

<b>ISIF 2010</b>					
<b>Tutorial Session A, Sunday June 13, 2010</b>					
T: Tutorial, S: Sunday, A: Theoretical, B: Experimental					
Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>TSA 08:30</b>	<i>First Principles Calculations of Ferroelectricity</i>	Marco Fornari		Central Michigan University	Tutorial
<b>TSA 10:30</b>	<i>First Principles Calculations on phonon instabilities in Ferroelectrics</i>	Serge Nakhmanson		Argonne National Laboratory	Tutorial
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>TSA 13:30</b>	<i>Grid Computing</i>	David Swanson		University of Nebraska	Tutorial
<b>TSA 15:30</b>	<i>Transport Properties</i>	Julian Velez		University of Puerto Rico	Tutorial
<b>Tutorial Session B, Sunday June 13, 2010</b>					
<b>TSB 08:30</b>	<i>Artificial superlattices: Production and Characterization</i>	Matthew Dawber		Stonybrook University	Tutorial
<b>TSB 10:30</b>	<i>PFM and AFM techniques</i>	Seungbum Hong		Argonne national Laboratory	Tutorial
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>TSB 13:30</b>	<i>Optical spectroscopy techniques for ferroelectrics</i>	Andreas Ruediger		INRS, Canada	Tutorial
<b>TSB 15:30</b>	<i>Basics of Multifunctionals and Metamaterials</i>	Amar Bhalla		UTSA, Texas	Tutorial
<b>Registration</b>					
Sunday June 13, 2010; 15:00-18:00					
<b>Welcome Reception</b>					
Sunday June 13, 2010; 18:00-19:00					
<b>Presentations by</b>					
<b>Prof. Pradeep Fulay, NSF, Sunday June 13, 2010, 19:00-19:30</b>					
(Overview of NSF programs in Material Science & Engineering)					
<b>&amp;</b>					
<b>Dr. Jih-Fen Lei, NASA Glenn Research Center, Sunday June 13, 2010, 19:30-20:00</b>					
(Overview of NASA Research & Technology programs)					
<b>ISIF 2010</b>					
<b>Plenary Talks</b>					
I: Invited, P: Plenary, M: Monday, T: Tuesday, W: Wednesday					
Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday, June 14, 2010</b>					
<b>Chair: Mark Johnson (Naval Research Laboratory)</b>					
<b>IPM 08:00</b>	Non-volatile MRAM memories	Stuart Parkin		IBM San Jose	Plenary
<b>IPM 13:30</b>	Towards an Electric Control of Spintronics Devices	Agnes Bathelmy		University Paris -Sud	Plenary
<b>Tuesday, June 15, 2010</b>					
<b>Chair: Orlando Auciello (Argonne National Laboratory)</b>					
<b>IPT 08:00</b>	Magnetoelectric multiferroics- Controlling large polarization with magnetic fields	James F Scott		Univ. of Puerto Rico & Cambridge University	Plenary
<b>IPT 13:30</b>	Maturity and New Opportunities in Integrated Ferroelectrics and Functionalities	Carlos Araujo		Symetrix Corp.	Plenary
<b>Wednesday, June 16, 2010</b>					
<b>Chair: Felix Miranda (NASA Glenn Research Center)</b>					
<b>IPW 08:00</b>	Design Approach to Non-lead Relaxor Perovskites for Multifunctional Applications	Amar Bhalla		UTSA, Texas	Plenary
<b>IPW 13:30</b>	Ferroelectrics and Multifunctional Materials In Space	Robert Romanofsky		NASA Glenn Research Center	Plenary

# Session 1: Ferroelectric Materials : Theory and Experiments

Chair : S. Pamir Alpay (UCONN)  
Co-Chair: Husam Alshareef (KAUST)

## Room #1

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I1M 09:00</b>	Oxide Molecular Beam Epitaxy for High-quality Ferroelectric Thin Films	Sussane Stemmer	Bharat Jalan, Nicholas J. Wright, Junwoo Son & Roman Engel-Herbert	University of California	I
<b>I1M 09:30</b>	Low processing temperature of ferroelectric thin films: the key for future integration	Paula Maria Vilarinho		University of Aveiro	I
<b>O1M 10:00</b>	Advances on the Reduction of the Processing Temperature of ferroelectric thin films: The Photochemical Solution Deposition Approach	Ricardo Jiménez	Iñigo Bretos & M. Lourdes Calzada	Instituto de Ciencia de Materiales de Madrid	O
<b>O1M 10:15</b>	MOCVD growth of Bi (Zn1/2Ti1/2)O3-based ferroelectric thin films and their electrical properties	Shintaro Yasui		Tokyo Institute of Technology	O
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I1M 10:45</b>	Ferroelectricity in strained Ruddlesden-Popper Sr <sub>n+1</sub> Ti <sub>n</sub> O <sub>3n+1</sub> Phases	Nathan D. Orloff	Che-Hui Lee, Xiaoxing Xi, Craig J. Fennie, Ichiro Takeuchi, James C. Booth & Darell G. Schlom	National Institute of Standards and Technology; University of Maryland; Cornell University; The Pennsylvania State University;	I
<b>I1M 11:15</b>	Interface Engineered Nanostructures with Anomalous Dielectric Properties	Chonglin Chen		University of Texas at San Antonio	I
<b>O1M 11:45</b>	Ferroelectricity and Electroresistance in Nanoparticles, Nanowires and Cylindrical Nano-Shells	Janathan E. Spainer		Drexel University	O
<b>O1M 12:00</b>	Enhancement of Dielectric and Ferroelectric Properties in Donor Substituted Aurivillious SBT Ceramics	Indrani Coondoo	Neraj Panwar, AM Biradar	National Physical Laboratory	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I1M 14:30</b>	Complex Polarization States in Ferroelectric Nanowires	R. Ramprasad	G. Pilania	University of Connecticut	I
<b>I1M 15:00</b>	Asymmetric Displacement of hysteresis Loops and Smearing of the Transitions Point due to Space Charges in Ferroelectric Thin Films	I.B. Misirlioglu	M.B. Okatan & S.P. Alpay	Sabanci University; University of Connecticut	I
<b>O1M 15:30</b>	Putting the Groove back into Ferroelectric oxides: a prediction of Goldstone-like states in a layered perovskite with frustrated polarization	S.M. Nakhmanson	Ivan Naumov	Argonne National Laboratory; Hewlett-Packard Information and Quantum Systems Laboratory	O
<b>O1M 15:45</b>	Resistive Switching Properties of Epitaxial PZT Thin Films on (001) Si by RF Sputtering	Chun Wang		Carnegie Mellon University	O
<b>16:00 - 16:15</b>	<b>Coffee Break</b>				
<b>I1M 16:15</b>	Dissimilar Influence of Biaxial Strain on Phase Transition in Differently Oriented Epitaxial (Ba, Sr) TiO <sub>3</sub> Films	Tomoaki Yamada	T Kamo, T Iijima, D Su and Funakubo	Tokyo Institute of Technology	I
<b>I1M 16:45</b>	Size Induced Ferroelectricity in Binary Oxide Nanowires	Anna N. Morozovska	E.A. Eliseev, M.D. Glinchuk & R. Blinc	NAS of Ukraine; Jozef Stefan Institute (Slovenia)	I
<b>O1M 17:15</b>	"Holographic" integration for Photonics	Young-yuan Zhu	Yi-qiang Quin & Chao Zhang	Nanjing University	O
<b>O1M 17:30</b>	Dielectric Properties of Iron-Fluoride-Doped (Ba,Sr) TiO <sub>3</sub>	Wolfgang Menesklou	F. Paul, J.R. Binder & E. Ivers-Tifée	Karlsruhe Institute of Technology; University of Freiburg	O
<b>Tuesday June 15, 2010</b>					
<b>I1T 09:00</b>	Far-Infrared Soft-Mode Spectroscopy of SrTiO <sub>3</sub> Thin Films and Heterostructures	J. Petzelt	D. Nuzhnyy, P. Kuzel, S. Kamba	Institute of Physics (Czech Republic)	I
<b>O1T 09:30</b>	Ferroelectric and Piezoelectric Studies on Mo-Substituted SrBi <sub>2</sub> Ta <sub>2</sub> O <sub>9</sub> Ferroelectric Ceramics	Neeraj Panwar	Venkata S. Puli, Indrani Coondoo, RS Katiyar	University of Puerto Rico	O

