

Programme Overview

Time	Sunday, 24 May 2015			
08:00 – 09:00	Tutorial Registration (Level 2)			
Venue →	Breakthrough (Level 4)	Discovery (Level 4)	Level 2	Level 4
09:00 – 11:00	AM Tutorial 1 – Kenji UCHINO “Introduction to Piezoelectric Actuators – Professor’s Misconceptions Top 10”	AM Tutorial 2 – Andrei KHOLKIN “Fundamentals and new developments in piezoresponse force and electrochemical strain microscopies”	Tutorial & Conference Registration	Exhibition & Poster – Build Up
11:00 – 11:15	Coffee/Tea with Snacks (Level 2)			
11:15 – 13:15	AM Tutorial 3 – Zuo-guang YE “Development and understanding of high-performance piezo-/ferroelectric single crystals”	AM Tutorial 4 – Pablo GURMAN & Orlando AUCIELLO “Science and technology of oxide and nanocarbon multifunctional materials and applications to industrial and biomedical devices”		
13:15 – 14:15	Lunch Buffet (Level 2)			
14:30 – 16:30	PM Tutorial 5 – Ian REANEY “The use electron diffraction and dark field imaging to determine superstructure in perovskites”	PM Tutorial 6 – Carlos PAZ de ARAUJO & Jolanta CELINSKI “Materials science and device architecture of resistive random access memories”		
16:00 – 18:00	16:45 – 17:45 UFFC President’s Student Reception (Breakthrough Theatre – Level 4)	16:00 – 18:00 PFM Advisory Board Meeting (By Invitation Only) (Meeting Room 1 – Level 3)		
18:00 – 20:00	Welcome Reception (Level 2)			

Time	Monday, 25 May 2015									
08:00 – 08:30	Welcome Coffee/Tea (Level 2)					Level 2	Level 4			
Venue →	Auditorium (Level 2)					Conference Registration	Poster Set-up by Authors: 10:15 to 10:45am			
08:30 – 08:45	Official Opening									
Session Chairs	Ahmad SAFARI, Rutgers University, USA ; Jacob JONES, North Carolina State University, USA									
08:45 – 09:30	Plenary 1 – Thomas R. SHROUT, The Pennsylvania State University, USA “Relaxor-PT Single Crystals: There and Back Again”									
09:30 – 10:15	Plenary 2 – Stefan MUELLER, NaMLab gGmbH, Germany “Next-Generation Ferroelectric Memories Based on X:HfO ₂ ”									
10:15 – 10:45	Coffee/Tea With Snacks (Level 2)									
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)					
AM2	Defects and Domains 1	Processing and Integration of Thin Films 1	Ceramics 1: Lead-Free	Biomaterials	Special Session Memorial of Hans Schmid					
10:45 – 12:30										
12:30 – 13:30	Lunch Buffet (Level 2)									
13:00 – 14:00	Women in Engineering (WIE) Panel Session (Auditorium – Level 2)									
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)					
PM1	Defects and Domains 2	Processing and Integration of Thin Films 2	Ceramics 2: Lead-Free	Local Characterization	Energy Harvesting and Capacitor Devices					
14:00 – 16:00										
16:00 – 16:30	Coffee/Tea With Snacks (Level 2)									
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)					
PM2	Defects and Domains 3	Processing and Integration of Thin Films 3	Ceramics 3: Fe-based and Non-perovskite	Capacitors and Energy Storage Materials	Biomedical, Ultrasonic, and Ferroelectric Field Effect Devices					
16:30 – 18:30										
18:15 – 19:00	Student Poster Competition (Level 2)									
19:00 – 22:30	Meeting of the Ferroelectrics Committee of UFFC-S – Dinner Provided (Meeting Room 1 – Level 3)									

Time	Tuesday, 26 May 2015								
08:00 – 08:30	Welcome Coffee/Tea (Level 2)						Level 2	Level 4	
Venue →	Auditorium (Level 2)						Conference Registration	Poster Display on Level 4 Mon – Wed 25 to 27 May 2015	
Session Chairs	Andrei KHOLKIN, University of Aveiro, Portugal ; Susan TROLIER-MCKINSTRY, University of Pennsylvania, USA								
08:30 – 10:00	Plenary 3 – Paul S. WEISS, University of California, USA “Cooperative Function in Atomically Precise Nanoscale Assemblies”								
	Plenary 4 – Kazumi KATO, National Institute of Advanced Industrial Science and Technology (AIST), Japan “The Current Status of Single Crystalline Nanocube Materials”								
10:00 – 10:30	Coffee/Tea With Snacks (Level 2)								
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)				
AM2	Defects and Domains 4	Novel Processing	Soft Materials and Composites	Multifunctional Materials and Cross-Coupling Effects 1	PiezoMEMS, Actuators and Sensors				
10:30 – 12:30									
12:30 – 13:30	Lunch Buffet (Level 2)								
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)				
PM1	Fundamentals and Theory	Sintering and Growth	Single Crystals	Multifunctional Materials and Cross-Coupling Effects 2	Domains and Switching				
13:30 – 15:30									
15:30 – 16:00	Coffee/Tea With Snacks (Level 2)								
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)				
PM2	Characterization Techniques 1: Nano-scale	Composites	Crystals Containing Pb	Multiferroics 1	Resistive Switching				
16:00 – 18:00									
18:00 – 19:00	Coach Transfer to Conference Banquet (Last Bus Departs 18:30)								
19:00 – 22:00	Conference Banquet (Venue: Chui Huay Lim Club at No. 190 Keng Lee Road, Singapore 308849 Tel: +65 6253 0111)								

