

# WOCSDICE 2018

## WORKSHOP ON COMPOUND SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS HELD IN EUROPE

BUCHAREST, ROMANIA, 14-16 MAY 2018

### PROGRAM

Monday, 14 May 2018	Tuesday, 15 May 2018	Wednesday, 16 May 2018
<b>WOCSDICE</b>	<b>WOCSDICE</b>	<b>WOCSDICE + EXMATEC</b>
08:30 – 09:00 WOCSDICE Registration		08:30 – 09:00 EXMATEC Registration
09:00 – 09:15 Welcome to WOCSDICE 2018 (Mircea Dragoman, Conference Chairman)	09:00 – 09:30 <b>Invited paper</b> (Sorin Cristoloveanu, France)	09:00 – 09:15 Welcome to EXMATEC 2018 (Mircea Dragoman, Conference Chairman)
09:15 – 09:45 <b>Invited paper</b> (Jaroslav Kovac, Slovakia)	09:30 – 10:30 <b>GRAPHENE ELECTRONICS II</b> <i>Chair: Sorin Cristoloveanu, France</i>	09:15 – 10:15 <b>WOCSDICE Invited papers</b> (Alexandru Muller, Romania; Ikuo Soga, Japan)
09:45 – 10:45 <b>GRAPHENE ELECTRONICS I</b> <i>Chair: Hans Hartnagel, Germany</i>		10:15 – 11:15 <b>THZ ELECTRONICS (WOCSDICE)</b> <i>Chair: Hans Hartnagel, Germany</i>
10:45 – 11:00 <b>Coffee break</b>	10:30 – 10:45 <b>Coffee break</b>	11:15 – 11:30 <b>Coffee break</b>
11:00 – 11:30 <b>Invited paper</b> (Gregg Jessen, USA)	10:45 – 11:15 <b>Invited paper</b> (Alessandro Chini, Italy)	11:30 – 12:30 <b>ADVANCED MATERIALS AND APPLICATIONS III (WOCSDICE)</b> <i>Chair: Alexandru Muller, Romania</i>
11:30 – 12:50 <b>DEVICES I – HEMTs</b> <i>Chair: Dimitris Pavlidis, USA</i>	11:15 – 12:35 <b>DEVICES II – GaN ELECTRONICS</b> <i>Chair: Alessandro Chini, Italy</i>	12:30 – 14:00 <b>Lunch</b>
13:00 – 14:00 <b>Lunch</b>	12:45 – 14:00 <b>Lunch</b>	14:00 – 15:00 <b>EXMATEC Invited papers</b> (Robert Czernecki, Poland; Giuseppe Greco, Italy)
14:00 – 14:30 <b>Invited paper</b> (Rusty Harris, USA)	14:00 – 14:30 <b>Invited paper</b> (Naoteru Shigekawa, Japan)	15:00 – 16:40 <b>GROWTH AND PROCESSING OF SEMICONDUCTORS AND OXIDES I (EXMATEC)</b> <i>Chair: Dimitris Pavlidis, USA</i>
14:30 – 15:10 <b>ADVANCED MATERIALS AND APPLICATIONS I</b> , <i>Chair: Titus Sandu, Romania</i>	14:30 – 15:50 <b>HETEROSTRUCTURES</b> <i>Chair: Naoteru Shigekawa, Japan</i>	
15:10 – 15:30 <b>Coffee break</b>	16:00 – 19:00 <b>Bucharest City Guided Tour</b>	
15:30 – 16:50 <b>ADVANCED MATERIALS AND APPLICATIONS II</b> , <i>Chair: Magdalena Ciurea, Romania</i>		
19:00 – <b>WOCSDICE Welcome Cocktail</b> , GRAND HOTEL CONTINENTAL, Concerto Restaurant	19:00 – <b>WOCSDICE Gala Dinner</b> , “Casa Doina” Restaurant	19:00 – <b>EXMATEC Welcome Cocktail</b> , GRAND HOTEL CONTINENTAL, Concerto Restaurant

	<b>Monday, 14 May</b>
	<b>WOCSDICE 2018</b>
08:30 – 09:00	<b>WOCSDICE Registration</b>
09:00 – 09:15	<b>Welcome to WOCSDICE 2018</b> Mircea Dragoman, Conference Chairman