<b>OIT 09:45</b>	Investigation on Divalent Metal Substituted Bismuth Titanate Ferroelectric Thin Films	Kan-Hao Xue	Carlos A. Paz de Araujo, Jolanta Celinska & Christopher McWilliams	University of Colorado at Colorado Springs	O
<b>OIT 10:00</b>	Structural, Dielectric and Magnetic Properties of $PbFe_{0.5}Nb_{0.5}O_3$	Margarita Correa	Ashok Kumar, RS. Katiyar	Universtiy of Puerto Rico	O
<b>OIT 10:15</b>	Room Temperature Ferromagnetic Behavior in Yb-Doped GaN Semiconductor	J. Wu		UPR	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P1M01</b>	55 Years of Positive Temperature Coefficient of Resistance (PTCR): A Short Review	Venketa S. Puli	Ram S. Katiyar	Universidad de Puerto Rico	P
<b>P1M02</b>	Thickness Dependence of the Dielectric Properties of Tunable Barium Zirconate Titanate Epitaxial Thin Films	Jofre Ventura	E. Langenberg, L.E. Coy, C. Ferrater, I. Fina, M.C. Polo, M. V. Garcia-Cuenca, L. Fabrega & M. Varela	Iniversitata de Barcelona; Instituto de Ciencia de Materiales de Barcelona	P
<b>P1M03</b>	Structural and Dielectric Properties of Manganese Modified Lead Zirconate Ceramics	Bal Govind Tiwari	R.N.P. Choudhary	Department of Physics and Meteorology	P
<b>P1M04</b>	Anisotropic ferro- and dielectric function in textured $i4Ti3O12$ ceramics by te solid-state reaction based on multiple calcination	Xiao-Bing Chen	Xiangyu Mao, Wei Wang & Jing Wu	Yangzhou University	P
<b>P1M05</b>	Crystallization and Dielectric Properties of Ferroelectric (PbSr)TiO3 Borosilicate Glass Ceramics with Addition of La2O3	C.R. Gautam	D. Kumar & O. Parkash	University of Lucknow; Banaras Hindu University (India)	P
<b>P1M06</b>	Effect of Deposition Temperature of TiO2 on the Piezoelectric Property of PbTiO3 Film Grown by PbO Gas Phase Reaction Sputtering	Jiyeon Kim	Seungbum Hong, Simon Buhlmann, Yunseok Kim, Moonkyu Park, Yong Kwan Kim, Kwangsoo No	Korea Advanced Institute of Science & Technology	P
<b>P1M07</b>	Ferroelectric Properties of Nanoscale Barium Titanate Thin Films	H. Basantakumar Sharma		Manipur university	P
<b>P1M08</b>	Ferroelectric Studies on sol-gel derived $Pb1-xCaxTiO3$	Arun Singh		Jamia Millia Islamia University	P
<b>P1M09</b>	Hyperfine Characterization of Dielectric States in $BaTi_{1-x}Hf_xO_3$	Alberto López García	Roberto E. Alonso	Instituto de Física La Plata	P
<b>P1M10</b>	Irradiation Effect on Photoelastic Coefficients in Ferroelectric $Li2Ge7O15$ Crystals	A.K. Bain	Prem Chand	Indian Institute of Technology	P
<b>P1M11</b>	Low temperature structural and electrical properties of chemical solution deposited Pr-doped $SrTiO3$ thin films on platinized silicon substrates	N.M. Murari	R. Thomas and R.S. Katiyar	University of Puerto Rico	P
<b>P1M13</b>	Size Effects of Ferroelectric Materials: Phenomenological Theory	Anna N. Morozovska	E.A.Eliseev	V. Lashkarev Institute of Semiconductor of Physics; Institute of Problems of Materials Science	P
<b>P1M14</b>	Structure and Electrical Properties of $Bi_{0.5}Na_{0.5}TiO_3$ (Li, Ta, Sb) Modified ( $K_{0.5}Na_{0.5}NbO_3$ ) Lead Free Ceramics	Amrita Singh	Ratnamala Chatterjee	IIT Delhi	P
<b>P1M15</b>	Studies on dielectric properties of $CaCu3Ti4O12$ thin films	Ajay Arora	Vandana Arora and Vinay Gupta	University of Delhi	P
<b>P1M16</b>	Study of Impedance in Ferroelectric $Li2Ge7O15$ Crystals	Ashim Bain	Prem Chand	Indian institute of Technology	P
<b>P1M17</b>	Study of Structural and electrical characterization of Ni/Nb modified $Bi2Ti2O7$	M.P.K. Sahoo	Mukul Pastor &R.N.P.Choudhary	Indian institute of technology Kharagpur	P
<b>P1M18</b>	Study on ferroelectric properties and residual stress of $Bi3.15Nd0.85Zr0.03O12$ thin films etched by inductively coupled plasma	Jianjun Li	Jia Li, Jun Yu	University of Electronic Science and Technology of China/Huazhong University of Science and Technology	P
<b>P1M19</b>	Sub-Micron Gap Capacitors using Ferroelectric Thin-Films	T. Price	E Benabe, T Weller, Y Emirov, A Kumar	University of South Florida	P
<b>P1M20</b>	The thicness effect of BLT buffer layer in PZT/BLT thin film	Jianjun Li	Xinyi Wen, Yunyi Wu, Jun Yu	University of Electronic Science and Technology of China/Huazhong University of Science and Technology	P

## Session 2: Multiferroics and Magnetoelectrics: Theory, Experiments

Chair: V. Nagarajan (UNSW)

Co-chairs: Premi Chandra (Rutger Univ.) & Julian Velev (UPR)

### Room #2

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday, June 14, 2010</b>					
<b>12M 16:15</b>	Electrical Property of LCMO Thin Film in LCMO/PMN-PT/TERFENOL-D Heterostructure	H.L.W. Chan	Y. Jiang, R.K. Zheng, G.Y. Gao, Y. Wang	The Hong Kon Polytechnic University	I
<b>O2M 16:45</b>	Depolarized Field in Rhombohedral BiFeO <sub>3</sub> Thin Films	CW Huang	CW Huang, YH Chu, J Wang, R. Ramesh, Lang Chen	Nanyang Technological University	O
<b>O2M 17:00</b>	Coexistence of Ferroelectric and Ferromagnetic properties at room temperature in Gd and Cr Co-substituted Bi <sub>4</sub> Ti <sub>3</sub> O <sub>12</sub> Thin Films	Ricardo Melgarejo	Reji Thomas & Ram S. Katiyar	Unviersidad de Puerto Rico	O
<b>O2M 17:15</b>	Multiferroic properties in Sm-Doped BiFeO <sub>3</sub> Thin Films prepared by Chemical Solution Deposition	CV Tomy	SK Singh, T Era, M Itoh, Amita Gupta	Department of Physics, Indian Institute of Technology Bombay, Mumbai, India	O
<b>O2M 17:30</b>	The thermooptic property of multiferroic BiFeO <sub>3</sub> films	Hiroimi Shima	Koichi Tsutsumi, Michio Suzuki, Toshiyasu Tadokoro, Hiroshi Naganuma, Takashi Iljima, Takashi Nakajima & Soichiro Okamura	Tokio University of Science; J.A. Woollam Japan; Techno-Synergy Inc.; Tohoku University; National Institute of Advanced Industrial Science and Technology	O
<b>Tuesday June 15, 2010</b>					
<b>12T 09:00</b>	Creating a Strong Ferroelectric Ferromagnet via Spin-Phonon Coupling	D.G. Schlom	J.H. Lee, L. Fang, E. Vlahos, X. Ke, Y.W. Jung, L. Fitting Kourkoutis, J.W. Kim, P. Ryan, T. Heeg, M. Roeckerath, V. Goian, M. Bernhagen, R. Uecker, P.C. Hammel, K.M. Rabe, S. Kamba, J. Schubert, J.W. Freeland, D.A. Muller, C.J. Fennie <sup>5</sup> , P. Schiffer <sup>4</sup> , V. Gopalan <sup>2</sup> , E. Johnston-Halperin	Cornell University, Penn State University; Ohio State University; Argonne National laboratory; research Center Julich Julich; Institute of Physics ASCR & Rutgers University	I
<b>12T 09:30</b>	Controlling Magnetization with Electric Field using BiFeO <sub>3</sub>	Junling Wang	Lu You, Ngeah Theng Chua, Rui Guo, Lang Chen, Kui Yao	Nanyang Technological University	I
<b>12T 10:00</b>	Novel Ferroicity by Design	Craig j Fennie		Cornell University	I
<b>10:30 - 10:45</b>	<i>Coffee Break</i>				
<b>12T 10:45</b>	Multifunctional Double Perovskite Thin Films and Heterostructures	Arunava Gupta		University of Alabama	I
<b>12T 11:15</b>	Magnetoelectric and Spin-Dependnet Transport Effects in Ferromagnet/ Ferroelectric Oxide Heterostructures and Interfaces	J.D. Burton		University of Nebraska; University of Missouri; National Synchrotron Light Source	I
<b>O2T 11:45</b>	Ferroelectric Resistive Switching Mechanism in BiFeO <sub>3</sub> Investigated by Conductive Atomic Force Microscopy and Piezoresponse Force Microscopy	Alessio Morelli	Florian Johann, Marin Alexe, Ionela Vrejoiu	Max Planck Institute of Microstructure Physics (Germany)	O
<b>O2T 12:00</b>	Impedance Spectroscopy and Ferroelectric Characterization of Ferromagnetic B-Site Ordered (Bi <sub>0.9</sub> La <sub>0.1</sub> ) <sub>2</sub> NiMnO <sub>6</sub> Thin Films	Eric Langengerg	JM Rebled, S. Estrade, I Fina, CJM Daumont, J Ventura, L E Coy, C Ferrater, M C Polo, M V Garcia-Cuenca, L Fabrega, F Peiro, B Noheda, M Varela, J Fontcuberta	University of Barcelona	O

