

# MAM2017

MATERIALS FOR ADVANCED METALLIZATION

## CONFERENCE PROGRAM

### SUNDAY, MARCH 26, 2017

**18:00 – 21:00**      *GET TOGETHER & CONFERENCE REGISTRATION  
(HILTON HOTEL DRESEN)*

### MONDAY, MARCH 27, 2017

*08:00 – 17:00*      *CONFERENCE REGISTRATION*

*13:45 – 17:00*      *POSTER EXHIBIT*

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#### CONFERENCE OPENING

**09:00 – 09:10**      **WELCOME**  
**Stefan E. Schulz**  
*Technische Universität Chemnitz, Center for Microtechnologies, Germany*

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#### KEYNOTE PRESENTATION

**09:10 – 09:55**      **KEYNOTE**  
  
**“21ST CENTURY'S PROPHECIES: HOW FUTURE TRENDS ARE CHALLENGING THE SEMICONDUCTOR BUSINESS”**  
  
**Jakob Kriz**  
*Infineon Technologies Dresden*

**SESSION 1: INTEGRATION** **CHAIR: S. E. SCHULZ**

09:55 – 10:15

**“SIMULATION ASSISTED BEOL PROCESS OPTIMIZATION”**

**Marcus Wislicenus<sup>1\*</sup>, Johannes Koch<sup>1</sup>, Benjamin Uhlig<sup>1</sup>, Axel Preusse<sup>2</sup>**  
*1 Fraunhofer IPMS - Center Nanoelectronic Technologies, Königsbrücker Str. 178, 01099 Dresden, Germany*  
*2 GLOBALFOUNDRIES Module One LLC Co. KG, Wilschdorfer Landstr. 101, 01109 Dresden, Germany*

10:15 - 10:35

**“MIMCAP DEVICE INTEGRATION WITH OPTIMIZED HIGH-K DIELECTRIC MATERIAL”**

**Prakash Periasamy, Archana Subramaniyan, Lili Cheng, Dina Triyoso, Ben Kim, Robert Fox**  
*GLOBALFOUNDRIES INC., Malta, New York, USA*

10:35 – 11:00

COFFEE BREAK

**SESSION 2: 3D INTEGRATION/PACKAGING** **CHAIR: T. OHBA**

11:00 – 11:35

INVITED

**"TRENDS IN PACKAGING – FROM FAN-OUT WAFER LEVEL PACKAGING TO PANEL LEVEL PACKAGING "**

**Michael Töpper**  
*Fraunhofer IZM*

11:35 – 11:55

**“MORPHOLOGY OF IMC IN THE BINARY SYSTEMS OF CO/SN AND CU/SN”**

**Fuya Nagano<sup>1,2</sup>, Jaber Derakhshandeh<sup>2</sup>, Lin Hou<sup>2</sup>, Myriam Van De Peer<sup>2</sup>, Inge De Preter<sup>2</sup>, Shamin Houshmand Sharifi<sup>2,4</sup>, Masanori Kajihara<sup>3</sup>, Kenneth June Rebibis<sup>2</sup>, Andy Miller<sup>2</sup>, Gerald Beyer<sup>2</sup> and Eric Beyne<sup>2</sup>**  
*1) Graduate School, Tokyo Institute of Technology, Yokohama 226-8502, Japan*  
*2) imec, Kapeldreef 75, 3001 Leuven, Belgium*  
*3) Department of Materials Science and Engineering, Tokyo Institute of Technology, Yokohama 226-8502, Japan*  
*4) Technical University of Dresden (TU Dresden), Dresden, 01069, Germany*

11:55 – 12:15

**“COMPARING SAM (SELF-ASSEMBLED MONOLAYER) DEPOSITION METHODS TO PASSIVATE COPPER MICROBUMPS FOR 3D STACKING”**

**Shamin Houshmand Sharifi<sup>1,2</sup>, Jaber Derakhshandeh<sup>2</sup>, Silvia Armini<sup>2</sup>, Inge De Preter<sup>2</sup>, Pieter Bex<sup>2</sup>, Lin Hou<sup>2</sup>, Johann W. Bartha<sup>1</sup>, Volker Neumann<sup>1</sup>, Sebastiaan Herregods<sup>2</sup>, Fuya Nagano<sup>2,3</sup>, Kenneth June Rebibis<sup>2</sup>, Andy Miller<sup>2</sup>, Ingrid De Wolf<sup>2</sup>, Gerald Beyer<sup>2</sup> and Eric Beyne<sup>2</sup>**  
*1) Department of Electrical and Computer Engineering, Technical University of Dresden, 01069 Dresden, Germany*  
*2) IMEC, Kapeldreef, 3001 Leuven, Belgium*  
*3) Department of Materials Science and Engineering, Tokyo Institute of Technology, Yokohama 226-8502, Japan*

