SESSION ED9.1: Low-K Materials I
Session Chairs: Mikhail Baklanov and Jeffery Bielefeld
Tuesday Morning, April 18, 2017
PCC North, 100 Level, Room 128 B

10:30 AM *ED9.1.01
Boron-Based Solids for Advanced Interconnect Applications Michelle M. Paquette; University of Missouri–Kansas City, United States.

11:00 AM *ED9.1.02
Material Innovations for Future BEOL Interconnects E. T. Ryan; GLOBALFOUNDRIES, United States.

11:30 AM ED9.1.03
Metal-Organic Frameworks as Gap Filling Low-K Dielectric Material in Advanced Interconnects Mikhail Krishtab1, 2; ‘imec, Belgium; ‘KU Leuven, Belgium.

11:45 AM ED9.1.04
Silica Aerogel Low-K Films towards Inter Layer Dielectric (ILD) Ashok M. Mahajan; North Maharashtra University, India.

SESSION ED9.2: Memory Applications
Session Chairs: Vincent Jousseaume
John Zhang
Tuesday Afternoon, April 18, 2017
PCC North, 100 Level, Room 128 B

1:30 PM *ED9.2.01
The N3XT 1,000× of Computing Energy Efficiency H.-S. Philip Wong; Stanford University, United States.

2:00 PM ED9.2.02
Mechanism for Bipolar Resistive Switching in Annealed GO Thin Films Pooja Saini; University of Delhi, India.

SESSION ED9.3: Advanced Integration
Session Chairs: Eiichi Kondoh and Chen Wu
Tuesday Afternoon, April 18, 2017
PCC North, 100 Level, Room 128 B

3:00 PM *ED9.3.01
Selective Surface Modification for ALD and SAM Deposition Yves J. Chabal; University of Texas at Dallas, United States.

3:30 PM *ED9.3.02
New Material and Integration Innovations to Enable Advanced Interconnect Scaling Larry Zhao; Lam Research, United States.

4:15 PM ED9.3.04
Integration of Ultralow-K Dielectrics Using a Template Replacement Approach Liping Zhang1, 2; ‘imec, Belgium; ‘KU Leuven, Belgium.

4:30 PM ED9.3.05
Periodic Mesoporous Organosilica Films for Low-K Application— Promises and Challenges Murad A. Redzheb1, 2; ‘Gent University, Belgium; ‘imec, Belgium.

4:45 PM ED9.3.06
Thermal Stability of Low-K Dielectrics for 3D Sequential Integration Sylvain Beaurepaire1, 2, 3; Université Grenoble Alpes, France; ‘CEA LETI MINATEC Campus, France; ‘LTM UGA/CNRS/CEA, France.

SESSION ED9.4: Poster Session
Tuesday Afternoon, April 18, 2017
8:00 PM - 10:00 PM
Sheraton, Third Level, Phoenix Ballroom

ED9.4.01
Atomic Layer Deposition of Boron Carbide for Interconnect Applications Lauren M. Dorsett; University of Missouri–Kansas City, United States.

ED9.4.02
Plasma Enhanced Chemical Vapor Deposition of Al2O3 Films Using Dimethylaluminum Isopropoxide without Additional Oxygen Sources Wonin Ban; Sungkyunkwan University, Korea (the Republic of).

ED9.4.03
Electrical Properties of Low-K SiCOH Films Deposited with the Phenyltrimethoxysilane Single Precursor Sunyeol Kwon; Sungkyunkwan University, Korea (the Republic of).

ED9.4.04

ED9.4.05
Effect of Carbon Bridge Content on Spin-On Copolymer PMO Films K. Vorotiiov; Moscow Technological University, Russian Federation.
SESSION ED9.5: Integration and Metallization
Session Chairs: Jeffery Bielefeld and Larry Zhao
Wednesday Morning, April 19, 2017
PCC North, 100 Level, Room 128 B

8:00 AM *ED9.5.01
CMP Challenges for Advanced Technology Nodes John H. Zhang;
GLOBALFOUNDRIES, United States.

8:30 AM ED9.5.02
Controlling the Microstructure of Electroless Cobalt for Semiconductor
Interconnect Applications Kevin Musick¹,²; SUNY Polytechnic Institute,
United States; ²University at Albany, State University of New York, United
States.

8:45 AM ED9.5.03
Insight into the Molecular Structure of Amino-Copper (II)
Formates in Forming High Conductivity Copper Films for Printable
Electronics Chantal Paquet; National Research Council of Canada, Canada.

9:00 AM ED9.5.04
Etching of Transition Metals (Co, Ni, Fe, Pt) Using Supercritical
Fluids Eiichi Kondoh; University of Yamanashi, Japan.

9:15 AM ED9.5.05
Pore Surface Grafting of Porous Low-K Dielectrics by Selective
Polymers Askar Rezvanov¹,²,³; ¹imec, Belgium; ²Moscow Institute of Physics
and Technology, Russian Federation; ³Molecular Electronics Research Institute,
Russian Federation.

9:30 AM BREAK

SESSION ED9.6: Novel Processing Methods
Session Chairs: Yves Chabal and Eiichi Kondoh
Wednesday Morning, April 19, 2017
PCC North, 100 Level, Room 128 B

10:00 AM *ED9.6.01
3D Sequential Integration—Opportunities and Challenges in Low
Temperature Process Modules Claire Fenouillet-Beranger; CEA/LETI,
France.

10:30 AM ED9.6.02
Self-Aligned Growth of 3D Nano-Bridge-Based Interconnects by Gas
Phase Electrodeposition Leslie Schlag; TU Ilmenau FG Nanotechnologie,
Germany.

10:45 AM ED9.6.03
The Effects of Organic Acids on Electrodeposited Cu Films in Sub-Micron
Trenches Tyler Pounds; Johns Hopkins University, United States.

11:00 AM ED9.6.04
The Impact of Solute Segregation on Grain Boundaries in Dilute Cu
Alloys Takanori Tsunematsu¹; ¹State University of New York Polytechnic
Institute, United States; ²SUMCO Corporation, Japan.

11:15 AM ED9.6.05
Growth and Characterization of Ultrathin Conformal Nickel Films by
Plasma-Enhanced Atomic Layer Deposition Pouyan Motamedi¹,²; ¹National
Institute for Nanotechnology, Canada; ²University of Alberta, Canada.

11:30 AM ED9.6.06
A Comprehensive Comparison of Scanning Laser Annealing and
Microwave Annealing for Ion Implanted Si Joe Hillman; Universal Laser
Systems, United States.

11:45 AM ED9.6.07
Interface-Controlled Carrier Transport in Metal-Lutetium Oxide-Metal
Structures Deposited by Electron-Beam Evaporation Technique Khalid
Mahmood; Government College University Faisalabad, Pakistan.

1:30 PM *ED9.7.01
Establishing the Relationship between Low-K Dielectric Properties and
Intrinsic Conduction and Degradation Mechanisms Chen Wu; imec,
Belgium.

2:00 PM ED9.7.02
Significant Reduction in Plasma Induced Damaged in Porous Low-K
Material Using Spin-On Pore Protection Coatings Lin Zhang; SBA
Materials Inc., United States.

2:15 PM ED9.7.03
Experimental Study of Plasma-Induced Damage in Cryogenic Etching of
Porous Low-K Dielectrics in CF₃, Br and CF₄ Askar Rezvanov¹,²; ¹Moscow
Institute of Physics and Technology, Russian Federation; ²Molecular
Electronics Research Institute, Russian Federation.