<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>12T 14:30</b>	Integration of single phase Magneto-electric Multiferroic with Si for FeRAM applications	Ashok Kumar	J.F. Scott & Ram S. Katiyar	University of Puerto Rico, Rio Piedras Campus; Cambridge University	I
<b>12T 15:00</b>	Robust Isothermal Electric Control of Exchange Bias at Room Temperature	Christian Binek	Xi He, Yi Wang, N. Wu, A. Caruso, E. Vescovo, K.D. Belashchenki & P.A. Dowben	University of Nebraska; University of Missouri; National Synchrotron Light Source	I
<b>O2T 15:30</b>	Local Dynamics of Domain Growth under applied Bias using in SITU STM-(s)TEM	Albina Borisevich	HJ Chang, SV Kalinin, P Wu, SY Yang, P Yu, R Ramesh, LQ Chen, SJ Pennycook, A Borisevich	Oak Ridge National Laboratory	O
<b>O2T 15:45</b>	Local Enhancement of Magnetoelectric coupling observed using Magnetic Force Microscope	N.D. Mathur	M. Ghidini	University of Cambridge	O
<b>16:00 - 16:15</b>	<b>Coffee Break</b>				
<b>12T 16:15</b>	Atomic View of Ferroelectricity by Aberration-Corrected STEM/EELS: Polarization, Tilts and Electronic Structure	Albina Borisevich	HJ Chang, Pu Yu, R Ramesh, MP Oxley, S Okamoto, MK Niranjan, JD Burton, EY Tsymlal, Steve Pennycook, Sergei V Kalinin	Berkeley, California	I
<b>12T 16:45</b>	LABILE FERROELASTIC NANODOMAINS – A MEDIUM TOR FOR MAGNETO-ELECTRIC EFFECT	A.Varathrajan	Nagarajan Valanoor, Ichiro Takeuchi	Univ. Of Maryland/UNSW	I
<b>O2T 17:15</b>	Magnetic behavior of $\text{Bi}_{0.75}\text{Sr}_{0.25}\text{Fe}_{1-x}\text{Mn}_x\text{O}_3$ ( $x=0.0, 0.1$ )	Jesús m. Siqueiros	NS Almodovar, J Portelles, A Sosa, C Ostos, J Heiras, X Vendrell, L Mestres	Universidad Nacional Autónoma de México	O
<b>O2T 17:30</b>	Mixed Tetragonal & Rhombohedral Domain Structure in $\text{BiFeO}_3$ Thin Film with a strain-Driven Morphotropic Phase Boundary	Huang Chuanwei	CW Huang, YH Chu, J Wang, R. Ramesh, Lang Chen	Nanyang Technological University	O
<b>Wednesday, June 16, 2010</b>					
<b>12W 09:00</b>	Magnetism, Magnetoelectric Coupling and Ferroelectricity in Orthorhombic $\text{AMnO}_3$ , Single Domain Epitaxial Thin Films	J. Fontcuberta	X. Martí, I. Fina, L. Fàbrega & F. Sánchez	Institut de Ciència de Materials de Barcelona; Universitat Autònoma de Barcelona; Universitat de Barcelona	I
<b>O2W 09:30</b>	Phonon and magnon anomalies near the magnetic phase transitions in $\text{BiFeO}_3$ thin films	Ram Katiyar	Manoj Kumar Singh, RS Katiyar, and J.F. Scott	University of Puerto Rico	O
<b>O2W 09:45</b>	Dynamics of phase transitions and magnon-phonon coupling in $\text{BiFeO}_3$	R. Palai	R. Palai, R.S. Katiyar, H. Schmid, J.F. Scott	University of Puerto Rico, Rio Piedras Campus	O
<b>O2W 10:00</b>	Strain Induced Multiferrocity in $\text{EuTiO}_3$ Thin Films	Stanislav Kamba	V. Goian, M. Kempa, J.H. Lee & D.G. Schlom	Institute of Physics ASCR (Czech Republic); Cornell University	O
<b>O2W 10:15</b>	Dynamic magnetic and resistive effects on multiferroics $\text{PbZr}_{0.52}\text{Ti}_{0.48}\text{O}_3/\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3$ Superlattices	Sandra Dussan	Ashok Kumar, RS. Katiyar	University of Puerto Rico	O
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>12W 10:45</b>	Strain Tuning Multiferroic BIFEO3 Film Phases and Transitions	Ingrid Cañero Infante	B. Dupé, S. Lisenkov, I. Ponomareva, L. Bellaiche, G. Geneste, P.E. Janolin, S. Ravy, S. Petit, H. Béa, B. Warot-Fonrose, K. Bouzehouane, S. Fusil, E. Jacquet, M. Bibes, B. Dkhil, A. Barthélémy	CNRS, France	I
<b>12W 11:15</b>	Multiferroics Under Epitaxial Strain: The Case Of $\text{TbMnO}_3$	Christophe Daumont	Beatriz Noheda	Unité mixte de physique ; University of Groningen	I
<b>O2W 11:45</b>	Polarization-dependant electron transport through thin ferroelectric films and the influence of temperature, thickness and domains	Arthur P. Baddorf	Peter Maksymovych, Stephen Jesse, Pu Yu, Mark Huijben, Ramamoorthy Ramesh, Sergei V. Kalinin	Oak Ridge National Laboratory	O

<b>O2W 12:00</b>	Raman Study of Bi <sub>5</sub> FeTi <sub>3</sub> O <sub>15</sub> and Bi <sub>5</sub> Fe <sub>0.5</sub> Co <sub>0.5</sub> Ti <sub>3</sub> O <sub>15</sub>	Xiao-Bing Chen	Xiangyu Mao, Wei Wang & Xi. Hu	Yangzhou University	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>O2W 14:30</b>	On the low temperature anomalies of BiFeO <sub>3</sub>	Gustavo Catalan	G. Catalan <sup>1</sup> , J. Herrero-Albillos <sup>2</sup> , J. Alberto Rodriguez Velamazán <sup>3</sup> , D. Colson <sup>4</sup> , M. Viret <sup>4</sup> , J.F. Scott <sup>5</sup>	Universidad de Barcelona	O
<b>O2W 14:45</b>	Effective control of polarity in Bi <sub>0.9</sub> La <sub>0.1</sub> FeO <sub>3</sub> thin films by dopant-related internal bias	Yang Wang	Weigang Chen, Lang Chen, Junling Wang & John Wang	Nanyang Technological University; National University of Singapore	O
<b>I2W 15:00</b>	Domain Wall Nanoelectronics	R. Ramesh		University of California	I
<b>O2W 15:30</b>	Multiferroic properties in Co-Doped BiFeO <sub>3</sub> Thin Films	M.S. Tomar	D. Barrionuevo, and S.P. Singh	University of Puerto Rico, Mayaguez Campus	O
<b>O2W 15:45</b>	Organic Multiferroic Tunnel Junctions with Ferroelectric Poly(vinylidene fluoride) Barriers	Juan M. Lopez-Encarnación	J.D. Burton, Yang Sung, Evgeny Y. Tsybal & Julian P. Velev	University of Puerto Rico Rio Piedras Campus; University of Nebraska	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P2M01</b>	Anomalous enhancement in magnetization in BiFeO <sub>3</sub> /CoFe <sub>2</sub> O <sub>4</sub> heterostructured thin films	S. Dussan	Manoj Kumar Singh, RS Katiyar	University of Puerto Rico	P
<b>P2M02</b>	Dielectric properties of multiferroic Co <sub>3-x</sub> MnxO <sub>4</sub> ceramics	Monika Tomar	P.L. Meena, Monika Tomar, K. Sreenivas, Ravi Kumar	University of Delhi	P
<b>P2M03</b>	Multiferroic Characteristics in Artificial BST/LSMO Superlattices Grown in Different Substrates by Pulsed Laser Deposition	Ricardo Martínez	A Kumar, R Palai, RS Katiyar	University of Puerto Rico	P
<b>P2M04</b>	Enhanced Magnetization and Magnetoelectric Coupling in Hydrogen Treated Hexagonal YMnO <sub>3</sub>	Anurag Gaur	Nagesh Kumar, G. D. Varma	National Institute of Technology Kurkshetra (India)	P
<b>P2M05</b>	Ferroelectric properties and Conduction mechanisms of Multiferroic BiFeO <sub>3</sub> films grown by pulsed laser deposition	M.C. Chen	A.Q. Jiang, Z.H. Chen & X.B. Liu	Fudan University	P
<b>P2M06</b>	Improved Magnetic and dielectric Properties of Single Phase Nd Substituted BiFeO <sub>3</sub> Nano Crystalites	K. Singh	M.Singh, Ashish Gautam, K. Sen. R.K. Kotnala	Himanchal Pradesh University Shimla	P
<b>P2M07</b>	Novel room temperature multiferroic PZT/PFT: A comparison with epitaxial thin films	Dilsom A. Sanchez	Ashok Kumar, RS. Katiyar	University of Puerto Rico	P
<b>P2M08</b>	Influence of the Magnetic Phase on Magnetoelectric Coupling in PMN-PT/ferrite Particulate Composites	Ducinei Garcia	F. L. Zabetto, A.J. Gualdi, A.J.A. Oliveira, J.A. Eiras	Ferroelectric Ceramics Group, Federal University of Sao Carlos, Brazil	P
<b>P2M09</b>	Raman Scattering at Phase Separation in Semiconductor Magnetite-Multiferroic Eu <sub>0.8</sub> Ce <sub>0.2</sub> Mn <sub>2</sub> O <sub>5</sub>	Sergei Lushnikov		Ioffe Physical Technical Institute	P
<b>P2M10</b>	Magnetoelectric contribution to magnetoelastic coupling in Pb(Fe <sub>1/2</sub> Nb <sub>1/2</sub> )O <sub>3</sub> multiferroics ceramics	Barbara Fraygola	N. Frizon, M.H.Lente, D. Garcia and J.A. Eiras	Ferroelectric Ceramics Group, Federal University of Sao Carlos, Brazil	P
<b>P2M11</b>	Influence of the microstructural characteristics on ferroelectric, magnetic and magnetoelectric properties in PMN-PT/ferrite particulate composites	Fabio Zabetto	F. L. Zabetto, A.J. Gualdi, A.J.A. Oliveira, J.A. Eiras and D. Garcia	Ferroelectric Ceramics Group, Federal University of Sao Carlos, Brazil	P

