15:00 1202 Observation of Conductive Filament in CBRAM at Switching Moment – S. Muto, R. Yonesaka, A. Tsurumaki-Fukuchi, M. Arita, and Y. Takahashi (Hokkaido University)

15:20 1203 Direct Evidence for the Role of Oxygen Vacancy Configuration for Oxide-Based Resistive Switching Devices – R. Schmitt, J. Spring, R. Korobko (Electrochemical Materials ETH Zurich), and J. L. M. Rupp (Electrochemical Materials ETH Zurich, Electrochemical Materials, MIT)

15:40 Break

16:00 1194 (Invited) Resistive States in Strontium Titanate Thin Films – M. Kubieck (TU Wien)

16:30 1205 (Invited) Is Ion Migration Needed for Resistance Memory and Memristor? – I. W. Chen (U Penn, Dept Materials Science & Engineering)

17:00 1206 Two Stable Switching Modes with Opposite Polarity in Pt/TiOx/ITO Cells Based on Concurring Phenomena Close to the Pt/TiO2 Interface – S. Hoffmann-Eifert (PGI and JARA-Fit, Forschungszentrum Jülich GmbH, Germany), H. Zhang (Forschungszentrum Jülich GmbH), S. J. Yoo, C. S. Hawng (Seoul National University), C. La Torre (RWTH Aachen University), S. Menzel (Forschungszentrum Jülich GmbH), and D. Wouters (RWTH Aachen University)

17:20 1207 In-Situ Electron Microscopy of Cu Movement in Mo2O3/Al2O3 Bilayer CBRAM during Cyclic Switching Process – R. Ishikawa, S. Hirata, A. Tsurumaki-Fukuchi, M. Arita, Y. Takahashi (Hokkaido University), M. Kudo (Kyusyu University), and S. Matsumura (The Ultramicroscopy Research Center, Kyushu University)

11:20 1239 (Invited) Advances in SiC and GaN Power Device Development and Future Directions – T. J. Anderson (U.S. Naval Research Laboratory), K. D. Hobart (Naval Research Laboratory), J. K. Hite (U.S. Naval Research Laboratory), L. E. Luna (US Naval Research Laboratory), and F. J. Kub (Naval Research Laboratory)

Power Electronics II – 13:30 – 14:40
Co-Chairs: Rachael L. Myers-Ward and Andrew A. Allerman

13:30 1240 (Invited) Thermo-Mechanical Reliability Challenges in the Heterogeneous Integration and Packaging of Wide Bandgap Semiconductors – T. Jiang (University of Central Florida)

14:00 1241 (Invited) Controlling Materials Defects for SiC Power Devices – R. E. Stahlbush (U. S. Naval Research Laboratory) and N. A. Mahdik (U.S. Naval Research Laboratory)


14:50 Break

15:10 1243 (Invited) A Discussion on the Latest Performance of GaN-Based Vertical Devices and the Paths Forward – S. Chowdhury (University of California, Davis)

15:40 1244 (Invited) Development of III-Nitride Bipolar Transistor Switches and Rectifiers – S. C. Shen, R. D. Dupuis, T. Detchprohm (Georgia Institute of Technology), J. H. Ryoo (University of Houston), J. B. Chaiyasarikul, M. F. Ji, T. T. Kao, Y. C. Lee, Z. Lochner, and J. Kim (Georgia Institute of Technology) (Invited) Vertical GaN Devices Enabled By Selective Area P-Type Doping – A. D. Koehler, T. J. Anderson (Naval Research Laboratory), A. Nath (George Mason University), A. G. Jacobs, M. J. Tadjar, B. Fegelski (U.S. Naval Research Laboratory), M. S. Gooray (University of California, Los Angeles), K. D. Hobart, and F. J. Kub (Naval Research Laboratory)

16:10 1245

Prince George Exhibit Hall D/E, Gaylord National Resort and Convention Center

Power Electronics I – 08:30 – 11:50
Co-Chairs: Jennifer H Hite and Travis J Anderson

08:30 1235 (Keynote) Accelerating Commercialization of SiC Power Devices through Low-Cost US Manufacturing – V. Veliaida (PowerAmerica)

09:10 1236 (Keynote) Navy Application of Silicon Carbide (SiC) Wide Bandgap (WBG) Semiconductors Enabling Future Power and Energy Systems – L. J. Petersen (Office of Naval Research)

09:50 Break


10:50 1238 (Invited) The Current Status and Future Prospects of SiC Devices – W. Sung (SUNY POLYTECHNIC INSTITUTE)