Time	Wednesday, 27 May 2015						
08:00 – 08:30	Welcome Coffee/Tea (Level 2)					Level 2	Level 4
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)	Conference Registration	Poster Display on Level 4 Mon – Wed 25 to 27 May 2015 Poster – Q&A Session, Attendance Required for Poster Presenters Wed, 27 May from 10:00 to 11:00
AM1	Characterization Techniques 2: Nano-scale	Pb-free Bulk Ceramics and Powders 1	Thin Films Without Pb 1: HfO ₂ and Related Materials	Multiferroics 2	Devices and Functionality 1		
08:30 – 10:30							
10:00 – 11:00	Poster Session – Q & A						
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)		
AM2	Characterization Techniques 3: X-rays and Electrons	Pb-free Bulk Ceramics and Powders 2	Thin Films Without Pb 2: BiFeO ₃ and Bi-based Materials	Design and Modeling	Devices and Functionality 2		
11:00 – 13:00							
13:00 – 14:00	Lunch Buffet (Level 2)						
Venue →	Auditorium (Level 2)	Breakthrough (Level 4)	Discovery (Level 4)	Creation (Level 4)	Exploration (Level 4)		
PM1	Characterization Techniques 4: Big Data, Properties, and Crystallography	Pb-free Thin Films	Films Containing Pb	Phase Transitions and Structures	Energy Harvesting and Storage		
14:00 – 16:00							
16:00 – 16:30	Coffee/Tea With Snacks (Level 2)						
Venue →	Auditorium (Level 2)					Authors Remove Posters: 6 to 6:30pm Exhibitor Ship-out: 7 to 9pm	
Session Chairs	Orlando AUCIELLO, <i>University of Dallas, USA</i> ; Hong WANG, <i>Xi'an Jiatong University, China</i>						
16:30 – 17:15	Plenary 5 – Chunlin JIA, <i>Institute of Microstructure Research and Ernst Ruska-Centre for Microscopy and Spectroscopy with Electrons, Forschungszentrum Jülich, Germany, and Xi'an Jiaotong University, China</i> “Mapping Electric Dipole Moments in Oxide Ferroelectrics”						
17:15 – 18:00	Plenary 6 – Carlos Paz de ARAUJO, <i>University of Colorado-Colorado Springs, and Symetrix Corporation, USA</i> “The New Era of Correlated Electron Devices”						

Oral Presentation Schedule

Day 1 - Monday, May 25, 2015 / Room Auditorium / 10:45 - 12:15

Defects and Domains 1

Chair(s): Tomas Sluka, EPFL - Swiss Federal Institute of Technology in Lausanne, Switzerland

1	A-0491 Invited	Defect Engineering Toward Functional Oxides	Jaichan LEE ¹ , Minsoo CHOI ¹ , Euiyoung CHOI ¹ , H. JEON ¹ , Y. S. LEE ² , M. GU ³ , Y. TAKAMURA ³ , N. D. BROWNING ³ , S. SONG ⁴ , W. PICKETT ³ , C. PANAGOPOULOS ⁵ ¹ Sungkyunkwan University, South Korea, ² Soongsil University, South Korea, ³ University of California Davis, United States, ⁴ Lawrence Berkeley National Laboratory, United States, ⁵ Nanyang Technological University, Singapore
2	A-0467	Point Defects and Defect Complexes in Congruent LiNbO ₃	Yanlu LI ¹ , Simone SANNA ² , Wolf Gero SCHMIDT ² ¹ Shandong University, China, ² Universität Paderborn, Germany
3	A-0278	Probing of Local Polarization Dynamics in Uniaxial Sr _x Ba _{1-x} Nb ₂ O ₆ Single Crystals	Vladimir SHVARTSMAN ¹ , Jan DEC ² , Wolfgang KLEEMANN ¹ , Sergei V. KALININ ³ , Doru C. LUPASCU ¹ ¹ University Duisburg-Essen, Germany, ² University of Silesia, Poland, ³ Oak Ridge National Laboratory, United States
4	A-0056	Formation and Stability of Charged Domain Walls	Petr BEDNYAKOV ¹ , Tomas SLUKA ^{1,2} , Alexander K. TAGANTSEV ¹ , Nava SETTER ¹ ¹ EPFL Swiss Federal Institute of Technology, Switzerland, ² University of Geneva, Switzerland
5	A-0326	Mechanical Stability of Polar Defects in Perovskite Ferroelectrics	Florian SCHADER ¹ , Maxim MOROZOV ² , Espen WEFRING ² , Tor GRANDE ² , Kyle WEBBER ¹ ¹ Technische Universität Darmstadt, Germany, ² Norwegian University of Science and Technology, Norway

Day 1 - Monday, May 25, 2015 / Room Breakthrough / 10:45 - 12:30

Processing and Integration of Thin Films 1

Chair(s): Kazumi Kato, National Institute of Advanced Industrial Science and Technology, Japan