12:15 – 12:35	<p><b>“3D SYSTEM INTEGRATION ON 300 MM WAFER LEVEL: HIGH-ASPECT-RATIO TSVS WITH RUTHENIUM SEED LAYER BY THERMAL ALD AND SUBSEQUENT COPPER ELECTROPLATING”</b></p> <p><b>Sebastian Killge<sup>a*</sup>, Irene Bartussek<sup>b</sup>, Marcel Junige<sup>a</sup>, Volker Neumann<sup>a</sup>, Christian Wenzel<sup>a</sup>, Matthias Böttcher<sup>b</sup>, Matthias Albert<sup>a</sup>, M. Jürgen Wolf<sup>b</sup>, Johann W. Bartha<sup>a</sup></b></p> <p><i>aTechnische Universität Dresden, Institute of Semiconductors and Microsystems (IHM), 01062 Dresden, Germany</i>  <i>bFraunhofer IZM-ASSID, Ringstrasse 12, 01468 Moritzburg, Germany</i></p>
12:35 – 13:45	LUNCH
12:45 – 14:15	COMMITTEE MEETING
13:45 – 15:30	POSTER SESSION
15:00 – 15:30	COFFEE BREAK

	SESSION 3: SILICIDES 1	CHAIR: C. WIEMER
15:30 – 15:50	<p><b>“PHASE FORMATION BETWEEN NI THIN FILMS AND GAAS SUBSTRATE”</b></p> <p><b>S. Rabhia<sup>b</sup>, C. Perrin-Pellegrino<sup>a*</sup>, S. Zhiou<sup>a</sup>, M.C. Benoudia<sup>b</sup>, M. Texier<sup>a</sup>, K. Hoummada<sup>a</sup></b></p> <p><i>a Institut Matériaux Microélectronique Nanosciences de Provence (IM2NP), Aix-Marseille Université (AMU), France</i>  <i>b Laboratoire Mines Métallurgie Matériaux (L3M), Ecole Nationale Supérieure des Mines et de la Métallurgie (ENSMM), Annaba, Algérie.</i></p>	
15:50 – 16:10	<p><b>“ON THE INHERITANCE OF CRYSTALLOGRAPHIC TEXTURE DURING THE NICKEL SILICIDE SOLID-PHASE REACTION.”</b></p> <p><b>F.A. Geenen<sup>a</sup>, E. Solano<sup>a</sup>, C. Mocuta<sup>b</sup>, J. Jordan-Sweet<sup>c</sup>, C. Lavoie<sup>c</sup>, C. Detavernier<sup>a</sup></b></p> <p><i>a Ghent University, CoCooN, krijgslaan 281/S1, 9000 Ghent, Belgium</i>  <i>b Synchrotron SOLEIL, L’orme des Merisiers, Saint Aubin – BP 48, Gif-sur-Yvette, France</i>  <i>c IBM T.J. Watson Research Center, Yorktown Heights, NY, USA</i></p>	
16:10-16:30	<p><b>“A MODIFIED SCHEME TO REDUCE THE SPECIFIC CONTACT RESISTIVITY OF NISI/SI CONTACTS BY MEANS OF DOPANT SEGREGATION TECHNIQUE”</b></p> <p><b>Ningyuan Duan<sup>1</sup>, Guilei Wang<sup>1</sup>, Jun Luo<sup>1,2*</sup>, Shujuan Mao, Henry Radamson<sup>1</sup>, Wenwu Wang<sup>1</sup>, Dapeng Chen<sup>1</sup>, Junfeng Li<sup>1</sup>, Chao Zhao<sup>1,2</sup>, and Tianchun Ye<sup>1,2</sup></b></p> <p><i>1)Key Laboratory of Microelectronic Devices &amp; Integrated Technology, Institute of Microelectronics, Chinese Academy of Sciences, Beijing 100029, China</i>  <i>2)University of Chinese Academy of Sciences (UCAS), Beijing 100049, P. R. China</i></p>	

