1], Da-Chiang Chang [1], Ying-Zong Juang [1], Hwann-Kaeo Chiou [2]
[1]NARLabs, Taiwan; [2]National Central University, Taiwan

1551 **A Low-Cost IEEE802.11ad Wireless Network Appliance Test System with Mixed Domain Oscilloscope and Down Converter**
Kohei Fujiwara [1], Takeshi Kobayashi [1], Junichi Ukita [2], Yoshikazu Honjo [2]
[1]TIRI, Japan; [2]Candox Systems, Japan

1555 **Method of Multi-Channel Calibration for Digital Array Radar**
Weixing Li, Jianzhi Lin, Weihua Wang, Yasen Wang, Zengping Chen, NUDT, China

1559 **Wideband Vivaldi Antenna Array with Mechanical Support and Protection Radome for Land-Mine Detection Radar**
N.T. Nguyen [1], G. Clementi [1], C. Migliaccio [1], N. Fortino [1], J.-Y. Dauvignac [1], J. Willebois [2], C. Chekroun [2]
[1]LEAT, France; [2]BOWEN ERTE, France

EuRAD/EuMCPoster02: EuRAD/EuMC Poster02 Session

Chair: Laurent Ferro-Famil, University of Rennes 1
Co-Chair: Michèle Lalande, University of Limoges
Venue: Hall Ternes — Level 1, Time 12:30 - 14:10, Thursday 10th September 2015

1563 **Statistical Properties of the Polarization Ratio for Radar Returns with Deterministic Polarized Targets in Clutter**
Bo Ren, Longfei Shi, Shunping Xiao, Guoyu Wang, Yuliang Chang, NUDT, China

1567 **The Study of Microwave Scattering of Anisotropic Sea Surface with the Corrected Two-Scale Model**
Da-wei Song, She Shang, Xi Luo, CAST, China

1570 **An Analytical Method to Compute Track Continuity Performance Measures**
Jeroen Wijnhout, Thales Nederland, The Netherlands

1574 **Target Detection Using Space-Time Adaptive Processing (STAP) and a Multi-Band, Multi-Channel Software Defined Passive Radar**
Mubashir Alam, Khalid Jamil, Sami M. Alhumaidi, King Saud University, Saudi Arabia

1578 **High-Performance Autofocusing for Light-Weight SAR Platforms**
Ievgen M. Gorovyi, Oleksandr O. Bezvesilniy, Dmytro M. Vavriv, NASU, Ukraine

1582 **Real Time Classification of Targets Using Waveforms in Resonance Scattering Region**
M. Alper Selver [1], E. Yeşim Zoral [1], Mustafa Seçmen [2]
[1] Dokuz Eylül University, Turkey; [2] Yaşar University, Turkey

1586 **Integrated FFT Accelerator and Inline Bin-Rejection for Automotive FMCW Radar Signal Processing**
Dian T. Nugraha, Andre Roger, Romain Ygnace, Infineon Technologies, Germany

1590 **Fast Analysis of Luneburg Lens Radiation by Green's Function Method**
Boris Panchenko [1], Sergey Shabunin [1], Dmitry Denisov [2]
[1] Ural Federal University, Russia; [2] Ural Technical Institute of Communications & Computer Sciences, Russia

1594 **SNR in Active Receiving Antenna Used as an Element of Phased Antenna Array for GURT Radio Telescope**
Peter L. Tokarsky, Alexander A. Konovalenko, Igor S. Falkovich, Serge N. Yerin, NASU, Ukraine

1598 **Omnidirectional Cylindrical Microstrip Antennas with Horizontally-Polarized Radiation**
Alexander Ye. Svezhentsev [1], Sen Yan [2], V. Volski [2], Guy A.E. Vandenbosch [2]
[1] NASU, Ukraine; [2] Katholieke Universiteit Leuven, Belgium

1602 **Uniplanar Log-Periodic Antenna with a Perpendicular Plane Reflector Dedicated to a Radio Wave Camera System**
Faicel Ouasli, Jean-Philippe Coupez, Patrice Pajusco, Christian Person, Lab-STICC, France

1606 **Measurement of Point-of-Impact Based on Microwave PNCW Radar and Kalman Filtration**
Premysl Hudec [1], Filip Kozak [1], Petr Panek [2]
[1] Czech Technical University in Prague, Czech Republic; [2] CAS, Czech Republic