1	A-0059	Nanostructured Organic Ferroelectric Thin Films by Solution Micromoulding	Thomas LENZ ^{1,2} , Dong ZHAO ¹ , Ilias KATSOURAS ¹ , Kamal ASADI ¹ , Paul BLOM ^{1,2} , Dago M. DE LEEUW ^{1,3} ¹ Max Planck Institute for Polymer Research, Germany, ² Graduate School Materials Science in Mainz, Germany, ³ King Abdulaziz University, Saudi Arabia
2	A-0316 Invited	Printed Electronics with Functional Ceramics	M. NELO, J. JUUTI, Heli JANTUNEN University of Oulu, Finland
3	A-0098	Buckling Behavior of Piezoelectric Diaphragms for Highly Sensitive Structures of Ultrasonic Microsensors Controlled Through Intrinsic Stress of PZT Films	Kaoru YAMASHITA, Kaito ARAI, Hikaru TANAKA, Taiki NISHIUMI, Minoru NODA Kyoto Institute of Technology, Japan
4	A-0117	Hybrid Wafers Based on a "Silicon/PPLN Thin Film" Stack for Optical and Radio-Frequency Applications	Florent BASSIGNOT ¹ , Fabien HENROT ² , Mathieu CHAUVET ² , Ludovic GAUTHIER-MANUEL ² , Hervé MAILLOTTE ² , Sylvain BALLANDRAS ³ ¹ FEMTO Engineering, France, ² FEMTO-ST (Franche-Comté Electronique Mécanique Thermique et Optique – Sciences et Technologies), France, ³ Frec n sys, France

5	A-0284	Hydrogen Profile Measurement of PbLaZrTiO _x Capacitor with Conductive Electrode After Hydrogen Annealing	Yoko TAKADA ¹ , Taiga AMANO ¹ , Naoki OKAMOTO ¹ , Takeyasu SAITO ¹ , Kazuo KONDO ¹ , Takeshi YOSHIMURA ¹ , Norifumi FUJIMURA ¹ , Koji HIGUCHI ² , Akira KITAJIMA ² , Hideo IWAI ³ ¹ Osaka Prefecture University, Japan, ² Osaka University, Japan, ³ National Institute for Materials Science, Japan
6	A-0235	Flexible Piezoelectric Thin Films for Pressure Sensors Using Scanning Laser Lift-Off Method	Myoung-Sub NOH ^{1,2} , Chong-Yun KANG ^{1,2} ¹ KU-KIST Graduate School of Converging Science and Technology, South Korea, ² Korea Institute of Science and Technology, South Korea

Day 1 - Monday, May 25, 2015 / Room Discovery / 10:45 - 12:15

Ceramics 1: Lead-Free

Chair(s): Torsten Granzow, *Luxembourg Institute of Science and Technology, Luxembourg*

1	A-0257	Impedance Spectroscopy of Modified Na _{0.5} Bi _{0.5} TiO ₃ Leadfree Ceramics	Sujata SANGHI, K. KASWAN <i>Guru Jambheshwar University of Science & Technology, India</i>
2	A-0479	Temperature Dependence of High-Power Piezoelectric Properties for Bi-based Lead-Free Piezoelectric Ceramics	Hajime NAGATA, Y. YAMAMOTO, T. TAKENAKA <i>Tokyo University of Science, Japan</i>
3	A-0500	Reduced Dielectric Loss and Strain Hysteresis in Modified BiScO ₃ -PbTiO ₃ High Temperature Piezoelectric Solid Solutions	Jianguo CHEN, Jinrong CHENG <i>Shanghai University, China</i>
4	A-0207	Investigating Local Order in (K _x Na _{1-x}) _{0.5} Bi _{0.5} TiO ₃	Anton GOETZEE-BARRAL ¹ , T. J. STEVENSON ¹ , T. P. COMYN ¹ , T. USHER ² , J. L. JONES ² , M. DOLGOS ³ , A. J. BELL ¹ ¹ University of Leeds, United Kingdom, ² North Carolina State University, United States, ³ Oregon State University, United States
5	A-0132 Invited	Local Structure of Dipole Glasses BaTiO ₃ -BiScO ₃	Igor LEVIN <i>National Institute of Standards and Technology, United States</i>

Day 1 - Monday, May 25, 2015 / Room Creation / 10:45 - 12:15

Biomaterials

Chair(s): Qifa Zhou, *University of Southern California, United States*

1	A-0480 Invited	From Piezoelectric Biomaterials to Biocompatible Ferroelectrics	Brian RODRIGUEZ <i>University College Dublin, Ireland</i>
2	A-0528	Advances in Nanocomposite Design: Towards Multiferroic Biomaterials	Jennifer ANDREW, Emilie SECRET, Maeve BUDI <i>University of Florida, United States</i>
3	A-0023	Nanoscale Mechanical/Electromechanical Mapping of Porcine Cortical Bone Using Atomic Force Acoustic Microscopy and Piezoresponse Force Microscopy	Yao SUN, Xilong ZHOU, Faxin LI <i>Peking University, China</i>
4	A-0517 Invited	Phenotypic Personalized Medicine: Merging Nanomedicine with Engineering Optimization Platforms to Transform Combination Therapy	Dean HO <i>University of California, Los Angeles, United States</i>

Day 1 - Monday, May 25, 2015 / Room Exploration / 10:45 - 12:10

Memorial of Hans Schmid

Chair(s): Andrei Kholkin, *University of Aveiro, Portugal* and Vladimir Shur, *Ural Federal University, Russian Federation*

1	A-0539	Introduction (Special Session - Memorial of Hans Schmid)	Andrei L. KHOLKIN ¹ , Vladimir SHUR ² ¹ University of Aveiro, Portugal, ² Ural Federal University, Russian Federation
2	A-0540	Symmetry, Ferroelectricity, Ferromagnetism, and Magneto-electricity: Following a Visionary Giant	Nava SETTER ¹ , Jean-Pierre RIVERA ² ¹ EPFL Swiss Federal Institute of Technology, Switzerland, ² University of Geneva, Switzerland

