

MEMSWAVE Conference 2016,
5-6 July, IMT Bucharest, Romania

Program

Tuesday 5th of July

8:50 – 9:00 Registration	
9:00-9:10 Opening and welcome address, A Müller , IMT Bucharest	
9:10-9:30 MEMSWAVE history at a glance	
9:30-10.00 Invited Paper (1) Stretchable Microfluidic RF Electronics for Biopatches, Klas Hjort , Microsystems Technology, Uppsala University, Sweden	Chairs: Henri Rajbenbach, <i>European Commission</i> Dan Dascalu, <i>IMT Bucharest</i>
10:00-10.20 Coffee break	
Session TUE1: RF MEMS for millimetre and sub-milimetre wave applications	
10:20-10:40 Micromachined Waveguide Integrated RF MEMS Switch Operating between 500-750 GHz , U. Shah ¹ , T. Reck ² , E. Decrossas ² , C. Jung-Kubiak ² , H. Frid ¹ , G. Chattopadhyay ² , I. Mehdi ² and J. Oberhammer ¹ , ¹ KTH Stockholm, Sweden, ² Jet Propulsion Laboratory, USA.	
10:40-11:00 PCM, PTM and MEMS switches for future microwave and millimeter wave applications , A. Mennai, A. Hariri, A. Crunteanu, P. Blondy, <i>Xlim Limoges, France</i> .	
11:00-11:20 RF pad optimization for a 140 GHz RF-MEMS switch , S. Tolunay Wipf ¹ , A. Göritz ¹ , M. Wietstruck ¹ , C. Wipf ¹ , B. Tillack ^{1,2} , M. Kaynak ^{1,3} , <i>IHP Frankfurt am Oder, Germany</i> , ² <i>Technische Universität Berlin, Germany</i> , ³ <i>Sabanci University İstanbul, Turkey</i> .	
11:20-11:40 Kapton Flexible Technology for V-band Applications , Z. Yang, A. Takacs, S. Charlot, D. Dragomirescu, <i>LAAS CNRS, Université de Toulouse, France</i> .	
11:40-12:00 RF-MEMS switch structures for K-band to W-band , D. Vasilache, A. Stefanescu, G. Boldeiu, <i>IMT Bucharest, Romania</i> .	
12:00-13:00 Visit of IMT and its new facility “Research Centre for Integrated Systems Nanotechnologies and Carbon Based Nanomaterials” (CENASIC)	
13:00-14:00 Lunch	
14:00 Invited Paper (2) LTCC Technology for Space Qualified RF MEMS Manufacturing and Packaging, Romolo Marcelli , <i>National Research Council - Institute for Microelectronics and Microsystems (CNR-IMM), Rome, Italy</i>	Chairs: Pierre Blondy, <i>Xlim, Limoges, France</i> Joachim Oberhammer, <i>KTH Stockholm, Sweden</i> ,
Session TUE2: Novel materials, packaging and integration	
14:30-14:50 The Smart MEMS Piezo based Energy Harvesting with Integrated Supercapacitor and Packaging , C. Rusu ¹ , A. Alvandpour ² , P. Enoksson ³ , T. Braun ⁴ , S. Tiedke ⁵ , R. Dal Molin ⁶ , G. Férin ⁷ , E. Viinikka ⁸ , T. Ebefors ⁹ , ¹ <i>Sensor Systems department, Acreo Swedish ICT, Sweden</i> , ² <i>Division of Integrated Circuits and Systems, ISY, Linköping University, Sweden</i> , ³ <i>Micro- and Nanosystems group, Chalmers Univ. of Technology, Sweden</i> , ⁴ <i>Fraunhofer-IZM, Germany</i> , ⁵ <i>aixACCT Systems GmbH, Germany</i> , ⁶ <i>LivaNova</i> ,	

France, ⁷Vernon SA, France, ⁸Spinverse Innovation Management Oy, Finland, ⁹Silex Microsystems AB, Sweden.

14:50-15:10 **Graphene-based Schottky diode integrated with a graphene bow-tie antenna for energy harvesting in the THz frequency band**, M. Aldrigo¹, M. Dragoman¹, A. Dinescu¹, D. Masotti², ¹IMT Bucharest, Romania, ²Univ. Bologna, Italy.

15:10-15:30 **Electrical properties of SiNx films doped with CNTs for MEMS capacitive switches**, M. Koutsourelis¹, G. Stavrinidis², G. Konstantinidis² and G. Papaioannou¹, ¹Physics Department, University of Athens, Greece, ²FORTH-IESL-MRG, Heraklion, Crete, Greece.

15:30-15:50 **Cryogenic experiments of a W-Band hybrid integrated direct detection receiver for space applications**, A.C. Bunea, D. Neculoiu, A.M. Avram, A. Müller, IMT Bucharest, Romania.

16:00-18:30 **Visit of the Village Museum and bus tour on Calea Victoriei and at the Palace of the Parliament** with return in the center (near Hilton Hotel).