09:15 – 09:45	<b>INVITED PAPER</b> <b>Characterization of electrothermal properties of GaN structures supported by 2/3D electrothermal modeling and simulation</b> <u>Jaroslav Kovac</u> , Institute of Electronics and Photonics, Slovak University of Technology in Bratislava, Slovakia
	<b>GRAPHENE ELECTRONICS I</b> <i>Chair: Hans Hartnagel, Germany</i>
09:45 – 10:05	<b>Experimental investigations on Ni-catalyzed graphitization of PECVD deposited nanocrystalline graphene</b> <u>Marius A. Avram</u> , F. Comănescu, S. Vulpe, O. Simionescu, F. Năstase, R. Gavrilă, A. Dinescu, M. Dănilă, V. Țucureanu, A. Matei, B. Țîncu, M. Veca, C. Pachi, O. Buiu, R. Popa National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
10:05 – 10:25	<b>Thin film graphene nanocomposite aerogels</b> <u>Alexandru-Cosmin Obreja</u> <sup>1*</sup> , S. Iordanescu <sup>1</sup> , M. Popescu <sup>1</sup> , R. Gavrilă <sup>1</sup> , V. Schiopu <sup>1</sup> , F. Comanescu <sup>1</sup> , M. Dragoman <sup>1</sup> <sup>1</sup> National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania
10:25 – 10:45	<b>On Graphene Nanoribbon-based Nanoelectronic Circuits Viability</b> <u>Sorin Cotofana</u> <sup>1*</sup> , P. Dimitrakis <sup>2</sup> , M. Enachescu <sup>3</sup> , I. Karafyllidis <sup>4</sup> , A. Rubio <sup>5</sup> , G. Ch. Sirakoulis <sup>4</sup> <sup>1</sup> Technical University of Delft, The Netherlands; <sup>2</sup> Institute of Nanoscience and Nanotechnology, NCSR “Demokritos”, Greece; <sup>3</sup> “Politehnica” University of Bucharest, Romania; <sup>4</sup> Democritus University of Thrace, Greece; <sup>5</sup> Universitat Politècnica de Catalunya, BarcelonaTech, Spain
10:45 – 11:00	<b>Coffee break</b>
11:00 – 11:30	<b>INVITED PAPER</b> <b>Electrical Characterization of Lateral Ga<sub>2</sub>O<sub>3</sub> FETs for Power Switching and RF Power Applications</b> <u>Gregg Jessen</u> <sup>1*</sup> , K. Chabak <sup>1</sup> , A. Green, K. Leedy <sup>1</sup> , A. Crespo <sup>1</sup> , S. Tetlak <sup>1</sup> , D. Walker Jr. <sup>1</sup> , E. Heller <sup>1</sup> <sup>1</sup> Air Force Research Laboratory, WPAFB, OH 45433, USA
	<b>DEVICES I – HEMTs</b> <i>Chair: Dimitris Pavlidis, USA</i>
11:30 – 11:50	<b>Analysis of Thermal Properties of Power HEMT on SiC substrate</b> <u>Aleš Chvála</u> <sup>1*</sup> , Robert Szobolovszký <sup>1</sup> , Jaroslav Kováč jr. <sup>1</sup> , Martin Florovič <sup>1</sup> , Juraj Marek <sup>1</sup> , Luboš Černaj <sup>1</sup> , Patrik Příbytný <sup>1</sup> , Daniel Donoval <sup>1</sup> , Sylvain Laurent Delage <sup>2</sup> , Jean-Claude Jacquet <sup>2</sup> , Jaroslav Kováč <sup>1</sup> <sup>1</sup> Institute of Electronics and Photonics, Slovak University of Technology in Bratislava, Bratislava, Slovakia <sup>2</sup> III-V Lab, Palaiseau, France

<b>Monday, 14 May</b>	