3	A-0541	From Boracites to Multiferroic Relaxors	Zuo-Guang YE ^{1,2} ¹ Xi'an Jiaotong University, China, ² Simon Fraser University, Canada
4	A-0542	Professor Hans Schmid - Guide to a Renaissance in Multiferroics and Magnetoelectrics	Lane MARTIN University of California, Berkeley, United States
Day 1 - Monday, May 25, 2015 / Room Auditorium / 14:00 - 16:00			
Defects and Domains 2			
Chair(s): Huajun Liu, Argonne National Laboratory, United States			
1	A-0330 Invited	The Doping Effect of Polarization Charge at Charged Domain Walls in Wide-Bandgap Ferroelectrics	Tomas SLUKA ^{1,2} ¹ EPFL Swiss Federal Institute of Technology, Switzerland, ² University of Geneva, Switzerland
2	A-0450	Domain Walls, Local Electrical Conductivity and Macroscopic Piezoelectric Properties in BiFeO ₃	Tadej ROJAC ¹ , Hana URSIC ¹ , Julian WALKER ¹ , Andreja BENCAN ¹ , Barbara MALIC ¹ , Dragan DAMJANOVIC ² ¹ Jožef Stefan Institute, Slovenia, ² Swiss Federal Institute of Technology in Lausanne - EPFL, Switzerland
3	A-0512	Temperature Dependence of Nonlinear Permittivity in Perovskite Polydomain Ferroelectrics with Pinned Domain Walls	Pavel MOKRY, Katerina STEIGER Institute of Plasma Physics, Academy of Sciences of the Czech Republic, Czech Republic
4	A-0058	Switching Dynamics in Ferroelectric Thin Films	Dong ZHAO ¹ , Ilias KATSOURAS ¹ , Kamal ASADI ¹ , Paul W. M. BLOM ¹ , Dago M. DE LEEUW ^{2,3} ¹ Max Planck Institute for Polymer Research, Germany, ² Max-Planck Institute for Polymer Research, Germany, ³ King Abdulaziz University, Saudi Arabia
5	A-0202	Elastic Coupling Between Nonferroelastic Domain Walls	Konstantin SHAPOVALOV ¹ , Petr YUDIN ¹ , Alexander K. TAGANTSEV ¹ , Eugene ELISEEV ² , Anna MOROZOVSKA ² , Nava SETTER ¹ ¹ EPFL Swiss Federal Institute of Technology, Switzerland, ² National Academy of Sciences of Ukraine, Ukraine
6	A-0499 Invited	Controlled Patterns, Properties, and Displacement of Ferroelectric Domain Walls	Mahamudu MTWEBA, Ludwig FEIGL, Tomas SLUKA, Petr YUDIN, Petr BEDNYAKOV, Leo MCGILLY, Arnaud CRASSOUS, Xian-Kui WEI, Alexander KVASOV, Cosmin SANDU, Igor STOLICHNOV, Alexander K. TAGANTSEV, Nava SETTER EPFL Swiss Federal Institute of Technology, Switzerland
Day 1 - Monday, May 25, 2015 / Room Breakthrough / 14:00 - 15:30			
Processing and Integration of Thin Films 2			
Chair(s): Jing-Feng Li, Tsinghua University, China			
1	A-0404	A New Performance Regime for Pyroelectric Conversion Materials	Brendan HANRAHAN ¹ , Luz SANCHEZ ² , Nick JANKOWSKI ¹ , Nikolay TER-GABRIELIAN ¹ , C. Mike WAITS ¹ , Ronald POLCAWICH ¹ ¹ U.S. Army Research Laboratory, United States, ² VerAvanti Inc, United States
2	A-0411	High Performance of Piezoelectric Micromachined Ultrasonic Transducer (pMUT) by Granule Spray in Vacuum Process (GSV)	Jungho RYU ¹ , Joontaek JUNG ² , Hongsoo CHOI ² , Woon-Ha YOON ¹ , Dong-Soo PARK ¹ , Jong-Jin CHOI ¹ , Cheol-Woo AHN ¹ , Jong-Woo KIM ¹ , Hyung-Dong HAHN ¹ ¹ Korea Institute of Materials Science (KIMS), South Korea, ² Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea
3	A-0478	Sputter Deposition of Epitaxial Yttria-Stabilized Zirconia (YSZ) Buffer Layer on Large Diameter Si Wafer for Epitaxial PZT Thin Film Transducer	Shinya YOSHIDA ¹ , Shinsuke NISHIZAWA ¹ , Takeshi HAYASAKA ¹ , Kiyotaka WASA ² , Shuji TANAKA ¹ ¹ Tohoku University, Japan, ² Yokohama City University, Japan

4	A-0407	The Orientation Controlled PbLaZrTiO _x Capacitor for Improved Reliabilities	Takeyasu SAITO ¹ , Taiga AMANO ¹ , Yoko TAKADA ¹ , Naoki OKAMOTO ¹ , Kazuo KONDO ¹ , Takeshi YOSHIMURA ¹ , Norifumi FUJIMURA ¹ , Koji HIGUCHI ² , Akira KITAJIMA ² ¹ Osaka Prefecture University, Japan, ² Osaka University, Japan
5	A-0239	Epitaxial PbZr _x Ti _{1-x} O ₃ Ferroelectric Bilayers with Giant Electromechanical Properties	Hsin-Hui HUANG ¹ , Esther HUANG ¹ , Qi ZHANG ¹ , Ronald MARAN ¹ , Osami SAKATA ^{2,3} , Yoshitaka EHARA ^{1,3} , Takahisa SHIRAISHI ³ , Hiroshi FUNAKUBO ³ , Paul MUNROE ¹ , Valanoor NAGARAJAN ¹ ¹ The University of New South Wales, Australia, ² National Institute for Materials Science, Japan, ³ Tokyo Institute of Technology, Japan
6	A-0427	Synthesis and Integration of Pb(Zr _x Ti _{1-x})O ₃ Films of Unique Thicknesses to Break into New Fields of Application	Dirk KADEN ¹ , D. KOESSLER ² , J. SICHELSCHEIDT ² , A. JAKOB ³ , B. WAGNER ¹ , T. JUNG ² , F. TIEFENSEE ³ ¹ Fraunhofer Institute for Silicon Technology (ISIT), Germany, ² Fraunhofer Institute for Surface Engineering IST, Germany, ³ Fraunhofer Institute for Biomed. Engineering (IBMT), Germany