## Session 3: Nanoscale Ferroelectrics and 3-D Geometries for High Density Memories

Chair: Alex Gruverman, Nebraska

Co-Chairs: Gustau Catalan, Barcelona, Reji Thomas, University of Puerto Rico

### Room #1

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Tuesday June 15, 2010</b>					
<b>I3T 10:45</b>	Artificially Layered Ferroelectric Superlattices Based on PbTiO <sub>3</sub>	Matthew Dawber	S. Callori, J. Sinsheimer, B. Ziegler, P. Zubko	Stony Brook University	I
<b>I3T 11:15</b>	Variable-temperature scanning probe microscopy of individual ferroelectric nanostructures	Jonathan Spanier	Stephanie H. Johnson	Drexel University	I
<b>O3T 11:45</b>	A Theoretical Study of a BIFEO <sub>3</sub> -BIMNO <sub>3</sub> Nanocheckerboard	Premala Chandra	Lucia Palova, Karin M. Rabe	Rutgers University (NJ - USA)	O
<b>O3T 12:00</b>	Effect of the modulation Period and Composition in the Fabrication of the BaTiO <sub>3</sub> /SrTiO <sub>3</sub> Superlattices	Nora Patricia Ortega Achurry	Ram S Katiyar, Ashok Kumar	University of Puerto Rico	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I3T 14:30</b>	Nanoscale Structure-Property Relations in Epitaxial Heterostructures Involving Ferroelectric PbZr <sub>x</sub> Ti <sub>1-x</sub> O <sub>3</sub> Films	Ionela Vrejoiu		Max Planck Institute of Microstructure Physics (Germany)	I
<b>I3T 15:00</b>	The Topological Polarization in ferroelectric Nanowires: First Principle	Jiawang Hong	G. Catalan, D.N. Fang, Emilio Artacho and J. F. Scott	Tsinghua University; ICREA y Centro de Investigacion en nanociencia y nanotecnología; Peking University; University of Cambridge; Universidad del País Vasco	I
<b>O3T 15:30</b>	Domain wall motion in nanoscale ferroelectric/multiferroic capacitors	Alessio Morelli	Yunseok Kim, Hee Han, Ionela Vrejoiu, Woo Lee, Sunggi Baik, Dietrich Hesse & Marin Alexe	Max Planck Institute of Microstructures Physics; Pohang University of Science and Technology; Korea Research Institute of Standards and Science	O
<b>O3T 15:45</b>	Ferroelectric Data Recording Using Servo-Controlled Tracking Technique	Yasuo Cho	Kenkou Tanka	Tohoku University	O
<b>16:00 - 16:15</b>	<b>Coffee Break</b>				
<b>I3T 16:15</b>	Domain Configuration in Single Crystal Ferroelectric Bars	Alina Schilling	S. Prosandeev, L. Bellaiche, J.F. Scott & J.M. Gregg	Queen's University; University of Arkansas & University of Cambridge	I
<b>I3T 16:45</b>	Vortex-Mediated Polarization switching in nanoscale ferroelectrics: Ginzburg-andau modeling approach	Igor A. Luk'yanchuk	Anaïs Sené & Laurent Baudry	University of Picardie; University of Science and Technology of Lille (France)	I
<b>O3T 17:15</b>	Ferroelectric PbTiO <sub>3</sub> nanostructures for applications in ultra-high density non volatile ferroelectric random access memories	María Torres	M.L. Calzada, L.E. Fuentes Cobas, B. Rodriguez & L. Pardo	Instituto de Ciencia de Materiales de Madrid, Centro de Investigación de Materiales Avanzados, University College Dublin & Max Planck Institute of Microstructure Physics	O
<b>O3T 17:30</b>	Ferroelectric Thin Films on Multi-walled CNT Arrays for Three Dimensional FeRAMs	Sai G Shivareddy	Sai G Shivareddy, Ashok Kumar, Youngjin Choi, Gehan Amaratunga, J. F Scott, Ram S. Katiyar	University of Cambridge	O
<b>Wednesday June 16, 2010</b>					
<b>I3W 09:00</b>	Non-contact mode AFM with static tip charges for ferroelectric domain detection	Andreas Ruediger		Institut National de la Recherche Scientifique (Canada)	I
<b>I3W 09:30</b>	3D Piezoresponse Force Microscopy: Challenges and Innovations	Seungbum Hong	Ramesh Nath, Moonkyu Park, Bryan Huey, Ram S. Katiyar, Kwangsoo No, Orlando Auciello, & Amanda Petford-Long	Argonne National Laboratory; University of Puerto Rico; Korea Advanced Institute of Science and Technology & University of Connecticut	I
<b>O3W 10:00</b>	Nanoscale studies of Structural Properties and Domain Polarization in BiFeO <sub>3</sub> Thin Film-based nanostructures	Orlando Auciello	Ramesh Nath, Jeffrey A. Klug, Seungbum Hong, Alexandra Imre, Bernd Kabius, Michael J. Bedzyk & Ram S. Katiyar	Argonne National Laboratory; Universidad de Puerto Rico; Northwestern University	O

<b>O3W 10:15</b>	Probing ferroelectricity in ultrathin wedged epitaxial BaTiO <sub>3</sub> films	Adrian Petraru	Hermann Kohlstedt, Axel Solbach, Nikolay Pertsev, Markus Heidelmann, Uwe Klemradt, Willi Zander, Jugern Schubert, and Rainer Waser	Christian-Albrechts-Universitat zu Kiel	O
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I3W 10:45</b>	Tunable properties and Domain Structures in Ferroelectric/Paraelectric Superlattices	Pavlo Zubko	M. Dawber, N. Stucki, C. Lichtensteiger, S. Gariglio, J.M. Triscone, E. Bousquet, P. Hermet & P. Ghosez	Univeristy of Geneva; Stony Brook University; Universite de Liege	I
<b>I3W 11:15</b>	Vortex Polarization States in Ferroelectric Nanostructure Arrays	Brian J Rodriguez	X.S. Gao, L.F. Liu, W. Lee, I. I. Naumov, A.M. Bratkovsky, D. Hesse, and M. Alexe	University College Dublin	I
<b>I3W 11:45</b>	Strain, charge, and Surface Effects on the Polarization Structure and Dynamics in ultrathin Ferroelectric Films	Carol Thompson	MJ Highland, D D Fong, J A Eastman, P H Fuoss, T T Fister, M. I Richard, S K Streiffer, G B Stephenson	Northern Illinois University	I
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I3W 14:30</b>	Quantitative Probes for the Functional Properties of Ferroelectric/Dielectric Superlattices	Paul Evans	Ji-Young Jo, Rebecca Sichel, Pice Chen, Ryan Smith, Ho-Nyung Lee, Serge Nakhmanson, Eric Dufresne	University of Wisconsin	I
<b>O3W 15:00</b>	Strain Engineering in Superlattices of Complex Oxides	Mimoun El Marssi	J. Belhadi, Y. Gagou, F. de Guerville, Y. El Mendli, Yu. I. Yuzyuk & I. Raevski	Université de Picardie Jules Verne; Southern Federal University	O
<b>O3W 15:15</b>	Unipolar bipolar fatigue in antiferroelectric lead zirconate thin films	X.J. Lou	J. Wang	National University of Singapore	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P3M01</b>	Ferroelectric Domain Wall Pinning and Spatially-Resolved Switching Studies at a Bicrystal Grain Boundary in Bismuth Ferrite	Brian J Rodriguez	S. Choudhury, Y.H. Chu, A. Bhattacharyya, S. Jesse, K. Seal, A.P. Baddorf, R. Ramesh, L-Q Chen & S.V. Kalinin	University College Dublin; Pennsylvania State University; National Chiao Tung University; Lehigh University, Oak Ridge National Laboratory; University of California	P
<b>P3M02</b>	Raman Spectra of Ferroelectric Thin Film Under Electric Field	Yu. I. Yuzyuk	A.S. Anokhin, V.M. Mukhortov & M. El Marssi	Southern Federal University; Southern Scientific Center RAS; Université de Picardie Jules Verne	P

## Session 4: Materials for Non-Volatile Memories (RRAMs, MRAMs, FeRAMs, PCMs)

### 4A: Non-Volatile Memories (RRAMs)

Chair: U. Boettger, RWTH-Aachen

Co-chair: Isao Inoue, AIST, Japan

### Room #3

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I4AM 14:30</b>	Resistance Switching in Oxides: Mechanisms and Materials Challenges for RRAM Application	Alex Ignatiev		University of Houston	I
<b>I4AM 15:00</b>	Al/SrTiO <sub>3</sub> -xNy/Al Memristors	Andrey Shkabko	Myriam H. Aguirre & Anke Weidenkaff	EMPA- Swiss Federal Laboratories for Materials Science & Technology	I
<b>I4AM 15:30</b>	Impacts of Oxygen Vacancy on Band Diagrams and Resistive Switching in Perovskite-Oxide Junctions	Akihito Sawa	A. Sawa, S. Asanuma, H. Yamada, and H. Akoh	AIST Tsukuba	I
<b>16:00 - 16:15 Coffee Break</b>					
<b>I4AM 16:15</b>	Engineering Control and Applications of oxide based Nano-switches	Jianhua Yang	J.P. Strachan, J. Borghetti, M.D. Pickett, Q. Xia, D.A.A. Ohlberg, D. R. Stewart, G.M.Ribeiro & R.S. Williams	Information and Quantum System Lab.	I
<b>I4AM 16:45</b>	A unified model to explain unipolar memory and threshold resistive switchings	Seo Hyoung Chang	S. B. Lee, S.C. Chae, J.S. Lee, B.S. kang, B. Kahng & T.W. Noh	Seoul Nat'l University, Hanyang University	I
<b>O4AM 17:15</b>	Resistance-dependent switching in NiO-based filamentary RRAM devices	Daniele Ielmini	C. Cagli, F. Nardi & A.L. Lacaita	Politecnico de Milano	O
<b>O4AM 17:30</b>	Re-Programmable Antifuse FPGA Utilizing Resistive Ceram Elements	Chris Mcwilliams	Christopher Mc Williams, Carlos A. Paz de Araujo, Jolanta Celinska, Kan-Hao Xue	Symetrix Corporation	O
<b>Tuesday June 15, 2010</b>					
<b>I4AT 09:00</b>	The Roles of Oxygen Vacancies and Hydrogen Ions in TiO <sub>2</sub> -Based memory Devices	John Ross Jameson	Yoshio Nishi	Adesto Technologies Corporation; Stanford University	I
<b>I4AT 09:30</b>	Dynamic Doping of TiO <sub>2</sub> and Polypyrrole for Nonvolatile Memory	Richard McCreery	Jing Wu, Sudip Barman, Andrew Bonifas, Lian Shoute	University of Alberta	I
<b>I4AT 10:00</b>	Nonvolatile Multilevel Storage Effect and Mechanism in Cu/BTMO:Cu/Pt RRAM	Ming Liu	Wei Wang, Qi Liu, Shibing Long	Chinese Academy of Sciences	I
<b>10:30 - 10:45 Coffee Break</b>					
<b>I4AT 10:45</b>	Scalable Oxide Dual-Layer Memory Elements for Non-Volatile Cross-Point Memory Technology	Rene Meyer		Stanford University	I
<b>I4AT 11:15</b>	Operating Current Reduction in Nickel Oxide Correlated Electron Random Access Memories (CeRAMs) Through Controlled Fabrication Process	Jolanta Celinska	Cristopher McWilliams, Carlos Paz de Araujo & Kan-Hao Xue	Symetrix Corporation, University of Colorado at Colorado Springs	I
<b>O4AT 11:45</b>	Resistive switching properties of sol-gel derived V-doped SrTiO <sub>3</sub> thin films grown on Si(100) substrates	M.H. Tang	Z.P. Wang, Z.Z. Zeng	Xiangtan University (China)	O
<b>O4AT 12:00</b>	GaV <sub>4</sub> S <sub>8</sub> : a new candidate for RRAM memories?	M.P. Besland	E. Souchier, . Guiot, B. Corraze, P. Moreau, V. Fernandez, P. Mazoyer, C. Estounes, E. Janod & L. Cario	Universite de Nantes; STMicroelectronics; CIRIMAT	O
<b>12:15 - 13:30 Lunch Break</b>					
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P4AM01</b>	Characteristics of resistive switching depending on located conducting filaments	Yeon Soo Kim	JS Kim, JS Choi, IR Hwang, Sahwan Hong, Gwangtaek Oh, Insong Yoon	Konkuk University	P
<b>P4AM02</b>	Electrical Properties of both memory and threshold switching in Nb <sub>2</sub> O <sub>5</sub> thin films	B.H. Park	Jieun Bae, S.O. Kang, J.S. Kim, J.S. Choi, I.R. Hwang, S.H. Hong, I.S. Byun, Y.S. Kim, G.T. Oh, J.A. Choi, I.S. Yoon, J.W. Son	Konkuk University	P