<b>WOCSDICE 2018</b>	
11:50 – 12:10	<p><b>Effect of Acceptor Density in Buffer Layer on Breakdown Characteristics of AlGaIn/GaN HEMTs with High-k Passivation Layer</b>  S. Ueda, Y. Kawada, <u>K. Horio</u>*  Faculty of Systems Engineering, Shibaura Institute of Technology, Saitama, Japan</p>
12:10 – 12:30	<p><b>Analysis of microwave detection with GaN HEMTs under RF probes</b>  Hector Sánchez-Martín<sup>1*</sup>, E. Pérez-Martín<sup>1</sup>, P. Altuntas<sup>2</sup>, V Hoel<sup>2</sup>, S. Rennesson<sup>3</sup>, Y. Cordier<sup>3</sup>, J. A. Novoa<sup>1</sup>, S. Pérez<sup>1</sup>, T. González<sup>1</sup>, J. Mateos<sup>1</sup>, <u>J. Íñiguez-de-la-Torre</u><sup>1</sup>  <sup>1</sup> Universidad de Salamanca, Spain; <sup>2</sup> Institut d'Électronique, de microélectronique et de nanotechnologie (IEMN), France; <sup>3</sup> Centre de Recherche sur l'Hétéro-Epitaxie et ses Applications, CNRS-CRHEA, France</p>
12:30 – 12:50	<p><b>High Transconductance Multiple Drain Access Channel AlGaIn/GaN HEMTs</b>  Brendan Ubochi*, <u>Kaled Ahmeda</u>, M. Alqaysi, and K. Kalna  Nanoelectronic Devices Computational (NanoDeCo) Group, College of Engineering, Swansea University, Swansea, Wales, United Kingdom.</p>
13:00 – 14:00	<b>Lunch</b>
14:00 – 14:30	<p><b>INVITED PAPER</b>  <b>3D (FinFET) integration of compound semiconductors with silicon</b>  <u>Rusty Harris</u>, Texas A&amp;M University, USA</p>
	<p><b>ADVANCED MATERIALS AND APPLICATIONS I</b>  <i>Chair: Titus Sandu, Romania</i></p>
14:30 – 14:50	<p><b>Low Temperature Direct Wafer Bonding of Thermally-Mismatched Materials</b>  <u>Viorel Dragoi</u>*, P. Kerepesi and N. Razek  EV Group, St. Florian am Inn, AUSTRIA</p>
14:50 – 15:10	<p><b>Characterization of resistivity and breakdown field in Fe-doped semi-insulating GaN substrates</b>  <u>Kosuke Suzuki</u><sup>1</sup>, Atsuki Aoai<sup>1</sup>, Joel T. Asubar<sup>1</sup>, Hirokuni Tokuda<sup>1</sup>, Kohei Nojima<sup>2</sup>, Naoto Ishibashi<sup>2</sup>, Narihito Okada<sup>2</sup>, Kazuyuku Tadatomo<sup>2</sup>, Masaaki Kuzuhara<sup>1</sup>  <sup>1</sup> University of Fukui, Fukui, Japan; <sup>2</sup> Yamaguchi University, Yamaguchi, Japan</p>
15:10 – 15:30	<b>Coffee break</b>
	<p><b>ADVANCED MATERIALS AND APPLICATIONS II</b>  <i>Chair: Magdalena Ciurea, Romania</i></p>
15:30 – 15:50	<p><b>Ion Implantation for adjusting electrical conductivity of <math>\beta</math>-Ga<sub>2</sub>O<sub>3</sub> by Nitrogen and Germanium Incorporation</b>  <u>Kornelius Tetzner</u><sup>1</sup>, E. Bahat-Treidel<sup>1</sup>, A. Thies<sup>1</sup>, G. Wagner<sup>2</sup>, J. Würfl<sup>1</sup>  <sup>1</sup>Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany; <sup>2</sup>Leibniz-Institut für Kristallzüchtung (IKZ), Berlin, Germany</p>