Day 1 - Monday, May 25, 2015 / Room Discovery / 14:00 - 15:30

Ceramics 2: Lead-Free

Chair(s): Hajime Nagata, Tokyo University of Science, Japan

1	A-0175	The Gap Between Small Signal and Large Signal Piezoelectric Response in CaZrO ₃ Doped KNN-Based Ceramics	Jin-Song ZHOU, Ke WANG, Fang-Zhou YAO, Qi LI, Jing-Feng LI <i>Tsinghua University, China</i>
2	A-0013	Extrinsic Domain Wall Motion in High-Property (1-x)Ba(Zr _{0.2} Ti _{0.8})O ₃ -x(Ba _{0.7} Ca _{0.3})TiO ₃ Piezoceramics: Major Contributor	Jinghui GAO ¹ , Xinghao HU ¹ , Fei LI ¹ , Lisheng ZHONG ² , Xiaobing REN ^{2,3} ¹ Xi'an Jiaotong University, China, ² Xi'an Jiaotong University, China, ³ Ferroic Physics Group, National Institute for Materials Science, Japan
3	A-0055	Phase Transformation Sequence and the Origin of High Piezoelectricity Around the Morphotropic Phase Boundary in Ba(Zr _{0.2} Ti _{0.8})O ₃ -x(Ba _{0.7} Ca _{0.3})TiO ₃ Ceramics	Le ZHANG ¹ , Ming ZHANG ² , Chao ZHOU ¹ , Yonggang YAO ¹ , Dezhen XUE ¹ , Xiaojie LOU ¹ , Xiaobing REN ^{1,3} ¹ Xi'an Jiaotong University, China, ² Xi'an Jiaotong University, China, ³ National Institute for Materials Science, Japan
4	A-0474	Diffuse Phase Transition and Electrostrictive Properties in Fe- and Mn- Doped Lead-Free 0.5Ba(Zr _{0.2} Ti _{0.8})O ₃ -0.5(Ba _{0.7} Ca _{0.3})TiO ₃ Piezoelectric Ceramics	Li JIN, Runping GUO, Fei LI <i>Xi'an Jiaotong University, China</i>
5	A-0142	High Temperature Dielectric and Electrical Properties of (1-x)Ba _{0.8} Ca _{0.2} TiO ₃ -xBi(Mg _{0.5} Ti _{0.5})O ₃ Ceramics	Kashif SHAMIM, Suman KUMARI, Seema SHARMA <i>A N College, India</i>
6	A-0409	Phase Transition, Ferroelectric and Piezoelectric Properties of Lead-free Piezoelectric 0.75BaTiO ₃ -xBaZrO ₃ -(0.25-x)CaTiO ₃ Ceramics	Nopsiri CHAIYO ¹ , N. VITTAYAKORN ¹ , D.P. CANN ² ¹ King Mongkut's Institute of Technology Ladkrabang, Thailand, ² Oregon State University, United States

Day 1 - Monday, May 25, 2015 / Room Creation / 14:00 - 16:00

Local Characterization

Chair(s): Brian Rodriguez, University College Dublin, Ireland

1	A-0531 Invited	Quantitative Measurements of Electromechanical Response with a Metrological Atomic Force Microscope	Roger PROKSCH, Aleks LABUDA <i>Asylum Research Oxford Instruments, United States</i>
2	A-0328	Electrical Boundary Conditions in Ferroelectric Ultrathin Films	Christian WEYMANN ¹ , Céline LICHTENSTEIGER ¹ , Stephanie FERNANDEZ-PENA ¹ , Pavlo ZUBKO ² , Patrycja PARUCH ¹ , Jean-Marc TRISCONI ¹ ¹ University of Geneva, Switzerland, ² University College London, United Kingdom

3	A-0052	Tuning of the Depolarization Field, Built-in Voltage and Nanodomain Structure in Ferroelectric Thin Films	Céline LICHTENSTEIGER ¹ , Christian WEYMANN ¹ , Stephanie FERNANDEZ-PENA ¹ , Pavlo ZUBKO ² , Patrycja PARUCH ¹ , Jean-Marc TRISCONÉ ¹ ¹ University of Geneva, Switzerland, ² University College London, United Kingdom
4	A-0428	Towards Reversible Control of Domain Wall Conduction in Pb(Zr _{0.2} Ti _{0.8})O ₃ Thin Films	Iaroslav GAPONENKO ¹ , Philippe TÜCKMANTEL ¹ , Karthik JAMBUNATHAN ² , Lane MARTIN ³ , Patrycja PARUCH ¹ ¹ University of Geneva, Switzerland, ² University of Illinois, Urbana-Champaign, United States, ³ University of California, Berkeley, United States
5	A-0449	Water Effects on Surface Screening of Ferroelectric Materials and PFM	N. DOMINGO ¹ , K. CORDERO ¹ , A. CALO ¹ , Albert VERDAGUER ² ¹ Institut Català de Nanociència i Nanotecnologia (ICN2), Spain, ² Centre d'Investigació en Nanociència i Nanotecnologia (CIN2), Spain
6	A-0379 Invited	Rewritable Metallic Channels from Curved Ferroelectric Domain Walls	Igor STOLICHNOV EPFL Swiss Federal Institute of Technology, Switzerland