19:00 – 22:00

*CONFERENCE DINNER*

**DINNER SPEECH:**

**“MICROTUBULAR NEMS FOR ON- AND OFF-CHIP APPLICATIONS”**

**O. G. SCHMIDT**

*LEIBNIZ INSTITUTE FOR SOLID STATE AND MATERIALS RESEARCH*

**TUESDAY, MARCH 28, 2017**

08:00 – 16:40 CONFERENCE REGISTRATION

09:00 – 15:30 POSTER EXHIBIT

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**SESSION 4: Metallization 1**

**CHAIR: S. E. SCHULZ**

**09:00 – 09:20 “THERMAL ALD OF METALLIC COPPER ON COBALT FOR ADVANCED INTERCONNECTS”**

**Colin Georgi<sup>1</sup>, Marcel Melzer<sup>2</sup>, Jörn Bankwitz<sup>2</sup>, Charan K. Nichenametla<sup>2</sup>, Heinrich Lang<sup>3</sup>, Stefan E. Schulz<sup>1,2</sup>**

*1 Fraunhofer Institute for Electronic Nanosystems, Technologie-Campus 3, 09126 Chemnitz, Germany*

*2 Chemnitz University of Technology, Center for Microtechnologies, 09126 Chemnitz, Germany*

*3 Chemnitz University of Technology, Institute of Chemistry, 09126 Chemnitz, Germany*

**09:20 – 09:40 „INVESTIGATION OF ISOLATION LINER AND CU DIFFUSION BARRIER BY (PE)ALD, (PE)CVD AND FAST FOR TSV APPLICATION.”**

**Fabien Piallat<sup>1\*</sup>, Laetitia Bonnet<sup>1</sup>, Julien Vitiello<sup>1</sup>**

*1KOBUS, 611 rue Aristide Bergès, Z.A. de Pré Millet, 38330 Montbonnot-Saint-Martin, France*

**09:40 – 10:00 “MULTISCALE SIMULATION OF BARRIER/SEED PVD”**

**Erik E. Lorenz<sup>1</sup>, Jörg Schuster<sup>1</sup>, Stefan E. Schulz<sup>1,2</sup>**

*1 Center for Microtechnologies, Chemnitz University of Technology, Germany*

*2 Fraunhofer Institute for Electronic Nano Systems, Germany*

**10:00 – 10:20 “PROCESS-ORIENTED MODELLING OF STRESSES AND MECHANICAL CONFINEMENT IN ADVANCED NANO-INTERCONNECTS; IMPLICATIONS FOR ELECTROMIGRATION”**