	<b>Monday, 14 May</b>
	<b>WOCSDICE 2018</b>
15:50 – 16:10	<p><b>Models of thermal conductivity in ultrananocrystalline diamond films</b>  <u>Titus Sandu</u><sup>*</sup>, Cristina Pachiu, Mihai Gologanu  National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania</p>
16:10 – 16:30	<p><b>Impact of thermal treatment upon morphology and crystallinity of titanium nitride thin films deposited by RF sputtering</b>  <u>Silviu Vulpe</u><sup>1*</sup>, F. Nastase<sup>1</sup>, A. Avram<sup>1</sup>, O. Simionescu<sup>1</sup>, C. Romanitan<sup>1</sup>, R. Gavrilă<sup>1</sup>, B. Bită<sup>1,2</sup>, A. Dumitru<sup>2</sup>  <sup>1</sup> National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania  <sup>2</sup> Faculty of Physics, University of Bucharest, PO Box MG-11, 077125, Magurele, Romania</p>
16:30 – 16:50	<p><b>Dielectrics choice and processing for low dispersion enhancement mode p-GaN gate HEMTs on 200mm Si substrates</b>  <u>Shuzhen You</u><sup>1*</sup>, N. E. Posthuma<sup>1</sup>, N. Ronchi<sup>1</sup>, S. Stoffels<sup>1</sup>, B. Bakeroot<sup>2</sup>, D. Wellekens<sup>1</sup>, H. Liang<sup>1</sup>, M. Zhao<sup>1</sup>, S. Decoutere<sup>1</sup>  <sup>1</sup> IMEC, Leuven, Belgium; <sup>2</sup> Centre for Microsystems Technology (CMST), IMEC and Ghent University, Gent, Belgium</p>
19:00 – 21:00	<b>WOCSDICE Welcome Cocktail</b> , GRAND HOTEL CONTINENTAL, Concerto Restaurant

Tuesday, 15 May	
WOCSDICE 2018	
09:00 – 09:30	<p><b>INVITED PAPER</b>  <b>Novel concepts for nano-devices</b>  Sorin Cristoloveanu and Maryline Bawedin  IMEP-LAHC, Grenoble INP Minatec, Grenoble, France</p> <p><b>GRAPHENE ELECTRONICS II</b>  <i>Chair: Sorin Cristoloveanu, France</i></p>
09:30 – 09:50	<p><b>Graphene self-switching diodes for sub-millimetre wave harvesting applications</b>  Martino Aldrigo<sup>1*</sup>, M. Yasir<sup>2</sup>, S. Iordanescu<sup>1</sup>, D. Vasilache<sup>1</sup>, A. Dinescu<sup>1</sup>, M. Dragoman<sup>1</sup>, M. Bozzi<sup>2</sup>  <sup>1</sup> National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania; <sup>2</sup> University of Pavia, Pavia, Italy</p>
09:50 – 10:10	<p><b>Two-Dimensional Layered Approaches for Devices Operating Using the Valley Degree of Freedom</b>  P. Sengupta<sup>1</sup>, J. Shi<sup>1</sup> and Dimitris Pavlidis<sup>2*</sup>  <sup>1</sup> University of Illinois, Chicago, Illinois, USA; <sup>2</sup> Boston University, Boston, Massachusetts, USA</p>
10:10 – 10:30	<p><b>Detection of CO<sub>2</sub> Using MWCNT-Based Sensors</b>  Alina Cismaru<sup>1*</sup>, C. Obreja<sup>1</sup>, M. Aldrigo<sup>1</sup>, S. Iordanescu<sup>1</sup>, B. Bitu<sup>1</sup>, M. Dragoman<sup>1</sup>  <sup>1</sup> National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania</p>