Day 1 - Monday, May 25, 2015 / Room Exploration / 14:00 - 16:00

Energy Harvesting and Capacitor Devices

Chair(s): Lei Zhang, *Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore*

1	A-0307	Vibration Reduction of Multi-Layer Ceramic Capacitor Considering Piezoelectric and Electrostriction Effect	Dongjoon KIM, Byung-Han KO, Sanggeuk JEONG, No-Cheol PARK, Young-Pil PARK <i>Yonsei University, South Korea</i>
2	A-0024	Energy Harvesting from Bimorph Type Piezoelectric Diaphragm Multilayer Structure with Mechanically Induced Pre-Stress	Jaakko PALOSAARI, Jari JUUTI, Heli JANTUNEN <i>University of Oulu, Finland</i>
3	A-0135	Simulation of Vibration Mode of Muti-Beam Piezoelectric MEMS Vibration Energy Harvesters	Shuichi MURAKAMI ¹ , Takeshi YOSHIMURA ² , Kento KARIYA ² , Takamasa NAKAJIMA ¹ , Takayuki NAGATAKI ¹ , Takuo NAKADE ¹ , Kazuo SATOH ¹ , Nofirumi FUJIMURA ² ¹ Technology Research Institute of Osaka Prefecture, Japan, ² Osaka Prefecture University, Japan
4	A-0209	Flexible PZT/Aluminium Thin Films Characterizations for Energy Harvesting at Very Low Frequencies (~ 1 Hz)	Raynald SEVENO, Benoit GUIFFARD, Thibault DUFAY, Jean-Christophe THOMAS <i>Université de Nantes, France</i>
5	A-0220	Electromechanical Coupling of Piezoelectric MEMS Vibrational Energy Harvesters Using BiFeO ₃ Films	Takeshi YOSHIMURA ¹ , Kento KARIYA ¹ , Shuichi MURAKAMI ² , Nofirumi FUJIMURA ¹ ¹ Osaka Prefecture University, Japan, ² Technology Research Institute of Osaka Prefecture, Japan
6	A-0247	Multi-Functions of Ferroelectrics for Energy Autonomous Sensors and Transducers	Kui YAO, Szu Cheng LAI, Yi Fan CHEN, Chin Yaw TAN, Ivan Chee KIANG TAN, Lei ZHANG <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
7	A-0129 Invited	Breaking Crystal Symmetry – Energy Conversion with Functional Oxide Films and Nanostructures	Steve DUNN <i>Queen Mary University of London, United Kingdom</i>

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Defects and Domains 3

Chair(s): Jaichan Lee, *Sungkyunkwan University, Korea, South*

1	A-0269	Effect of Electron Beam on Ferroelectric Domain Patterns in Nanostructures	Nathaniel NG, Rajeev AHLUWALIA <i>Institute of High Performance Computing, Singapore</i>
2	A-0360	Multiferroic Domains Near a Magneto-Electric Quantum Critical Point	R. SIBILLE, M. BARTKOWIAK, L. FOLKERSAND, Michel KENZELMANN <i>Paul Scherrer Institut, Switzerland</i>

3	A-0027 Invited	Piezoelectricity and Domain Characteristics of Sol-Gel-Processed Nb-Doped Pb(Zr,Ti)O ₃ Thin Films on SrTiO ₃ Substrates	Jing-Feng LI ¹ , Qi YU ¹ , Jiangyu LI ² ¹ Tsinghua University, China, ² University of Washington, United States
4	A-0033 Invited	Polarization Controlled Phenomena in Ferroelectric Thin Films	Lucian PINTILIE, Ioana PINTILIE, Cristian Mihail TEODORESCU, Corneliu GHICA, Iuliana PASUK, Andra BONI, Cristina CHIRILA, Luminita HRIB, Lucian TRUPINA, Raluca NEGREA, Mariana STEFAN, Daniela GHICA, Viorica STANCU National Institute of Materials Physics, Romania
5	A-0246	Seeing Disorder in Lead-Free Ferroelectrics with Diffuse X-ray Scattering	Patrick TUNG ¹ , Marton MAJOR ² , John DANIELS ¹ ¹ University of New South Wales, Australia, ² Technical University Darmstadt, Germany

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Processing and Integration of Thin Films 3