**Houman Zahedmanesh, Kristof Croes, Zsolt Tókei**

*imec, Kapeldreef 75, Leuven, 3001, Belgium*

10:20 – 10:45 COFFEE BREAK

- 10:45 – 11:05**      **“PHOSPHORUS REDISTRIBUTION DURING SILICIDATION FOR IN-SITU AND EX-SITU DOPED SILICON”**  
**M. LEMANG<sup>1,2,3</sup>, M. DESCOINS<sup>3</sup>, PH. RODRIGUEZ<sup>2</sup>, F. NEMOUCHI<sup>2</sup>, M. GRÉGOIRE<sup>1</sup> AND D. MANGELINCK<sup>3</sup>**  
*1STMICROELECTRONICS, 850, RUE JEAN MONNET, 38926, CROLLES CEDEX, FRANCE*  
*2 UNIV. GRENoble ALPES, F-38000 GRENoble, FRANCE*  
*CEA-, LETI, MINATEC CAMPUS, F-38054 GRENoble, FRANCE. 3 CNRS, AIX MARSEILLE UNIVERSITÉ, IM2NP (UMR 7334) FACULTÉ DE SAINT-JÉRÔME, F-13397 MARSEILLE CEDEX, FRANCE*
- 11:05 – 11:25**      **“COMBINED EFFECT OF PT AND W ALLOYING ELEMENTS ON THE NI-SILICIDE FORMATION”**  
**T. Luo<sup>a</sup>, D. Mangelinck<sup>b</sup>, M. Descoins<sup>a</sup>, M. Bertoglio<sup>b</sup>, N. Mouaici<sup>c</sup>, A. Hallén<sup>d</sup>, C. Girardeaux<sup>a</sup>**  
*a Aix-Marseille Univ, CNRS, IM2NP, Faculté Saint Jérôme, Case 142, 13397 Marseille Cedex 20, France*  
*b CNRS, Aix-Marseille Univ, IM2NP, Faculté Saint Jérôme, Case 142, 13397 Marseille Cedex 20, France*  
*c National School of Mines and Metallurgy ENSMM-Annaba, Ex CEFOS Chaiba BP 233 RP Annaba, W129, Sidi Amar, Algeria*  
*d KTH Royal Institute of Technology, School of Information and Communication Technology (ICT), SE-164 40 Kista-Stockholm, Sweden*
- 11:25 – 11:45**      **“DEGRADATION MECHANISM OF NI<sub>1-X</sub>PTX (0 < X < 0.15) GERMANOSILICIDES: EXPERIMENTS AND MODELLING”**  
**Dominique Mangelinck<sup>1,a</sup>, Emilie Bourgot<sup>1,2,3</sup>, Patrice Gergaud<sup>2</sup>, Fabrice Nemouchi<sup>2</sup>, Magali Gregoire<sup>3</sup>, Marion Descoins<sup>1</sup>, Xipeng Tan<sup>1</sup>**  
*1 CNRS, Aix Marseille Université, IM2NP (UMR 7334) Faculté de Saint-Jérôme, F-13397 Marseille Cedex, France*  
*2 Univ. Grenoble Alpes, F-38000 Grenoble, France CEA-, LETI, MINATEC Campus, F-38054 Grenoble, France. 3STMICROELECTRONICS, 850, rue Jean Monnet, 38926, Crolles cedex, France*
- 11:45 – 12:05**      **“PIONEERING CHARACTERIZATION OF NI-BASED SILICIDES ON SIGE USING 3D FLUORESCENCE TOMOGRAPHY”**  
**P. Bleueta, E. Bourjota, Ph. Rodrigueza, P. Cloetensb, P. Gergauda, F. Nemouchia**  
*a Univ. Grenoble Alpes, F-38000 Grenoble, France*  
*CEA, LETI, MINATEC Campus, F-38054 Grenoble, France.*  
*b European Synchrotron Radiation Facility, 38043, Grenoble Cedex 9, France*
- 12:05 – 13:25**      LUNCH

- 13:25 – 14:00** **INVITED: „DIRECT CORRELATION BETWEEN MATERIAL STRUCTURE AND ELECTRONIC/MECHANICAL PROPERTIES OF POLYMER FILMS ON HARD AND STRETCHABLE SUBSTRATES”**
- Souren Grigorian**  
*University of Siegen (Germany)*
- 14:00 – 14:20** **“ELABORATION AND CHARACTERIZATION OF A STRETCHABLE AND FLEXIBLE ULTRA-THIN SEMI-CONDUCTOR FILM”**
- P. Montméat a, c, S. Tardif b, c, T. Enot a, c, G. Enyedi a, c, F. Rieutord b, c and F. Fournel a, c**  
a- CEA, LETI, MINATEC Campus, 17 rue des Martyrs, F-38054 Grenoble, France  
b- CEA, INAC, MINATEC Campus, 17 rue des Martyrs, F-38054 Grenoble, France  
c- Univ. Grenoble Alpes, F-38000 Grenoble, France
- 14:20 – 14:55** **INVITED: “LIQUID METAL INTERCONNECTS AND THERMAL ELASTOMER PACKAGING FOR SOFT AND STRETCHABLE SYSTEMS”**
- SEUNG HEE JEOUNG**  
*UPPSALA UNIVERSITY, SWEDEN*
- 14:55 – 15:20** **COFFEE BREAK**

