

Advances in Nonvolatile Memory Materials and Devices
Kempinski Hotel, Suzhou Industrial Park, China
July 11 – July 17, 2010

Sunday July 11, 2009

1:00pm – 10:00pm	Pickup attendees at Pudong & Hongqiao Airport, Shanghai Check-in Suzhou Kempinski Hotel	Registration Dinner buffet: 6:00 – 8:00pm
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Monday July 12, 2009 AM

9:00am – 11:30am	Tour Suzhou Industrial Park Hosted by Suzhou Municipal Science and Technology Bureau Meet in Hotel Lobby
12:00 – 1:30pm	lunch

Monday July 12, 2009 PM – Session 1

Session Chair: Dongmin Chen

1:45pm	Opening remarks
2:00pm	<i>1.1 Keynote Lecture – WHY RRAM ARE MEMRISTOR AND WHY IT MAKES A DIFFERENCE TO UNDERSTAND IT</i> R. Stanley William , Hewlett-Packard Lab. California USA
2:40pm – 3:00pm	<i>Coffee Break</i>
3:00pm	<i>1.2 Invited Talk - EMERGING MEMORY TECHNOLOGY REQUIREMENTS AND CHALLENGES</i> Gurtej Sandhu , Director, Micron Technology, Inc, USA
3:30pm	<i>1.3 Invited Talk - A PHYSICAL SWITCHING CONCEPT AND MATERIALS SET FOR A NEXT GENERATION POST-NAND FLASH MEMORY</i> Darrell Rinerson , CEO, Unity Semiconductor, USA
4:00pm 6:00pm	Free Exchange & Sports
6:00pm	Dinner

Tuesday July 13, 2009 – AM: Session 2

Session Chair: Gurtej Sandhu & Kurt Pfluger

9:00am	2.1 Invited Talk – Scalability of CMOS Compatible RRAM Kurt Pfluger , 4DS Corporation, USA
9:30am	2.2 RESISTIVE SWITCHING CHARACTERISTICS OF PT/Pr_{0.7}Ca_{0.3}MnO₃ (PCMO)/W MEMORY DEVICES IN A SUB-MICRON SCALE VIA-HOLE STRUCTURE X. J. Liu , Department of Material Science and Engineering, Gwangju Institute of Science and Technology (GIST), Korea
9:50am	2.3 ELECTRICAL CHARACTERIZATIONS OF PZT/PCMO HETEROSTRUCTURE BASED RESISTIVE MEMORY El Mostafa Bourim , Gwang-ju Institute of Science and Technology, Korea
10:10am	2.4 UNIPOLAR RESISTIVE SWITCHING IN OXYGEN-DEFICIENT PR_{0.7}CA_{0.3}MNO₃ JUNCTIONS WITH ASYMMETRIC ELECTRODE STRUCTURES Yu zhang , Song-Lin Li, Jie Li and Dong-Ning Zheng, Institute of Physics, Chinese Academy of Sciences, China
10:30am – 10:50am	Coffee Break
10:50am	2.5 Invited Talk - METAL OXIDE HETERO JUNCTION NONVOLATILE MEMORY Dongmin Chen , Institute of Physics, Chinese Academy of Sciences, China
11:20am	2.6 REVERSIBLE CHANGES BETWEEN BIPOLAR AND UNIPOLAR RESISTANCE SWITCHING IN A PT/SRTIOX/PT CAPACITOR Shin Buhm Lee , Seoul National University, Korea
11:40am	2.7 UNIPOLAR RESISTIVE SWITCHING BEHAVIOR IN CU/SRTIO₃/PT SANDWICHED STRUCTURE FOR NONVOLATILE MEMORY Xiaobing Yan , Jiang Yin, Yidong Xia, Zhiguo Liu, Nanjing University, China
12:00noon	Lunch

Tuesday July 13, 2009 – PM: Session 3

Session Chair: Joshua Yang & Micheal Kozicki

1:30pm	3.1 Invited Talk - OVERVIEW OF CATION-BASED RESISTIVE MEMORY Michael N. Kozicki , Arizona State University, US
2:00pm	3.2 INVESTIGATION OF UNIPOLAR RESISTIVE SWITCHING BEHAVIORS IN AMORPHOUS LUTETIUM OXIDE FILMS Xu Gao , Yidong Xia, Jiang Yin, Zhiguo Liu, Nanjing University, China