10:30 – 10:45	<b>Coffee break</b>
10:45 – 11:15	<p><b>INVITED PAPER</b>  <b>GaN RF and GaN Power – Device Parameter Drifts Analysis</b>  Alessandro Chini, <i>University of Modena and Reggio Emilia, Italy</i></p> <p><b>DEVICES II – GaN ELECTRONICS</b>  <i>Chair: Alessandro Chini, Italy</i></p>
11:15 – 11:35	<p><b>Ni based Schottky contacts in bulk GaN</b>  Giuseppe Greco<sup>1</sup>, F. Giannazzo<sup>1</sup>, M. Spera<sup>1,2,3</sup>, M. Cannas<sup>3</sup>, A. Alberti<sup>1</sup>, F. Iucolano<sup>4</sup>, F. Roccaforte<sup>1</sup>  <sup>1</sup> Istituto per la Microelettronica e Microsistemi (CNR-IMM), Catania, Italy; <sup>2</sup> University of Catania, Catania, Italy; <sup>3</sup> University of Palermo, Palermo, Italy; <sup>4</sup> STMicroelectronics, Catania, Italy</p>
11:35 – 11:55	<p><b>Fabrication of quasi-vertical GaN JFET via Selective-Area Regrowth</b>  Simon Kotzea<sup>1*</sup>, A. Debal<sup>1</sup>, M. Heuken<sup>1,2</sup>, H. Kalisch<sup>1</sup> and A. Vescan<sup>1</sup>  <sup>1</sup> CST, RWTH Aachen University, Aachen, Germany; <sup>2</sup> AIXTRON SE, Herzogenrath, Germany</p>

<b>Tuesday, 15 May</b>	
<b>WOCSDICE 2018</b>	
11:55 – 12:15	<p><b>Self-Aligned Processing of p-GaN-Gated E-mode HFET by Selective Etching with Cl<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub></b>  <u>Gerrit Lükens</u><sup>1*</sup>, H. Hahn<sup>1</sup>, M. Eickelkamp<sup>2</sup>, M. Heuken<sup>1,2</sup>, H. Kalisch<sup>1</sup> and A. Vescan<sup>1</sup>  1 CST, RWTH Aachen University, Aachen, Germany; 2 AIXTRON SE, Germany</p>
12:15 – 12:35	<p><b>Reduction of threshold voltage for accumulation drifts in n-GaN MIS capacitors devices by post-metallization annealing</b>  <u>Nicole Volkmer</u><sup>1</sup>, Eldad Bahat Treidel<sup>1</sup>, Franziska Naumann<sup>2</sup>, Hassan Gargouri<sup>2</sup>, Ina Ostermay<sup>1</sup>, Oliver Hilt<sup>1</sup> and Joachim Würfl<sup>1</sup>  1 Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany  2 SENTECH Instruments GmbH, Berlin, Germany</p>
12:45 – 14:00	<b>Lunch</b>
14:00 – 14:30	<p><b>INVITED PAPER</b>  <b>Hybrid heterostructures and heterostructure devices fabricated by surface activated bonding technologies</b>  <u>Naoteru Shigekawa</u>, <i>Graduate School of Engineering, Osaka City University, Japan</i></p> <p><b>HETEROSTRUCTURES</b>  <i>Chair: Naoteru Shigekawa, Japan</i></p>
14:30 – 14:50	<p><b>Optical properties of as-grown GaAs/GaAsBi single quantum well structures grown by Molecular Beam Epitaxy</b>  <u>Haifa Alghamdi</u><sup>1*</sup>, M. Henini<sup>1</sup>, D. Fan<sup>2, 3</sup>, Y. I. Mazur<sup>3</sup>, M. E. Ware<sup>2, 3</sup>, S.-Q. Yu<sup>2, 3</sup>, G. J. Salamo<sup>3</sup>  1 University of Nottingham, Nottingham, UK; 2 Department of Electrical Engineering, University of Arkansas, Fayetteville, AR, USA.  3 Institute for Nanoscience and Engineering, University of Arkansas, Fayetteville, AR, USA</p>