- 15:20 – 15:40** **“COMPOSITION AND PHASE SEQUENCE OF NI-INGAAS INTERMETALLICS: AN IN SITU XRD AND ATOM PROBE TOMOGRAPHY STUDY”**
- S. Zhiou<sup>a,b\*</sup>, Ph. Rodriguez<sup>a</sup>, F. Nemouchi<sup>a</sup>, C. Perrin-Pellegrino<sup>b</sup>, P. Gergaud<sup>a</sup> and K. Hoummada<sup>b</sup>**  
*A Univ. Grenoble Alpes, F-38000, France ; CEA, LETI, MINATEC Campus, F-38054 Grenoble, France.*  
*B IM2NP, CNRS/Aix-Marseille University, Faculté des Sciences de Saint-Jérôme case 142, 13397 Marseille, France*
- 15:40 – 16:00** **“KISSINGER KINETS ANALYSIS OF NI/INGAAS/INP SOLID STATE REACTIONS THROUGH 3D RSM MEASUREMENTS”**
- J. Channagiri<sup>1</sup>, S. Zhiou<sup>1,2</sup>, P. Rodriguez<sup>1</sup>, F. Nemouchi<sup>1</sup>, N. Blanc<sup>3,4</sup>, N. Boudet<sup>3,4</sup>, P. Gergaud<sup>1</sup>**  
*1Univ. Grenoble Alpes, F-38000 Grenoble, France; CEA, LETI, MINATEC Campus, F-38054 Grenoble, France*  
*2IM2NP, CNRS/Aix-Marseille University, Faculté des Sciences de Saint-Jérôme, case 142, 13397 Marseille, France.*  
*3,4Univ. Grenoble Alpes, Inst. NEEL, F-38042 Grenoble; CNRS, Inst. NEEL, F-38042 Grenoble, France*

16:00 – 16:20

**“IN SITU COMBINED X-RAY DIFFRACTION AND OPTICAL CURVATURE MEASUREMENTS TO STUDY MICROSTRUCTURE AND STRESS INDUCED DURING THE CRYSTALLIZATION OF GETE THIN FILMS”**

**M. Gallard<sup>1,2</sup>, M. S. Amara<sup>1</sup>, F. Lauraux<sup>1</sup>, C. Guichet<sup>1</sup>, M.-I. Richard<sup>1,5</sup>, S. Escoubas<sup>1</sup>, C. Mocuta<sup>2</sup>, P. Noé<sup>3</sup>, C. Sabbione<sup>3</sup>, F. Hippert<sup>4</sup>, M. Putero<sup>1</sup>, N. Burle<sup>1</sup>, O. Thomas<sup>1</sup>**

*1 Aix-Marseille Université, CNRS, IM2NP UMR 7334, Campus de St-Jérôme, 13397 Marseille, France*

*2 Synchrotron SOLEIL, l'Orme des Merisiers, Saint-Aubin–BP 48, 91192 Gif-sur-Yvette, France*

*3 Université Grenoble Alpes, CEA-LETI, MINATEC, 17 rue des Martyrs, 38054 Grenoble, France*

*4 LNCMI, CNRS-UGA-UPS-INSA, 25 rue des Martyrs, 38042 Grenoble, France*

*5 ID01/ESRF, The European Synchrotron, 71 rue des Martyrs, 38043 Grenoble, France*

17:30 – 21:00

NETWORKING EVENT:

VISIT OF THE THE VW TRANSPARENT FACTORY “DIE GLÄSERNE MANUFAKTUR” AND DINNER IN THE ADJACENT RESTAURANT “PATTIS”

MEETING POINT: 16:50 HILTON HOTEL LOBBY (20-MINUTE WALK TO THE FACTORY)



WEDNESDAY, MARCH 29, 2017

08:00 – 14:00

CONFERENCE REGISTRATION

SESSION 8: NANOSCALE DEVICES

CHAIR: D. ERBETTA

08:45 – 09:05

**“IN-BASED CHALCOGENIDE NANOWIRES FOR ULTRA-SCALDED PHASE CHANGE MEMORY APPLICATIONS”**

**C. Wiemer<sup>1</sup>, S. Selmo<sup>1,2</sup>, R. Cecchini<sup>1</sup>, S. Cecchi<sup>1</sup>, M. Fanciulli<sup>1,2</sup>, E. Rotunno<sup>3</sup>, L. Lazzarini<sup>3</sup>, M. Rigato<sup>4</sup>, D. Pogany<sup>4</sup>, A. Lugstein<sup>4</sup> and M. Longo<sup>1</sup>**