Chair(s): Wei Ren, Xi'an Jiaotong University, China

1	A-0093 Invited	PZT PiezoMEMS with Integrated ZnO Electronics	M. WALLACE, J. I. RAMIREZ, K. G. SUN, R. T. H. WILKE, R. JOHNSON-WILKE, T. N. JACKSON, Susan TROLIER-MCKINSTRY The Pennsylvania State University, United States
2	A-0372	All Oxide Epitaxial Piezo-MEMS Devices : Fabrication, Understanding and Improvement via Microstructural Engineering	Nirupam BANERJEE, G. KOSTER, E. P. HOUWMAN, G. RIJNDERS University of Twente, Netherlands
3	A-0368	IrO ₂ Top Electrodes for PbZr _{0.52} Ti _{0.48} O ₃ Functionality	Daniel POTREPKA ¹ , Glen FOX ² , Ronald POLCAWICH ¹ ¹ U.S. Army Research Laboratory, United States, ² Fox Materials Consulting, LLC, United States
4	A-0301	Integration of Pb(Zr,Ti)O ₃ Thin Films with Photo-Sensitive Polymer	Takashi OKUBO, Kensuke KANDA, Takayuki FUJITA, Kazusuke MAENAKA University of Hyogo, Japan
5	A-0325	Piezoelectric Response in Epitaxial PZT 1D-Nanorods and 2D-Thin Films	Tomoaki YAMADA ¹ , Jun YASUMOTO ¹ , Daisuke ITO ¹ , Osami SAKATA ^{2,3} , Takanori KIGUCHI ⁴ , Hidenori TANAKA ³ , Yoshitaka EHARA ³ , Shintaro YASUI ³ , Takahiro OIKAWA ³ , Hiroshi FUNAKUBO ³ , Masahito YOSHINO ¹ , Takanori NAGASAKI ¹ ¹ Nagoya University, Japan, ² National Institute for Materials Science, Japan, ³ Tokyo Institute of Technology, Japan, ⁴ Tohoku University, Japan
6	A-0424 Invited	Combined Experimental and Computational Methods Reveal the Evolution of Buried Interfaces During Synthesis of PZT Thin Films from Solution	Jacob JONES ¹ , J. M. LE BEAU ¹ , J. NIKKEL ¹ , A. ONI ¹ , H. DYCUS ¹ , C. COZZAN ² , S. MHIN ² , J. C. NINO ² , F. Y. LIN ² , A. CHERNATYNSKIY ² , S. SINNOTT ² , G. BRENNECKA ³ , J. IHLEFELD ⁴ ¹ North Carolina State University, United States, ² University of Florida, United States, ³ Colorado School of Mines, United States, ⁴ Sandia National Laboratories, United States

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Ceramics 3: Fe-based and Non-perovskite

Chair(s): Igor Levin, National Institute of Standards and Technology, United States

1	A-0233	Preparation and Dielectric Properties of Al ₂ O ₃ -Modified Ba(Fe _{0.5} Nb _{0.5})O ₃ Composite Ceramics	Zhuo WANG, Chun WANG, Yongfei WEN, Haijuan LI, Mingrui FANG Shaanxi University of Science and Technology, China
2	A-0496	Giant Electrostriction in Doped Bi ₂ O ₃ Ceramics	Nimrod YAVO ¹ , Alaric SMITH ² , Roman KOROBKO ¹ , Peter SLATER ² , Igor LUBOMIRSKY ¹ ¹ Weizmann Institute of Science, Israel, ² University of Birmingham, United Kingdom

3	A-0367	Co-Precipitated Magnetoplumbite Nanoparticles and Their Structural and Dielectric Properties	Muhammad ANIS-UR-REHMAN, Zeenat KHAN, Seemab KANWAL, Fatima TUZ-ZAHRA <i>COMSATS Institute of Information Technology, Pakistan</i>
4	A-0472	Dielectric Properties and Phase Diagram in $Ba_{1-x}Sr_xAl_2O_4$	E. TANAKA ¹ , Y. ISHII ¹ , H. TSUKASAKI ¹ , S. KAWAGUCHI ² , Y. KUBOTA ¹ , M. OSADA ³ , Shigeo MORI ¹ ¹ <i>Osaka Prefecture University, Japan</i> , ² <i>Spring-8, Japan Synchrotron Radiation Research Institute (JASRI), Japan</i> , ³ <i>National Institute of Materials Science (NIMS), Japan</i>
5	A-0485	Dielectric Properties of $Sr_3Co_2Fe_{24}O_{41}$ Z-Type Hexaferrite	Rujun TANG ¹ , Chen JIANG ¹ , Yan LIANG ¹ , Xin ZHANG ² , Haiyan WANG ³ , Hao YANG ¹ ¹ <i>Soochow University, China</i> , ² <i>Guilin University of Electronic Technology, China</i> , ³ <i>Texas A&M University, United States</i>
6	A-0259	Effect of Sintering Time on the Crystal Structure in $Bi_{0.8}Nd_{0.2}FeO_3$ Multiferroics	Ashish AGARWAL, O. SINGH <i>Guru Jambheshwar University of Science & Technology, India</i>
7	A-0216	Polar Nanoregions and Their Influence: A Case Study of Neodymium Doped $Ca_{0.28}Ba_{0.72}Nb_2O_6$	Chandra Shekhar PANDEY ¹ , H. ZHANG ² , H. YU ² , D. GOBELJIC ³ , V. SHVARTSMAN ³ , J. WANG ² , D. C. LUPASCU ³ , J. SCHREUER ¹ ¹ <i>Ruhr University Bochum, Germany</i> , ² <i>Shandong University, China</i> , ³ <i>University of Duisberg-Essen, Germany</i>

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Capacitors and Energy Storage Materials

Chair(s): Steve Dunn, Queen Mary University of London, United Kingdom

1	A-0179	Optimized Microstructure and Enhanced Breakdown Strength in $Ca_{1-x}Sr_xTiO_3$ Solid Solutions	Lin ZHANG, Hanxing LIU, Hua HAO, Minghe CAO, Zhonghua YAO <i>Wuhan University of Technology, China</i>
2	A-0189	Energy Storage Properties of BNT-BT Based Solid Solution	Qi XU, Hanxing LIU, Hua HAO, Minghe CAO, Zhonghua YAO <i>Wuhan University of Technology, China</i>
3	A-0080 Invited	Dielectrics for MLCC in Advanced Power Electronics	Koichi BANNO <i>Murata Manufacturing Co., Ltd., Japan</i>
4	A-0289	Optimization of PZT Dielectric Properties by Doping with La, Nb or Mn Elements	Gwenael LE RHUN, Sylvain PELLOQUIN, Ibrahima GUEYE, Warda BENHADJALA, Christel DIEPPEDALE, Jennifer GUILLAUME, Philippe RENAUX, Henri SIBUET <i>CEA-Leti: Laboratoire d'électronique des technologies de l'information, France</i>
5	A-0282	Resonance Terahertz Electrodynamics of Domain Walls in Thin Ferroelectric Films: Effect of Negative Capacitance	Igor LUKYANCHUK <i>University of Picardie, France</i>