14:50 – 15:10	<p><b>Coupling study in type II GaSb/GaAs quantum ring solar cells</b>  <u>D. Montesdeoca</u><sup>1*</sup>, P.D. Hodgson<sup>1</sup>, M. De La Mata<sup>2</sup>, A.R.J. Marshall<sup>1</sup>, S.I. Molina<sup>2</sup>, P.J. Carrington<sup>3</sup> and A. Krier<sup>1</sup>  1 Physics Department, Lancaster University, Lancaster, UK; 2 Facultad de Ciencias, IMEYMAT, Universidad de Cadiz, Campus Rio san Pedro, Cadiz, Spain; 3 Engineering Department, Lancaster University, Lancaster, UK</p>
15:10 – 15:30	<p><b>Broadband terahertz source based on wide-bandgap semiconductor quantum cascade structures for the detection of explosive materials</b>  <u>Hans L. Hartnagel</u><sup>1*</sup> and Vadim P. Sirkeli<sup>1,2</sup>  1 Institut für Mikrowellentechnik und Photonik, Technische Universität Darmstadt, Darmstadt, Germany  2 Department of Information Technologies, Mathematics and Physics, Comrat State University, Comrat, Moldova</p>
15:30 – 15:50	<p><b>Sheet resistance under Ohmic contacts on AlGaIn/GaN heterostructures</b>  <u>Monia Spera</u><sup>1,2,3,*</sup>, G. Greco<sup>1</sup>, C. Miccoli<sup>4</sup>, R. Lo Nigro<sup>1</sup>, C. Bongiorno<sup>1</sup>, D. Corso<sup>1</sup>, S. Di Franco<sup>1</sup>, F. Iucolano<sup>4</sup>, F. Roccaforte<sup>1</sup>  1 Istituto per la Microelettronica e Microsistemi (CNR-IMM), Catania, Italy; 2 University of Catania, Catania, Italy; 3 University of Palermo, Palermo, Italy; 4 STMicroelectronics, Catania, Italy</p>
16:00 – 19:00	<b>Bucharest City Guided Tour</b>
19:00 – 22:00	<b>WOCSDICE Gala Dinner, "Casa Doina" Restaurant</b>

<b>Wednesday, 16 May</b>	
<b>WOCSDICE + EXMATEC 2018</b>	
<b>08:30 – 09:00</b>	<b>EXMATEC Registration</b>
09:00 – 09:15	<b>Welcome to EXMATEC 2018</b> Mircea Dragoman, Conference Chairman
09:15 – 09:45	<b>WOCSDICE INVITED PAPERS</b>  <b>GaN SAW based sensors manufactured by micromachining and nanoprocessing of of GaN/Si</b> <u>Alexandru Muller</u> , National Institute for R&D in Microtechnologies - IMT Bucharest, Romania
09:45 – 10:15	<b>MM-W and THz Circuitry Designs Based on InP and CMOS</b> <u>Ikuo Soga</u> <sup>1*</sup> , Yoichi Kawano <sup>1</sup> 1 Devices & Materials Laboratory, Fujitsu Laboratories Limited
10:15 – 10:35	<b>THZ ELECTRONICS I (WOCSDICE)</b> <i>Chair: Hans Hartnagel, Germany</i>  <b>Resonant tunneling hard-type oscillators having a Schottky diode trigger circuit for stable and large voltage swing operation</b> <u>Koichi Maezawa</u> <sup>*</sup> , Motoyuki Yoshida, Masayuki Mori 1 Graduate School of Science and Engineering, University of Toyama