*1Laboratorio MDM, IMM-CNR, Unita di Agrate Brianza, Via C. Olivetti 2, 20864 Agrate Brianza, MB, Italy*

*2Dipartimento di Scienza dei Materiali, University of Milano Bicocca, Via R. Cozzi 53, 20126 Milano, Italy*

*3IMEM-CNR, Parco Area delle Scienze 37/A, I-43124 Parma, Italy*

*4Institute for Solid State Electronics, Vienna University of Technology, Floragasse 7, A-1040 Vienna, Austria*

09:05 – 09:25

**“RESISTIVE SWITCHING DYNAMICS IN MEMRISTIVE BIFEO<sub>3</sub> WITH METALLIC TOP AND BOTTOM ELECTRODES”**

**Nan Du<sup>1</sup>, Niveditha Manjunath<sup>1</sup>, Yuan Li<sup>1</sup>, Tiangui You<sup>2</sup>, Danilo Bürger<sup>1</sup>, Ilona Skorupa<sup>1,3</sup>, Damian Walczyk<sup>4</sup>, Christian Walczyk<sup>4</sup>, Thomas Schröder<sup>4</sup>, Stephan Menzel<sup>5</sup>, Eike Linn<sup>5</sup>, Rainer Waser<sup>5</sup>, Ramona Ecke<sup>6</sup>, Stefan E. Schulz<sup>6</sup>, Oliver G. Schmidt<sup>1,7</sup>, Heidemarie Schmidt<sup>1</sup>**

*1)Faculty of Electrical and Information Engineering, TU Chemnitz*

*2) State Key Laboratory of Functional Material for Informatics, Shanghai Institute of Microsystem and Information Technology, CAS, Shanghai*

*3) Institute of Ion Beam Physics and Materials Research, HZDR*

*4) Leibniz-Institut für innovative Mikroelektronik, IHP*

*5) Peter Grünberg Institut, Forschungszentrum Jülich*

*6)Fraunhofer-Institut für Elektronische Nanosysteme, Chemnitz*

*7) Institute for Integrative Nanosciences, IFW Dresden*

09:25 – 09:45

**“SIMULATION OF RECONFIGURABLE FIELD-EFFECT TRANSISTORS: IMPACT OF THE NIS<sub>2</sub>-SI INTERFACES, CRYSTAL ORIENTATION, AND STRAIN”**

**Florian Fuchs<sup>1,2,3,4</sup>, Jörg Schuster<sup>2,4,5</sup>, Sibylle Gemming<sup>1,2,3</sup>**

*1 Helmholtz-Zentrum Dresden-Rossendorf, 01314 Dresden*

*2 Center for Advancing Electronics Dresden, 01062 Dresden*

*3 Institute of Physics, TU Chemnitz, 09107 Chemnitz*

*4 Fraunhofer Institute for Electronic Nano Systems, 09126 Chemnitz*

09:45 – 10:05

**“MEMRISTIVE BFO WITH METALLIC ELECTRODES AS ARTIFICIAL SYNAPSE IN MACHINE LEARNING CIRCUITS”**

**Mahdi Kiani<sup>1</sup>, Nan Du<sup>1,4</sup>, Christian G. Mayr<sup>2</sup>, Danilo Bürger<sup>1,4</sup>, Ilona Skorupa<sup>1,3</sup>, Ramona Ecke<sup>4</sup>, Stefan E. Schulz<sup>4,5</sup>, Oliver G. Schmidt<sup>1,6</sup>, Heidemarie Schmidt<sup>1,4</sup>**

*1Materials Systems for Nanoelectronics, Chemnitz University of*

*Technology, Chemnitz, Germany— 2Highly-parallel VLSI systems and*

*Neuro-Microelectronics, Technische Universität Dresden, Dresden, Germany —3Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research, Dresden, Germany —4Fraunhofer Institute for Electronic Nano Systems, Chemnitz, Germany— 5Chemnitz University of Technology, Center for Microtechnologies, Chemnitz, Germany— 6Institute for Integrative Nanosciences, IFW Dresden, Dresden, Germany*