<b>P4AM03</b>	The Investigation on Bipolar Switching in Pt/TiO3/SRO thin films	Insong Yoon	J.S. Kim, J.S. Choi, I.R. Hwang, Sahwan Hong, Gwangtaek Oh, Yeonsoo Kim, S. O. Kang & B.H. park	Konkuk University	P
<b>P4AM04</b>	Transparent resistance random access memory with Hfox resistance switching layer	Shima Hisashi		Nanodevice Innovation Research Center (NIRC)	P

## 4B: Non-Volatile Memories (MRAMs)

Chair: Mark Johnson (NRL,USA)

### Room #3

I: Invited, O: Contributed, P: Poster, M: Monday, T:Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I4BM 09:00</b>	High Stability STT MRAM	B. Dieny	I.L.Prejibeanu, K. Mackay, Y. Conraux, L. Lombard, E. Gapihan, C. Ducruet, C. Portemont, R.C. Sousa, J. Herault, M.T. Delaye, Y. Dahmane & B. Dieny	Crocus Technology;Spintec	I
<b>I4BM 09:30</b>	Crossbar MRAM Design of Low Power and Scalability	Jian-Gang (Jimmy) Zhu		Carnegie Mellon university	I
<b>I4BM 10:00</b>	Non-Linear GMR and Spin-Transfer Torque For MRAM	Mark Blamire	A. Aziz, M. Ali, N. Banerjee, and B. J. Hickey	University of Cambridge; University of Leeds	I
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I4BM 10:45</b>	STT-MRAM: Recent Progress and Market Position	Yiming Huai	Roger Malmhall, Ioan Tudosa & Rajiv Ranjan	Avalanche Technology	I
<b>I4BM 11:15</b>	Spin-transfer torque RAM and technology of magnetic tunnel junctions	J. Hayakawa	S. Ikeda, H. Yamamoto, K. Miura, M.Y. Yamanouchi, K. Ito, T. Kawahara, R. Takemura, H. Takahashi, H. Matsuoka & H. Ohno	Advanced Research Laboratory; Tohoku University; Central Research Laboratory	I
<b>I4BM 11:45</b>	Quantum Theory of Spin Transfer Torques in a view of Memory Applications	Mairbek Chshiev		SPINTEC, Grenoble, France	I
<b>I4BM 12:15</b>	Spin filter barriers for spin generation and detection	Guoxing Miao		MIT, Francis Bitter Magnet Lab	I
<b>12:45 - 13:30</b>	<b>Lunch Break</b>				
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P4BM05</b>	Ni/NiO Core Shell Nanostructures by Laser Induced Fragmentation: Characterizations and Application	M.K. Singh	A. Agarwal, R.K. Kotnala, and Ram Gopal	Department of Physics, MNNIT, Allahabad, India	P

## 4C: Non-Volatile Memories (FeRAMs)

Chair: H. Kohlstedt (Kiel, Germany)

### Room #3

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<i>Tuesday June 15, 2010</i>					
<b>I4CT 14:30</b>	Recent Advances in Ferroelectric-Gate Field-Effect-Transistor Technology	Shigeki Sakai	Mitsue Takahashi	National Institute of Advanced Industrial Science and Technology	I
<b>I4CT 15:00</b>	Ferroelectric characterization of leaky thin films and current-voltage measuring technique of semicontinuous ultrathin high- <i>k</i> films	A.Q. Jiang	T.A. Tang	Fudan University	I
<b>I4CT 15:30</b>	Driving Forces of Imprint Progress in PZT Thin-Film Capacitors for FeRAMS	Soichiro Okamura	Hiroshi SHIMA, Takashi Nakajima	Tokyo University of Science	I
<b>16:00 - 16:15</b>	<i>Coffee Break</i>				
<b>I4CT 16:15</b>	Characterization of Thin Film Ferroelectrics for Ferroelectrics for FRAMS	Koichiro Honda	Y.Kotaka, N. Kin, H. Yamaguchi	Device & Materials Lab. Fujitsu Laboratories	I
<b>I4CT 16:45</b>	Dual Field Communication Scheme for UHF (860-960MHz) Gen2 RFID Chip	Hee-Bok Kang	Miseok Lee, Jeong-Ok, Youngwug Kim, Jinseog Choi	Korea University	I
<b>O4CT 17:15</b>	Multiferroic BiFeO <sub>3</sub> (BFO) thin-film on Silicon substrates	NM Murari	Reji Thomas, R Katiyar	University of Puerto Rico, Rio Piedras Campus	O
<i>Wednesday June 16, 2010</i>					
<b>I4CW 09:00</b>	Reliability of Ferroelectric Random Access Memory Embedded Within 130NM CMOS	John Rodriguez	K. Remack, J. Gertas, L. Wang, C. Zhou, K. Boku, J. Rodriguez-Latorre, K.R. Udayakumar, S. Summerfelt & T. Moise	Senior Member of the Technical Staff, Texas Instruments	I
<b>O4CW 09:30</b>	Artificial Duplication of the fatigue state in PZT Thin Film Capacitors	Rachid Bouregba	S. Nossikpendou, C. Soyer, G. Poullain & D. Remiens	Université de Caen (France)	O
<b>O4CW 09:45</b>	SONOS Nonvolatile Memory Cell Programming Characteristics	Todd MacLeod	Thomas A. Phillips & Fat D. Ho	Marshall Space Flight Center; The University of Alabama in Huntsville	O
<b>O4CW 10:00</b>	Study of Interfacial Roughness of SrBi <sub>2</sub> Ta <sub>2</sub> O <sub>9</sub> /ZrO <sub>2</sub> /Si Heterostructures by x-ray scattering	Asim Roy	A. Dhar & S.K. Ray	National Institute of Technology Silchar; IIT Kharagpur (India)	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P4CM06</b>	Ferroelectric diode of ITO and BaTiO <sub>3</sub> Compound Films	X.B. Liu	A.Q. Jiang	Fudan University	P
<b>P4CM07</b>	Modeling of SONOS Memory Cell Erase Cycle	Thomas A. Phillips	Todd C. MacLeod & Fat D. Ho	Marshall Space Flight Center; The University of Alabama in Huntsville	P
<b>P4CM08</b>	New Methods for search and Sort with bit-serial and word-parallel type of functional memory	Hiroshi Nozawa		Graduate School of Energy Science Kyoto University (Japan)	P
<b>P4CM09</b>	Static Characteristics of the Ferroelectric Transistor Inverter	Cody Mitchell	Crystal Laws, Todd C. MacLeod & Fat D. Ho	TheUniversity of Alabama in Huntsville; Marshall Space Flight Center	P
<b>P4CM10</b>	Switching characteristics of Ferroelectric Transistor Inverters	Crystal Laws	Cody Mitchell, Tod C. MacLeod & Fat G. Ho	The University of Alabama in Huntsville; National Space Science and Technology Center	P
<b>P4CM11</b>	Modeling a common-source amplifier using a ferroelectric Transistor	Rana Sayyah	Mitchell Hunt, Todd C. Macleod & Fat D. Ho	University of Alabama, Marshall Space Flight Center	P
<b>P4CM12</b>	Characterization of a Common-Source Amplifier using Ferroelectric Transistors	Mitchell Hunt	Rana Sayyah, Todd C. MacLeod & Fat D. Ho	University of Alabama; Marshall Space Flight Center	P

## 4D: Non-Volatile Memories (PCMs)

Chair: Doo Seok Jeong, KIST, Korea

### Room #3

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<i>Wednesday June 16, 2010</i>					
<b>I4DW 10:45</b>	Electrical Conduction of GE-SB-TE Tuned by Addition of Bismuth	Tae- Yon Lee	Dong-Seok Suh, Jongseob Kim, Kijoon H.P. Kim, Cheolkyu Kim, Youn-Seon Kang, and Yoonho Khang	Samsung Electronic (Korea)	I
<b>I4DW 11:15</b>	Scaling effects of programming and reliability in phase change memories	Daniele Ielmini		Politecnico de Milano and IUNET	I
<b>I4DW 11:45</b>	Growth-dominant SuperLattice-like Phase change Medium and its application in lateral phase change memory	HX Yang	LP Shi, R Zhao, HK Lee, JM Li, KG Lim, TC Chong	National University of Singapore	I
<i>12:15 - 13:30</i>	<i>Lunch Break</i>				
<b>I4DW 14:30</b>	Materials for Phase-Change Memory Operative at Elevated Temperatures	Tsung-Shune Chin	Kin-Fu Kao, Chih-Chung Chang, Yung-Ching Chu, Frederick T. Chen, Ming-Jinn Tsai	Feng Chia University (Taiwan)	I
<b>I4DW 15:00</b>	Experimental Characterization of Phase Change Memory Arrays	C. Zambelli	A. Chimenton & P. Olivo	Università degli studi di Ferrara	I
<b>O4DW 15:30</b>	Growth and crystallization behaviors of Ge doped Sb-Te thin films deposited by a combined plasmaenhanced chemical vapor and atomic layer depositions	Seol Choi	Byung Joon Choi, Taeyong Eom, Jae Hyuck Jang, Woong Kyu Lee and Cheol Seong Hwang	Seoul National University	O