10:35 – 10:55	<b>Near-ultraviolet avalanche photodetectors based on bulk ZnSe</b> <u>Hans L. Hartnagel</u> <sup>1*</sup> , Vadim P. Sirkeli <sup>1,2</sup> , Oktay Yilmazoglu <sup>3</sup> , Ahid S. Hajo <sup>1</sup> , Natalia D. Nedeoglo <sup>4</sup> , Dmitrii D. Nedeoglo <sup>4</sup> , Sascha Preu <sup>1</sup> , and Franko Küppers <sup>1</sup> 1 Institut für Mikrowellentechnik und Photonik, Technische Universität Darmstadt, Darmstadt, Germany; 2 Comrat State University, Comrat, Moldova; 3 Department of High Frequency Electronics, Technische Universität Darmstadt, Darmstadt, Germany; 4 Moldova State University, Chisinau, Moldova
10:55 – 11:15	<b>A novel mechanical tuning element for SIW applications</b> <u>Valentin Buiculescu</u> , Ioana Zdru, <i>National Institute for R&amp;D in Microtechnologies - IMT Bucharest, Romania</i>
11:15 – 11:30	<b>Coffee break</b>
11:30 – 11:50	<b>ADVANCED MATERIALS AND APPLICATIONS III (WOCSDICE)</b> <i>Chair: Alexandru Muller, Romania</i>  <b>Effect of silicon surface cleaning on reliability of ALD HfO2 films deposited from Tetrakis(dimethylamino)hafnium (TDMAH)</b> <u>Cornel Cobianu</u> <sup>1,2</sup> , Florin Nastase <sup>1,2</sup> , Niculae Dumbravescu <sup>1,2</sup> , Octavian Buiu <sup>1,2</sup> , Bogdan Serban <sup>1,2</sup> , Florin Comanescu <sup>1</sup> , Raluca Gavrilă <sup>1</sup> , Cosmin Romanitan <sup>1</sup> , Octavian Ionescu <sup>1,2</sup> ; 1.National Institute for Research and Development in Microtechnologies - IMT Bucharest, ROMANIA 2.Research Centre for Integrated Systems, Nanotechnologies and Carbon Based Nanomaterials (CENASIC) - IMT Bucharest, ROMANIA,

<b>Wednesday, 16 May</b>	
<b>WOCSDICE + EXMATEC 2018</b>	
11:50 – 12:10	<p><b>Comparative study of structural and optical properties of Sm and La doped ZnO</b>  P. Pascariu<sup>1</sup>, I. V. Tudose<sup>2</sup>, C. Pachiu<sup>3</sup>, M. Danila<sup>3</sup>, R. Gavrilă<sup>3</sup>, E. Koudoumas<sup>2</sup>, <u>Mirela Suchea</u><sup>2,3*</sup>  1 "Petru Poni" Institute of Macromolecular Chemistry, Iași, Romania; 2 Technological Educational Institute of Crete, Heraklion, Greece  3 National Institute for Research and Development in Microtechnologies - IMT Bucharest, Bucharest, Romania</p>
12:10 – 12:30	<p><b>Semiconducting metal oxides for ammonia and aliphatic amines gas sensing. A novel HSAB interaction paradigm</b>  B. C. Serban<sup>1*</sup>, O. Buiu<sup>1</sup>, O. Ionescu<sup>1</sup>, <u>C. Cobianu</u><sup>1</sup>, M. Brezeanu<sup>2</sup>  1 National Institute for Research and Development in Microtechnologies - IMT Bucharest, Romania; 2 University Politehnica of Bucharest, Romania</p>
12:30 – 14:00	<b>Lunch</b>
<b>EXMATEC INVITED PAPERS</b>	