10:05 – 10:25

**“WAFER-LEVEL INTEGRATION OF CARBON NANOTUBES INTO MICRO-ELECTRO-MECHANICAL SYSTEMS”**

**Jens Bonitz<sup>1</sup>, Sascha Hermann<sup>1</sup>, Steffen Hartmann<sup>2</sup>, Simon Böttger<sup>1</sup>, Bernhard Wunderle<sup>2</sup>, Stefan E.Schulz<sup>1,3</sup>**

*1 Chemnitz University of Technology, Center for Microtechnologies*

*2 Chemnitz University of Technology, Materials and Reliability of Microsystems*

*3 Fraunhofer Institute for Electronic Nano Systems (ENAS), Chemnitz*

10:25 - 10:50

COFFEE BREAK

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**SESSION 9: DIELECTRICS & METALLIZATION 2**

**CHAIR: S. E. SCHULZ**

10:50 – 11:25

**INVITED: “PORE PROTECTION TECHNIQUES FROM ROOM- TO CRYO-TEMPERATURE PROCESSING”**

**Jean-Francois de Marneffe**

*imec*

11:25 – 11:45

**“FIRST-TIME IN SITU OBSERVATION OF POLYMERIZATION AND DAMAGE DURING ULK ETCHING”**

**Micha Haase<sup>1</sup>, Marcel Melzer<sup>2</sup> and Stefan E. Schulz<sup>1,2</sup>**

*1Fraunhofer Institute for Electronic Nano Systems ENAS, Technologie-Campus 3, D-09126 Chemnitz, Germany*

*2Chemnitz University of Technology, Center for Microtechnologies, Reichenhainer Strasse 70, D-09107 Chemnitz, Germany*

11:45 – 12:05

**“IN-VACUO PHOTOEMISSION STUDIES OF THE CHEMICAL INTERACTIONS OF MANGANESE METAL WITH SELF-ASSEMBLED MONOLAYER (SAM) TERMINATED SIO<sub>2</sub> AND SPIN-ON-GLASS (SOG) DIELECTRICS FOR BARRIER LAYER APPLICATIONS.”**

**A. Brady-Boyd<sup>1</sup>, S. Armini,<sup>2</sup> G. Hughes,<sup>1</sup> R. O'Connor<sup>1</sup> and J. Bogan<sup>1</sup>**

*1School of Physical Sciences, Dublin City University, Dublin 9, Ireland.*

*2IMEC, B-3001 Heverlee, Leuven, Belgium.*

12:05 – 12:40

**INVITED: “TRENDS IN SCALING THE CU METALLIZATION”**

**Marleen H. van der Veen\*, N. Jourdan, V. Vega Gonzalez, K.**

**Vandersmissen, C. J. Wilson, O. Varela Pedreira, J. Bömmels, H. Struyf, Z.**

**Tókei**

*imec, Kapeldreef 75, 3001 Leuven, Belgium*

**12:40 – 13:00**

**“CHARACTERIZATIONS OF FLUORINE-FREE TUNGSTEN LINER AND ITS APPLICATION FOR PCRAM”**

**R. Famulok<sup>a</sup>, Ph. Rodriguez<sup>a</sup>, Y. Le Friec<sup>b</sup>, J.-Ph. Reynard<sup>b</sup>, K. Dabertrand<sup>b</sup>, B.-N. Bozon<sup>c</sup>, S. Favier<sup>a,b</sup>, Y. Mazel<sup>a</sup>, E. Nolot<sup>a</sup>, B. Previtali<sup>a</sup>, P. Gergaud<sup>a</sup>, F. Nemouchi<sup>a</sup>**

*a Univ. Grenoble Alpes, F-38000 Grenoble, France*

*CEA, LETI, MINATEC Campus, F-38054 Grenoble, France.*

*b STMicroelectronics, 850 rue Jean Monnet, BP 16, 38926 Crolles, France*

*c Applied Materials France, 864 chemin des Fontaines, 38190 Bernin, France*

**13:00 – 13:10**

**CLOSING REMARKS**

**13:10 - 14:45**

*LUNCH*