## Session 5: Tunable Dielectrics for RF Applications and Devices

Chair: G. Subramaniam (Dayton Univ., Ohio)

Co-chair: F. Miranda (NASA-GRC, Ohio)

### Room #2

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I5M 09:00</b>	Tunable Microwave Devices using Ferroelectric Thin Films	Timothy Jackson		University of Birmingham	I
<b>I5M 09:30</b>	Nanocrystalline ZnO Thin Film Transistors with High-K Gate Dielectrics for RF Applications	Kevin Leedy	Burhan Bayraktaroglu, Robert Neidhard	Airforce Research Laboratory	I
<b>O5M 10:00</b>	Spread Spectrum Clock Generator using Tunable Ferroelectric Capacitor	T.S. Kalkur	Abu Kabir	University of Colorado at Colorado Springs	O
<b>O5M 10:15</b>	Novel Multi-capacitor Architecture for BST Thin Films Varactors	Guru Subramanyam	Mark Patterson, Kevin Leedy, Robert Neidhard, Chakrapani Varanasi, Gregg Steinhauer	University of Dayton	O
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I5M 10:45</b>	Improvement in planar-type microwave tunable device considering strain relaxation effect of BST film	T. Yamada	Minoru Noda, T. Yamada, K. Seki, K. Yamashita & H. Funakubo	Kyoto Institute of Technology	I
<b>I5M 11:15</b>	Dielectric and Thermoelectric Behavior of (Ba <sub>x</sub> Sr <sub>1-x</sub> ) TiO <sub>3</sub> Thin Films	John D. Baniecki	M. Ishii, K. Kurihara, K. Yamanaka	Fujitsu Laboratories	I
<b>O5M 11:45</b>	Low Temperature Sinterable BaRE <sub>2</sub> (MoO <sub>4</sub> ) <sub>4</sub> (RE=Pr, Sm, Gd and Dy) Ceramics and BaRE <sub>2</sub> (MoO <sub>4</sub> ) <sub>4</sub> Filled PtFe laminates from Microwave Circuit Applications	R. Ratheesh	Nijesh K. James	Microwave Materials Division, Centre for Materials for Electronics Technology (C-MET)	O
<b>O5M 12:00</b>	Tunable BST components for microwave applications	Sandrine Payan	A. Rousseau, S. Pacchini, H.B. El-Shaarawy, B. Ouagague, J. Dhennink, M. Maglione, R. Plana	University Bordeaux	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I5M14:30</b>	Adaptive frequency Electronics based on tunable Ferroelectric capacitors	T.S. Kalkur		University of Colorado at Colorado Springs	I
<b>I5M 15:00</b>	Voltage Tunable BST and BZN Thin Films on Fused Silica for Planar Microwave varactors	KC James Raju	K. Sudheendran, K. Venkata Saravanan and G. Lakshmi Narayana Rao	University of Hyderabad (India)	I
<b>O5M 15:30</b>	1/f Noise in Thin Ferroelectric Films and Implications for Loss Mechanisms Based on the Fluctuation-Dissipation Theorem	Robert Romanofsky		NASA Glenn Research Center	O
<b>O5M 15:45</b>	Tunable Interdigital Capacitors with Ba <sub>0.5</sub> Sr <sub>0.5</sub> TiO <sub>3</sub> Thin Films on low-k Substrates for Frequency Agile Microwave Devices	K.C. James Raju	G. Narayana Rao, K. Venkata Saravanan	University of Hyderabad	O

## Session 6: High-K Dielectrics for Nanoscale Logic and DRAM Devices

Chair: D. Schlom (Cornell University, Ithaca, NY)

Co-chair: Jürgen Schubert (IBN, Research Center Jülich, Germany)

### Room #4

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Tuesday June 15, 2010</b>					
<b>O6T 16:15</b>	Point Defect Chemistry in Amorphous Hafnia	R. Ramprasad	C. Tang	University of Connecticut; Fritz-Haber-Institut der Max-Planck-Gesellschaft	O
<b>I6T 16:30</b>	MOCVD and ALD Routes for High-k Oxides: From Precursor Chemistry to Applications	Anjana Devi		Ruhr-University Bochum	I
<b>I6T 17:00</b>	On the key role of nitrogen on reliability and performances of advanced High-K/Metal gate stacks	Gilles Reimbold	X. Garros, M. Cassé, C. Leroux, F. Martin, and F. Boulanger	CEA-LETI, MINATEC, 17 rue des Martyrs, 38054 Grenoble cedex 9, France	I
<b>O6T 17:30</b>	Tuning the Properties of Crystalline Lanthanide Oxides on Silicon	Dominik Schwendt	E. Bugiel & H.J. Osten	Leibniz University	O
<b>Wednesday June 16, 2010</b>					
<b>I6W 09:00</b>	Ternary higher-k oxides for nanoscale logic devices	Siegfried Mantl	J.M.J. Lopes <sup>1</sup> , E. Durgun-Özben <sup>1</sup> , R. Luptak <sup>1</sup> , R.A. Minamisawa <sup>1</sup> , S. Feste <sup>1</sup> , D. Buca <sup>1</sup> , J. Schubert <sup>1</sup> , Q. T. Zhao <sup>1</sup> , B. Holländer <sup>1</sup> , A. Tiedemann <sup>1</sup> , J.M. Hartmann <sup>2</sup> , K. Bourdelle <sup>3</sup> , N. Kernevez <sup>3</sup> , P. Baumann <sup>4</sup> , M. Heuken <sup>4</sup> and S. Mantl <sup>1</sup>	1Institute of Bio- and Nanosystems (IBN-1) and JARA-Fundamentals of Future Information Technologies, Forschungszentrum Juelich, 52425, Germany, 2CEA-LETI, MINATEC, 17 Rue des Martyrs, 38054 Grenoble Cedex 9, France 3SOITEC, Parc Technologique des Fontaines, 38190 Bernin, France 4 AIXTRON GmbH, Kaiserstr. 98, D-52134 Aachen, Germany	I
<b>I6W 09:30</b>	Introducing Crystalline Rare-Earth Oxides into Si-Based Electronics	H. J. Osten	A. Laha, D. Schwendt, E. Bugiel & A. Fiseel	Leibniz University	I
<b>I6W 10:00</b>	Band alignment at the interface of oxide insulators with semiconductors and metals	Valeri Afanas'ev	M. Houssa, and A. Stesmans	University of Leuven	I
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I6W 10:45</b>	High -k Dielectrics on III-V Semiconductors	Ravi Droopad	W. Priyantha & G. Radhakrishnan	Texas State University	I
<b>I6W 11:15</b>	TiO <sub>2</sub> and Al-doped TiO <sub>2</sub> films grown by atomic layer deposition for next generation DRAM capacitor	Seong Keun Kim	Gyu-Jin Choi, Minha Seo, Sang Woon Lee, Jeong Hwan Han, and Cheol Seong Hwang	Seoul National University	I
<b>O6W 11:45</b>	Interlanthanid LaGdO <sub>3</sub> Ceramic and Thin Films for High-K Application	Shojan Pavunny	SP Pavunny, R Thomas, TS Kalkur, J Shubert, RS Katiyar	University of Puerto Rico, Rio Piedras Campus	O
<b>O6W 12:00</b>	TiTaO thin films deposited by magnetron sputtering for integrated capacitors in CMOS	M.P. Besland	F. Challali, S. Salimy, D. Averty, A. Rhallabi, J.C. Saubat, A. Charpentier, S. Toutain, M. Carette, J.P. Landesman & A. Gouillet	University of Nantes	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I6W 14:30</b>	FEDRAM: A Dram Cell Based on Ferroelectric-Gated Transistor	T.P. Ma	Xiao Pan	Yale University	I
<b>I6W 15:00</b>	Rare-earth oxides as High-k gate-oxide materials for logic devices	Reji Thomas	P. Ehrhart, R. Waser, J. Shubert, R.S. Katiyar	UPR, Institute fur Festkorperforschung, JARA-Fundamentals of Future Information Technology, Institute of Bio- and Nano Systems	I

## Session 7: Piezoelectrics and Opto-Electrics for Sensors, Actuators, Transducers

Chair: A. Bhalla (Univ. of Texas at SA)

Co-chair: Doug Chrisey (RPI, NY)