14:00 – 14:30	<p><b>Influence of hydrogen on InGaN quantum well MOVPE growth</b>  Robert Czernecki<sup>1,2*</sup>, E. Grzanka<sup>1,2</sup>, J. Smalc-Koziorowska<sup>1,2</sup>, S. Grzanka<sup>1,2</sup>, M. Leszczyński<sup>1,2</sup>; <sup>1</sup>Institute of High Pressure Physics of the Polish Academy of Sciences, Poland; <sup>2</sup>TopGaN Ltd., Poland</p>
14:30 – 15:00	<p><b>Ohmic metallizations for GaN-based devices</b>  <u>Giuseppe Greco</u><sup>1*</sup>, F. Iucolano<sup>2</sup>, F. Roccaforte<sup>1</sup>; <sup>1</sup>Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi (CNR-IMM), Italy; <sup>2</sup>STMICROELECTRONICS, Italy</p>
<p><b>GROWTH AND PROCESSING OF SEMICONDUCTORS AND OXIDES I (EXMATEC)</b>  <i>Chair: Dimitris Pavlidis, USA</i></p>	
15:00 – 15:20	<p><b>Preparation of ZnO:Al thin films by helicon wave excited magnetron sputtering method</b>  <u>Shizutoshi Ando</u><sup>*</sup>, T. Namba, Tokyo University of Science, Japan</p>
15:20 – 15:40	<p><b>Oxide-free, electrically-conductive semiconductor interfaces fabricated by room temperature covalent direct bonding</b>  <u>Viorel Dragoi</u><sup>*</sup>, C. Flötgen, N. Razek, EV Group E. Thallner GmbH, Austria</p>
15:40 – 16:00	<p><b>Atomic layer etching of AlGaIn</b>  Sebastien Aroulanda<sup>1,2*</sup>, O. Patard<sup>1</sup>, N. Defrance<sup>2</sup>, P. Altuntas<sup>1</sup>, N. Michel<sup>1</sup>, J. Pereira<sup>1</sup>, P. Gamarra<sup>1</sup>, C. Lacam<sup>1</sup>, S. L. Delage<sup>1</sup>, J.-C. de Jaeger<sup>2</sup>, C. Gaquiere<sup>2</sup>, <sup>1</sup>III-V Lab, France ; <sup>2</sup>Institut d'Electronique, de Microélectronique et de Nanotechnologie, France</p>
16:00 – 16:20	<p><b>MOCVD growth of thick InxAl1-xN (0.37 ≤ x ≤ 0.40) layer</b>  <u>Prerna Chauhan</u><sup>1*</sup>, S. Hasenöhrl<sup>1</sup>, E. Dobročka<sup>1</sup>, J. Kuzmík<sup>1</sup>; <sup>1</sup>Institute of Electrical Engineering, Slovak Academy of Sciences, Slovak Republic</p>
16:20 – 16:40	<p><b>Nanoscale electrical characterization of graphene Schottky contacts onto AlGaIn/GaN heterostructures</b>  <u>G. Greco</u><sup>1*</sup>, E. Schilirò<sup>1</sup>, S. Di Franco<sup>1</sup>, R. Lo Nigro<sup>1</sup>, F. Roccaforte<sup>1</sup>, F. Giannazzo<sup>1</sup>, F. Iucolano<sup>2</sup>, S. Ravesi<sup>2</sup>, P. Prystawko<sup>3</sup>, P. Kruszewski<sup>3</sup>, M. Leszczyński<sup>3</sup>, R. Dagher<sup>4</sup>, E. Frayssinet<sup>4</sup>, A. Michon<sup>4</sup>, Y. Cordier<sup>4</sup>; <sup>1</sup>Consiglio Nazionale delle Ricerche – Istituto per la Microelettronica e Microsistemi (CNR-IMM), Italy; <sup>2</sup>STMICROELECTRONICS, Italy; <sup>3</sup>TopGaN, Poland; <sup>4</sup>Université Côte d'Azur, CNRS, CRHEA, France</p>
19:00 – 21:00	<b>EXMATEC Welcome Cocktail</b> , GRAND HOTEL CONTINENTAL, Concerto Restaurant