20:30 – 23:00 **Dinner**

Wednesday 6th of July

9:30-10:00 Invited Paper (3) Energy efficient reconfigurable GHz to THz electronic functions with phase-change materials , Adrian M. Ionescu, Ecole Polytechnique Fédérale de Lausanne, Switzerland.	Chairs: George Konstantinidis, FORTH-IESL-MRG, Heraklion, Greece Klas Hjort, Uppsala University, Sweden
10:00-10:30 Invited Paper (4) Single-chip SOI CMOS and SiGe BiCMOS D-Band and J-Band radios and sensors with on-die antennas , Sorin P. Voinigescu, University of Toronto, Canada	
10:30-11:00 Coffee break	
Session WED1: RF MEMS/NEMS in devices and circuits	
11:00-11:20 0.13 μm BiCMOS embedded On-Chip High-Voltage Charge Pump with Stacked BEOL Capacitors for RF-MEMS Applications , M. Wietstruck ¹ , W. Winkler ² , A. Göritz ¹ , S. Tolunay-Wipf ¹ , C. Wipf ¹ , D. Schmidt ¹ , A. Mai ¹ , and M. Kaynak ^{1,3} , IHP Frankfurt am Oder, Germany, ² Silicon Radar GmbH, Frankfurt am Oder, Germany, ³ Sabanci University, Istanbul, Turkey.	
11:20-11:40 NEMS Relay as Integrated Selector Device for Memristor Crossbars , G.C. Adam, IMT Bucharest, Romania.	
11:40-12:00 Lifetime of bi-directionally actuated ohmic MEMS switches with gold contacts under hot switching conditions , T. Lisec, F. Stoppe, A. Neumann and B. Wagner, Fraunhofer Institute for Silicon Technology, ISIT Fraunhofer, Itzehoe, Germany.	
12:00-12:20 MEMS Varactor Modeling Methodology for interactive Electromechanical Simulation with High Accuracy , G. Kahmen ¹ , M. Wietstruck ² and H. Schumacher ³ , ¹ Rohde & Schwarz GmbH, Munich, Germany, ² IHP, Frankfurt (Oder), Germany, ³ Institute of Electron Devices and Circuits, Ulm University, Germany.	
12:20-12:40 Multilayer Micromachined Technology for the fabrication of Ka band filters , B. Margesin ¹ , F. Giacomozzi ¹ , P. Farinelli ² , ¹ Fondazione Bruno Kessler (FBK), Trento, Italy, ² RF Microtech, Perugia, Italy.	
13:00-14:00 Lunch	

14:00 Invited Paper (5) Thermopile based THz detector , Bela Szentpáli, MFA Budapest, Hungary	Chairs: Lluís Pradell, Universitat Politécnica de Catalunya , Barcelona, Spain Dan Neculoiu, IMT Bucharest
Session WED2: Tunable MEMS NEMS, packaging and reliability issues	
14:30-14:50 Analysis of dielectric charging assessment through up-state capacitance-voltage characteristic in MEMS capacitive switches , M. Koutsourelis, D. Birmiliotis, L. Michalas and G. Papaioannou, ¹ Physics Department, University of Athens, Greece.	
14:50-15:10 Zero-level packaged compact RF-MEMS , K. Nadaud, F. Roubeau, P. Blondy, Xlim Limoges, France.	
15:10-15:30 Widely Tunable MEMS LC Tank for Multi-band applications , A. Cazzorla ¹ , P. Farinelli ¹ , F. Giacomozzi ² , R. Sorrentino ³ , ¹ RF Microtech, Perugia, Italy, ² Fondazione Bruno Kessler FBK, Trento, Italy, ³ University of Perugia, Italy.	
15:30-15:50 Atomic layer deposition for MEMS , T. Suni, T. Pilvi, Picosun Oy, Espoo, Finland.	
15:50-16:10 Microwave characterization of MoS2 and its applications as microwave tunable 2D material , M. Dragoman, M. Aldrigo, A. Cismaru, A. Radoi, A. Dinescu, IMT Bucharest, Romania.	
16:10-16:30 Coffee break	
Session WED3: SENSORS devices and circuits	Chairs: Flavio Giacomozzi, FBK Trento, Italy Bela Szentpáli, MFA Budapest, Hungary
16:30-16:50 Thermoelectric generator as in situ temperature sensor for III-nitride power HEMTs , C. Koliakoudakis ¹ , A. Stavrinidis ¹ , K. Tsagaraki ¹ , K. Vamvoukakis ¹ , M. Kayiambaki ¹ , V. Prudkovskiy ¹ , G. Deligeorgis ¹ , N. Kornilios ² , G. Konstantinidis ¹ , ¹ FORTH-IESL-MRG, Heraklion, Crete, Greece, ² Technological Institute of Crete, Heraklion, Crete, Greece.	
16:50-17:10 RF Detector with Packaged Schottky Diode Fully Embedded in Substrate Integrated Waveguide , V. Buiculescu, IMT Bucharest, Romania.	
17:10-17:30 Compact Phase Shifting Cell Based on Micro-Strip Slow Wave Lines , M. Gastaldi, D. Dragomirescu, A. Takacs, V. Armengaud, LAAS CNRS, Université de Toulouse, France.	
17:30-17:50 Analysis of GHz operating SAW resonators manufactured on GaN membranes as pressure and temperature sensors , I.Giangu ¹ , G. Konstantidis ² , A. Dinescu ¹ , A. Stavrinidis ² , A. Stefanescu ¹ , G. Stavrinidis ² and A. Müller ¹ , IMT Bucharest, Romania, ² FORTH-IESL-MRG, Heraklion, Crete, Greece.	