## Room #4

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I7M 16:15</b>	Dielectric spectroscopy (RF and MW) in ferroelectrics and multiferroics	Jose Antonio Eiras		Universidade Federal de Sao Carlos	I
<b>I7M 16:45</b>	Strain Relaxation and Dislocation Evolution in Epitaxial Perovskite Oxide Thin Films	Y Lin	CL Chen	University of Electronic Science & Technology of China, University of Texas	I
<b>I7M 17:15</b>	From Nano to Bulk: Scaling the Structure-Properties relationships	Luis Fuentes-Cobas	A. Muñoz-Romero, L. Fuentes-Montero M. Loya-mancilla, G. Aquino de los Rios, M.E. Montero-Cabrera, H. Camacho-Montes, J. Camarillo -Cisneros & M.E. Fuentes-Montero	Centro de Investigación en Materiales Avanzados, Institute Laue-Langevin, Universidad Autónoma de Ciudad Juárez, Universidad Autónoma de Chihuahua	I
<b>Tuesday June 15, 2010</b>					
<b>I7T 09:00</b>	Progress in flexure mode designed flexoelectric piezoelectric composites	L.E.Cross	B. Chu, W. Zhu & N. Li	Pennsylvania State University	I
<b>O7T 09:30</b>	Deposition and characterization of Pb((Zn1/3NB2/3)0.6(Fe2/3W1/3)0.4)O3 Ceramic-Glass Composites Thick Film Capacitors	D.B. Chrisey	M. Tomozawa1, and R. Katiyar	Rensselaer Polytechnic Institute	O
<b>O7T 09:45</b>	Studies on interfacial defects and optical properties of c-axis oriented LiNbO3 thin films grown by pulsed laser deposition	Monika Tomar	Swati Shandilys, k. Sreenivas & Vinay Gupta	University of Delhi	O
<b>I7T 10:00</b>	Piezoelectric Resonance Enhanced Acoustic Wave Detection and Electrooptic Modulation	Ruyan Guo		University of Texas	I
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>I7T 10:45</b>	Low Voltage Large Displacement Multi-Degree of Freedom Piezo MEMS Actuators	Brett Piekarski	Jeffery S. Pulskamp, Gabriel Smith, Ronald G. Polcawich	US Air Force Academy	I
<b>I7T 11:15</b>	Size-tuned design and piezoactivity in lead-free nanoceramics	Yosuke Shiratori	Christian Pithan	University of Tokyo, Institute of Solid State Research (Germany)	I
<b>O7T 11:45</b>	Growth and field emission studies on CNT/diamond composite by HFCVD method	Deepak Varshney	Brad R. Weiner, Geraldo Morell	University of Puerto Rico, Rio Piedras Campus	O
<b>O7T 12:00</b>	UV Photosensitivity of the Polycrystalline CVD Diamond	Vladimir Makarov	F Mendoza, A Hidalgo, B Weiner, G Morell	University of Puerto Rico, Rio Piedras Campus	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>I7T 14:30</b>	ZnO Nanowire-Based Optoelectronic Device on Flexible Substrates	Hongbin Yu	Tej Belagodu, Ebraheem Ali Azhar, and Sandwip Dey	Arizona State University	I
<b>I7T 15:00</b>	Zinc-oxide Ultra-violet photodetector with enhanced response	Vinay Gupta		University of Delhi	I
<b>O7T 15:30</b>	Simultaneous characterization of the electro-optic, inverse-piezoelectric, and electro-absorptive effects in (Sr,Ba) Nb2O6 (SBN) Thin Films	Mireille CUNIOT-PONSARD	J.M. Desvignes, A. Bellemain, F. Bridou	Univ. Paris-Sud	O
<b>O7T15:45</b>	BST thin films for optical and electro-optic applications	Sandrine Payan	A.Rousseau, F. Leroy, S. Payan, M. Maglione, E. Dogheche	ICMCB-CNRS University Bordeaux 1	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P7M01</b>	Design and Performances of Shaftless Motor for High Torque Generation	Jin-Heon Oh	Kee-Joe Lim, Dae-Hee Park, Boo-Hyung Ryu	Chungbuk National University; Doowon Institute of Technology; Wonkwang University & Dongguk University	P
<b>P7M02</b>	Spin Coated ZnBeMgO Thin Films for Deep Ultraviolet Detection	José Liriano	Neeraj Panwar, RS Katiyar	University of Puerto Rico	P
<b>P7M03</b>	Terahertz wave generation using nonlinear optical approaches	Yalin Lu		US Air Force Academy	P

## Session 8: Ferroelectric Polymers, Composites and Liquid Crystals

Chair: Stephen Ducharme (UNL, Nebraska)

Co-chairs: Fouad Aliev (UPR, San Juan), Luis Rosa (UPR Humacao)

### Room #4

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>18M 09:00</b>	The Surface Science of Adsorption on Crystalline Ferroelectric Polymer Surfaces	Peter Dowben		University of Nebraska	I
<b>18M 09:30</b>	Adsorption of Dipolar Molecules on Two Ferroelectric Polymers	Carolina C. Ilie		State University of New York	I
<b>18M 10:00</b>	Dynamic responses of dispersed ferroelectric liquid crystal composite systems	K. K. Raina	Neeraj	Thapar University	I
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>18M 10:45</b>	Ferroelectric Polymer for Organic Electronics Applications	PS Lee	P. S. Lee, C. A. Nguyen, D. Y. Kusuma	Nanyang Technological University, Singapore	I
<b>18M 11:15</b>	Dipole layer in organic electronic devices-a unique application opportunity for ferroelectric polymer	Jinsong Huang	Yongbo Yuan, Timothy J. Reece & Stephen Ducharme	University of Nebraska	I
<b>18M 11:45</b>	Gate Controlled Non-volatile Graphene Ferroelectric Memory	Barbaros Ozyilmaz		National University of Singapore	I
<b>18M 12:15</b>	Organic Ferroelectric random Access Memories	Seshu B. Desu		Binghamton University	I
<b>12:45 - 13:30</b>	<b>Lunch Break</b>				
<b>18M 14:30</b>	Ferroelectric Polymer Gates for Semiconductor Heterostructures	Igor Stolichnov		Laboratory of Ceramics	I
<b>18M 15:00</b>	Channel/ferroelectric interface modification in transparent ZnO non-volatile memory transistor with P(VDF-TrFE) polymer	Seongil Im	C.H. Park	Yonsei University	I
<b>O8M 15:30</b>	Nanoscale Studies of Ferroelectric PVDF-TrFE Copolymer using Piezoresponse Force Microscopy	Pankaj Sharma	Timothy J. Reece, Stephen Ducharme, Alexei Gruverman	University of Nebraska	O
<b>O8M 15:45</b>	The role of gauche bonds in the phase diagram and polarization dynamics of vinylidene fluoride copolymers	Stephen Ducharme		University of Nebraska	O
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P8M01</b>	Dielectric and polarization properties of BaTiO <sub>3</sub> Nanoparticle/Ferroelectric Liquid Crystal Colloidal Suspension	Indrani Coondoo	Puja Goel, Anu Malik, A.M. Biradar	National Physical Laboratory, India	P
<b>P8M02</b>	Ferroelectric properties and leakage behavior in poly (vinylidene fluoride-trifluoroethylene) ferroelectric thin films doped with diethyl phthalate	M.H. Tang	H.Y. Xu, Y.G. Xiao, J. He	Xiangtan University (China)	P
<b>P8M03</b>	High mobility non-volatile memory thin film transistor with (VDF-TrFE) ferroelectric polymer	Kwang H. Lee	Gyubaek Lee, Min Suk Oh, Sung-Min Yoon & Seongil Im	Institute of Physics and Applied Physics; Korea Electronic Technology; Electronics and Telecommunications Research Institute	P

## Session 9: Energy Harvesting, Ferroelectric Photovoltaics

Chair: O. Auciello, Argonne National Laboratory

G. Morell, University of Puerto Rico

Co chair:

### Room #5

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>19M 09:00</b>	Polarized Semiconductor Solid Oxides based on Ferroelectrics: New Materials for Photovoltaic Devices	Andrew M. Rappe		University of Pennsylvania	I
<b>19M 09:30</b>	Multimodal Energy Harvesting Systems	Shashank Priya		Virginia Tech	I
<b>09M 10:00</b>	Integrated Energy Sensing, Generation, and Storage (SGS) system: Biosensor and Biofuel Cells Based on Vertically aligned Carbon Nanotube Arrays	Archana Pandey	Abhishek Prasad, Yoke Khin Yap	Michigan Technological University	O
<b>09M 10:15</b>	Parametric Study of an Energy Harvester Based on d33 Mode Piezoelectric Thin Films	Mahmoud Al Ahmad		University of Science & Technology Thuwal (Saudi Arabia)	O
<b>10:30 - 10:45</b>	<b>Coffee Break</b>				
<b>19M 10:45</b>	Domain Wall Driven Anomalous Photovoltaic Effect in BiFeO <sub>3</sub>	Jan Seidel	S.Y. Yang, S.J. Byrnes, P. Shafer, C-H Yang, M.D. Rosell, P. Yu, Y.-H. Chu, Jf. Scott, J.W. Ager, III, L.W. Martin & R. Ramesh	Lawrence Berkeley National Laboratory; University of California; National Chiao Tung University; University of Cambridge	I
<b>19M 11:15</b>	Polarization Dependent Bulk Photovoltaic Effect in Epitaxial Ferroelectric Thin Films	Kui Yao	Wei Ji, Meng Qin & Yung C. Liang	IMRE; ASTAR	I
<b>09M 11:45</b>	Structural, Optical and Photovoltaic Properties of Bi <sub>2</sub> FeCrO <sub>6</sub> epitaxial thin films	Riad Nechache		Centre Energie, Matériaux et Télécommunications (Quebec)	O
<b>09M 12:00</b>	Piezoelectric MEMS based device as an energy source	Kuldeep Singh	Monika Chaudhary, S. K Singh, Amita Gupta	Department of Physics, H. P. University, Shimla	O
<b>12:15 - 13:30</b>	<b>Lunch Break</b>				
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P9M01</b>	Decorated Zinc Oxide Nanowires for Energy Harvesting Applications	Abhishek Prasad	Archana Pandey, Yoke Khin Yap	Michigan Technological University	P
<b>P9M02</b>	Energy harvesting via frequency conversion using ferroelectric materials in silicon thin film solar cells	Yalin Lu		US Air Force Academy	P
<b>P9M03</b>	Effect of RF deposition conditions on the metal-mixed SBT ferroelectric thin films for the photovoltaic applications	Rajesh Katiyar	Neeraj Panwar, J Liriano, G Morell, R Katiyar	UPR	P
<b>P9M04</b>	Ferroelectric thin Film and Cantilever Development for Energy Harvesting Applications	Husam Al Shareef	E Fuentes- Fernandez, W Debray, MA Quevedo-Lopez and BA Gnade, P Shah and A Hande, M Al Ahmad and HN Alshareef	University of Science & Technology Thuwal (Saudi Arabia)	P