2:20pm	3.3 RESISTIVE SWITCHING CAUSED RESPECTIVELY BY AMORPHOUS-CRYSTALLINE PHASE CHANGE AND TWO TYPE OF ELECTROLYTIC MECHANISM IN AG10GE15TE75 FILMS Hanni Xu , Nanjing University, China
2:40pm – 3:00pm	Coffee Break
3:00pm	3.4 Invited Talk - APPLICATIONS AND PROPERTY ENGINEERING OF MEMRISTIVE NANODEVICES J. Joshua Yang , HP Labs, Palo Alto, CA 94304, USA
3:30pm	3.5 Invited Talk - GEOMETRICAL FEATURES OF THE CONDUCTION CHANNELS IN CER MATERIALS D. S. Shang , Institute of Physics, Chinese Academy of Sciences, China
4:00pm – 6:00pm	Sports and Networking
6:00pm	Dinner
Wednesday July 14, 2009 – AM: Session 4	
Session Chair: Wei-Chih Chien & Jifeng Kang	
9:00am	4.1 Invited Talk – OXIDE BASED RRAM: PHYSICAL BASED RESISTIVE SWITCHING MODELS AND MATERIAL SELECTION METHODOLOGY Jifeng Kang , Beijing University, China
9:30am	4.2 ENHANCED BIPOLAR RESISTIVE MEMORY SWITCHING USING NOVEL W/TA₂O₅/W STRUCTURE S. Maikap . Chang Gung University
9:50am	4.3 HIGH RESISTANCE STATE RETENTION CHARACTERISTIC OF TIO₂/ZnO STACK FOR RRAM APPLICATION Lifeng Liu , Beijing University, China
10:10 – 10:30am	Coffee Break
10:30am	4.4 Invited Talk - FULLY CMOS COMPATIBLE TUNGSTEN OXIDE RESISTIVE MEMORY Wei-Chih Chien , Emerging Central Lab, Macronix International, Taiwan
11:00am	4.5 CLOCKWISE AND COUNTERCLOCKWISE RESISTIVE SWITCHING IN WO_x THIN FILMS K. P. Biju , Department of Nanobio Materials and Electronics, Gwangju Institute of Science and Technology, Korea
11:20am	4.6 INTERFACIAL ENGINEERING IN AU/TA/PR_{0.7}CA_{0.3}MNO₃/PT RRAM DEVICE Z.Y. Liu , P.J. Zhang, Y. Meng, H.W. Zhao, D.M. Chen, Institute of Physics.Chinese Academy of Sciences, China
11:40am	4.7 RESISTIVE SWITCHING PROPERTIES OF METAL/PCMO/METAL JUNCTIONS Song-Lin Li, Jie Li, Yu Zhang; Dong-Ning Zheng Institute of Physics, Chinese Academy of Sciences, Beijing, China

12:00am – 1:30pm	Lunch
Wednesday July 14, 2009 PM & Eve :Sightseeing	
1:30pm – 8:30pm	Tour Ancient Suzhou Garden –
Thursday July 15 2009 AM – Session 5	
Session Chair: Eike Linn & Ming-Jinn Tsai	
9:00am	5.1 Invited talk - RELIABILITY OF HFOX-BASED RRAM Ming-Jinn Tsai , Industrial Technology Research Institute, Taiwan;
9:30am	5.2 UNIPOLAR RESISTIVE SWITCHING MECHANISMS IN MANGANITES YMO AND LPCMO Z. B. Yan , Nanjing National Laboratory of Microstructures, China
9:50am	5.3 A NEW RRAM CELL STRUCTURE TO ACHIEVE THE IMPROVED UNIFORMITY AND REDUCED RESET CURRENT Bin Gao , Institute of Microelectronics, Peking University, China
10:10am 10:30am	Coffee Break
10:30am –	5.4 Invited Talk – RESISTIVE SWITCHING FOR PASSIVE CROSSBAR ARRAY Eike Linn , RWTH Archen University, Germany
11:00am	5.5 MEMRISTIVE BEHAVIORS OF LINBO3 FERROELECTRIC DIODES Haitao Li , Yidong Xia, Bo Xu, Jiang Yin, Zhiguo Liu, Nanjing University, China
11:20am	5.6 SWITCHING SPEED AND RETENTION CHARACTERISTICS OF RESISTIVE SWITCHING OXIDE SINGLE CRYSTAL JUNCTIONS Dong-Wook Kim , Ewha Womans University, Korea
11:40am	5.7 MECHANISM FOR BIPOLAR RESISTIVE SWITCHING IN TRANSITION-METAL OXIDES María José Sánchez , Centro Atomico Bariloche and Instituto Balseiro, Bariloche, Rio Negro, Argentina
12:00 noon – 1:30pm	Lunch
Thursday July 15, 2010 PM – Session 6	
Session Chair: Hongwu Zhao	
1:30pm	6.1 Invited Talk - ATOMIC SWITCHES AND THEIR APPLICATIONS Tsuyoshi Hasegawa , National Institute for Materials Science, Japan

2:00pm	6.2 ONE-DIMENSIONAL PHASE-CHANGE NANOWIRES FOR MEMORY APPLICATION Xuhui Sun , Functional Nano and Soft Materials Laboratory, Soochow University, China
2:20pm	6.3 NUCLEOPHILIC SUBSTITUTION REACTION-BASED LAYER-BY-LAYER GROWTH OF SUPERPARAMAGNETIC NANOCOMPOSITE FILMS WITH HIGH NONVOLATILE MEMORY PERFORMANCE Younghoon Kim , Yongmin Ko, Jinhan Cho, Kookmin University, Korea
2:40pm	6.4 NONVOLATILE RESISTIVE SWITCHING MEMORY BASED ON GRAPHENE OXIDE AND AMORPHOUS CARBON Zhu-ge Fei , Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences, China
3:00 – 3:30pm	Coffee Break
3:30pm – 4:30pm	Panel discussion - WHERE DO WE GO FROM HERE
4:30pm	Closing Remark
6:00pm	Banquet
Friday July 16 2009, AM-PM: Visit World Expo in Shanghai	
8:30am	Bus depart for Shanghai
10:00am	Check in Shanghai hotel
11:00am -	Self guided tour of World expo
Conference Ends	