## Session 10: Ferroelectrics and Inorganics in Medicines and Health Care

Chair: S. Dey, Arizona State University

Co-chair: Leo Ocola, Argonne National Laboratory

### Room #5

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Tuesday June 15, 2010</b>					
<b>I10T16:15</b>	Solid State Micro-and Nanopores For Biosensing Applications	Mike Goryll	N Chaplot, KC Lin, P Joshi, T Mathew, A Smolyanitsky, S Prasad, BL Ramakrishna, TJ Thornton	School of Electrical, Computer and Energy Engineering, School of Mechanical Aerospace, Arizona State University	I
<b>O10T16:45</b>	Nanostructured ZnO for Biosensor Applications	Vinay Gupta	Shibu Saha, Monika Tomar, Sunil K. Arya, K. Sreenivas & S.P. Singh	University of Delhi; National Physical Laboratory; Universidad de Puerto Rico	O
<b>I10T 17:00</b>	Novel Material Systems for Thermal Ablation and Shock Wave Induced Injury in Idealized Cellular Constructs	Dough Chrisey		Rensselaer Polytechnic Institute	I
<b>O10T 17:30</b>	Osteoblast Cell Adhesion on Combinatorial Metal oxide Nanoscaffolds	Jaime E. Ramirez-Vick	Netzahualcoyotl Palomera, Jose L. Vera, Enrique Melendez, Jaime E. Ramirez*-Vick, Maharaj S. Tomar	Universidad de Puerto Rico, Mayaguez Campus	O
<b>Wednesday June 16, 2010</b>					
<b>I10W 09:00</b>	Spin Vortex Microdisks as Multifunctional Carriers	Valentyn Novosad	D.-H. Kim, E. A. Rozhkova, I. Ulasov, M. S. Lesniak , T. Rajh , S. D. Bader	Argonne National Laboratory; The University of Chicago	I
<b>O10W 09:30</b>	Potential of Fe <sub>3</sub> O <sub>4</sub> /ZnO Core-Shell nanoparticles in Photodynamic therapy for Cancer	S.P. Singh	J.C. Beltran, M.S. Tomar, O. Perales, L. Rivera & S. Peña	University of Puerto Rico, Mayaguez Campus	O
<b>O10W 09:45</b>	Synthesis of Nanostructured Metal (Core) - Layered Double Hydroxide (Shell) as Inorganic Theranostics	Sandwip K. Dey		Arizona State University	O
<b>I10W 10:00</b>	Fabrication of High-Capacitance Capacitors Supplying Power to Implantable Artificial Retina Devices	Wei Li	Orlando Auciello,	Argonne National Laboratory	I
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					
<b>P10M01</b>	Sol-gel derived nanostructured NiO films for urea biosensor	Netzahualcoyotl Palomera	Melendez, Jaime E. Ramirez*-Vick, Maharaj S. Tomar, S.P. Singh	Universidad de Puerto Rico, Mayaguez Campus	P

## Session 11: Ferroelectrics and Spintronics: Theory and Experiments

Chair: Agnes Barthelemy, THALES, France

Co-chair: Val Novosad, Argonne National Laboratory

### Room #5

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Monday June 14, 2010</b>					
<b>I11M 14:30</b>	Spintronics	S.D. Bader		Argonne National Laboratory	I
<b>I11M 15:00</b>	Ferroelectric Barium Titanate Tunnel Barriers for (1) Giant Tunnel Electroresistance and (2) Control of Spin Polarization	N.D. Mathur	V. Garcia, M. Bibes, L. Bocher, S. Valencia, F. Kronast, A. Crassous, X. Moya, S. Enouz-Vedrenne, A. Gloter, D. Imhoff, C. Deranlot, S. Fusil, K. Bouzehouane & A. Barthélémy	University of Cambridge; Université Paris-Sud; Albert-Einstein-Str; Campus de l'Ecole Polytechnique; Université d'Evry-Val d'Essonne	I
<b>I11M 15:30</b>	Controlling Spins with Light	Theo Rasing		Radboud University	I
<b>16:00 - 16:15 Coffee Break</b>					
<b>I11M 16:15</b>	Chiral Spin Textures at Surfaces	Stefan Blugel		Institut für Festkörperforschung, Institute for Advanced Simulation (IAS)	I
<b>I11M 16:45</b>	Spin Hall Effects in Metallic Nanostructures	Laurent Vila		Institute of nanoscience and Cryogenics	I
<b>I11M 17:15</b>	Magnetoelectric Coupling at Multiferroics Interfaces	Michael Fechner	I.V. Maznichenko, M. Holzer, S. Ostanin, A. Ernst, J. Henk & Ingrid Merting	Max Planck Institute of Microstructure Physics (Germany); Martin-Luther University Halle-Wittenberg	I
<b>O11M 17:45</b>	Closed-Space Flux Sublimation Growth and Properties of (Cu-Mn) Doped ZnO Films in Nanoneedle and Nanorods-like Morphologies	Alok Rastogi	Ratheesh R. Thankalekshmi, Samwad Dixit, Kousick Samanta, RS Katiyar	Binghamton University	O
<b>Tuesday June 15, 2010</b>					
<b>I11T 09:00</b>	Tunnelling magneto resistance in complex oxide heterostructures with active ferroelectric barriers	Hermann Kohlstedt	Adrian Petraru, Michael Hambe, Nikolay A. Pertsev, Paul Monroe, Valanoor Nagarajan, and Hermann Kohlstedt	University zu Kiel	I
<b>I11T 09:30</b>	Realization of Spin injected field effect Transistor	Joonyeon Chang	Hyun Cheol Koo, Jonghwa Eom, Suk Hee Han, Mark Johnson	Korea Institute of Science and Technology, (Seoul)	I
<b>I11T 10:00</b>	Spin Transfer Induced Microwave Oscillations	Jullie Grollier		Unité Mixte de Physique	I
<b>10:30 - 10:45 Coffee Break</b>					
<b>I11T 10:45</b>	Giant Axial ratio Multiferroic BiFeO <sub>3</sub> phase	Helene Bea		CNRS/CEA/UJF	I
<b>I11T 11:15</b>	LaMnO <sub>3</sub> /SrMnO <sub>3</sub> Superlattices: On the Verge of Ferromagnetism	Tiffany Santos		Argonne National Laboratory	I
<b>O11T 11:45</b>	Magneto-Electric Coupling and Ferroelectric Control of magnetization in Ferromagnetic Cobalt/Ferroelectric Copolymer Multi-Layer Films	Abhijit Mardana	S Ducharme, S Adenwalla	University of Nebraska	O
<b>O11T 12:00</b>	Studies on ZnO tin-film transistors with PZT gate insulator	Z.H. Chen	X.B. Liu, M.C. Chen, H.H. Yu & A.Q. Jiang	Fudan University	O
<b>O11T 12:15</b>	Observation of Spin-Polarized State Transport from a Ferromagnetic to a Conductive Material	Vladimir I. Makarov	Vladimir I. Makarov, Igor Khmelinskii, S.A. Kochubei	Department of Physics, University of Puerto Rico, Rio Piedras	O
<b>12:30 - 13:30 Lunch Break</b>					
<b>I11T 14:30</b>	First-principles modeling of spin transport in multiferroic tunnel junctions	Nuala M. Caffrey	Thomas Archer & Stefano Sanvito	Trinity College Dublin	I
<b>I11T 15:00</b>	Sping Torque Oscillators and RF currents-modulation, locking, and ringing	Johan Akerman		University of Gothenburgh	I
<b>I11T 15:30</b>	Voltage Control of Magnetic Anisotropy in Au/Fe Co (001) Ultrathin Layer/ MgO Junctions	Yoshishige Suzuki		Osaka University (Japan)	I
<b>POSTER PRESENTATIONS ON MONDAY FROM 6:00 TO 8:00 PM</b>					

<b>P11M01</b>	Synthesis and characterization of magnetic diphase ZnFe <sub>2</sub> O <sub>4</sub> /γ-Fe <sub>2</sub> O <sub>3</sub> electrospun fibers	Melvin Arias	Boris Reiteria, O. Perales, V. Pantojas and W. Otano	University of Puerto Rico	P
<b>P11M02</b>	Stabilization of ferromagnetism in Co-coped M:ZnO	Kajal Jindal	Monika Tomar, Vinay Gupta, and K. Sreenivas	University of Delhi	P
<b>P11M03</b>	Synthesis, magnetization and Raman scattering study of Ni-doped In <sub>2</sub> O <sub>3</sub> nanoparticles	Sandra Dussan	Manoj Kumar Singh and Ram S. Katiyar	Universidad de Puerto Rico, University of Allahabad	P

## Session 12: Materials for Electrocaloric Coolers

Chair: J.F. Scott (Cambridge University, UK)

Co-chair: N.D. Mathur (Cambridge University, UK)

### Room #5

I: Invited, O: Contributed, P: Poster, M: Monday, T: Tuesday, W: Wednesday

Presentation Schedule	Title	Presenter	Other Authors	Presenter's Institution	Type
<b>Wednesday June 16, 2010</b>					
<b>I12W 10:45</b>	Giant Electrocaloric Effect in Ferroelectric Polymers	Qiming Zhang	Q. M. Zhang, Sheng-Guo Lu, Breet Neese, Xinyu Li, B. Rožič and Z. Kutnja	The Pennsylvania State University, University Park	I
<b>I12W 11:15</b>	Giant Electrocaloric effect in solid ferroelectric materials: direct measurements	Zdravko Kutnjak	B. Rožič, H. Uršič, J. Holc & M. Kosec	Jozef Stefan Institute (Slovenia)	I
<b>I12W 11:45</b>	Electrothermal Properties of Perovskite Ferroelectric Films	S. Pamir Alpay	J. Zhang, G. Akcay, A.A. Heitmann, J.V. Mantese & G.A. Rossetti, Jr.	University of Connecticut; United Technologies Research Center	I
<b>I12W 12:15</b>	Enhancement of Refrigeration Capacities in Ferroelectric Thin-Films	Rami N Chukka	Chen Lang	Nanyang Technological University	I
<b>12:45 - 13:30</b>	<b>Lunch Break</b>				
<b>I12W 14:30</b>	New Trends in Electrocalorics	S. Kar-Narayan	N.D. Mathur	University of Cambridge	I
<b>I12W 15:00</b>	Electrocaloric Materials for Giant Pyroelectric Energy Harvesting	Gael Sebald	S. Pruvost, H. Zhu & D. Guyomar	Université de Lyon	I
<b>I12W 15:30</b>	Electrocaloric Effect in Ferroelectric Relaxor Thin Films	Q. Zhang	T.M. Correia, J.S. Young, R.W. Whatmore, J. F. Scott, N.D. Mathur	University of Cambridge, Cranfield University & University College Cork	I