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Biomedical, Ultrasonic, and Ferroelectric Field Effect Devices

Chair(s): Kenji Uchino, The Pennsylvania State University, United States

1	A-0459 Invited	Piezoelectric Films Ultrahigh Frequency Lens Transducer for Biomedical Applications	Qifa ZHOU, Chunlong FEI, Zeyu CHEN, Teng MA, Xiaoyang CHEN, K. Kirk SHUNG <i>University of Southern California, United States</i>
2	A-0272 Invited	Robust Hydrophone with Hydrothermal PZT Thick Film Vibrator and Titanium Front Layer Available in High Power Ultrasound Field	Nagaya OKADA ¹ , Shinichi TAKEUCHI ² ¹ <i>Honda Electronics Co., Ltd., Japan</i> , ² <i>Toin University of Yokohama, Japan</i>

3	A-0516 Invited	Development of Inorganic Theranostic Platform with Built-in Redundancy	Sandwip DEY ¹ , Xiaodi SUN ¹ , Robert MARZKE ² , Vinay NAGARAJ ³ ¹ Ira A. Fulton College of Engineering, United States, ² Arizona State University, United States, ³ Midwestern University, United States
4	A-0303	Optimization of Short Channel Ferroelectric MOSFET for Low Power Circuit Application	Yang LI ¹ , Yong LIAN ¹ , Kui YAO ² , Ganesh SAMUDRA ¹ ¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
5	A-0016	Al _x Ga _{1-x} Sb/GaAs Heterojunction Tunneling Field-Effect Transistor (TFET) For Steep Subthreshold Swing and High On-State Current	L. PENG, Minghua TANG, X. D. WANG Xiangtan University, China

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Defects and Domains 4

Chair(s): Andrew Bell, University of Leeds, United Kingdom

1	A-0349 Invited	Ferroelectric Patterning: Fight of Order with Disorder	Vladimir SHUR Ural Federal University, Russian Federation
2	A-0243 Invited	Nano- and Macro-Scale Probes of Strain Gradient and Flexoelectric Effects on the Crystal and Domain Structure and Properties of Ferroelectric Thin Films	A. R. DAMODARAN, J. C. AGAR, Ruijuan XU, Shishir PANDYA, Liv DEDON, Sahar SAREMINAEINI, Lane MARTIN University of California, Berkeley, United States
3	A-0154 Invited	Optimizing Domain Wall Conductivity in Ferroelectric Domain Walls	Lukas M. ENG ¹ , A. HAUBMANN ¹ , T. KÄMPFE ¹ , P. REICHENBACH ¹ , M. SCHRÖDER ¹ , A. THIESSEN ¹ , D.A. BONNELL ² , J. POPPE ¹ , E. SOERGEL ³ , T. WOIKE ¹ ¹ Technische Universität Dresden, Germany, ² University of Pennsylvania, United States, ³ University of Bonn, Germany
4	A-0384	Controlling Domain Wall Roughness and Switching Dynamics via Environmental Conditions and Defect Density in Ferroelectric Thin Films	Cédric BLASER ¹ , Jill GUYONNET ¹ , Sophia EHRENSPERGER ¹ , Lane MARTIN ² , Sebastian BUSTINGORRY ³ , Patrycja PARUCH ¹ ¹ University of Geneva, Switzerland, ² University of California, Berkeley, United States, ³ The National Scientific and Technical Research Council (CONICET), Argentina

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Novel Processing

Chair(s): Barbara Malic, Jožef Stefan Institute, Slovenia

1	A-0083 Invited	Microwave Processing of Electroceramics	Dinesh K. AGRAWAL The Pennsylvania State University, United States
2	A-0141	Synthesis and Reaction Kinetics for KNN-Based Ceramic with Ultrasonic Irradiation	Ivan Chee KIANG TAN ¹ , Kui YAO ¹ , Ying JIANG ¹ , Santiranjan SHANNIGRAHI ¹ , Dennis Cheng Cheh TAN ¹ , Sritharan THIRUMANY ² , Jan MA ² ¹ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, ² School of Materials Science and Engineering, Nanyang Technological University, Singapore
3	A-0331	Sub-Micron Domain Engineering in Lithium Niobate by Laser Light Irradiation of Patterned Chromium	Andreas BOES ¹ , Vijay SIVAN ¹ , Guanghui REN ¹ , Didit YUDISTIRA ¹ , Sakellaris MAILIS ² , Elisabeth SOERGEL ³ , Arnan MITCHELL ¹ ¹ RMIT University, Australia, ² University of Southampton, United Kingdom, ³ University of Bonn, Germany

4	A-0470	Microwave Processing of Smart Materials and Advantages	Santirajan SHANNIGRAHI, Ivan Tan CHEE KIANG <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
5	A-0166	Epitaxial (001) BiFeO ₃ Thin-Films with Excellent Ferroelectric Properties by Chemical Solution Deposition- The Role of Gelation	Qi ZHANG, Valanoor NAGARAJAN, Owen STANDARD <i>The University of New South Wales, Australia</i>
6	A-0096	Synthesis of (h00) Oriented Perovskite Na _{0.5} Bi _{0.5} TiO ₃ Microplatelets by a Topochemical Microcrystal Conversion Method	Ali HUSSAIN, J. U. RAHMAN, A. MAQBOOL, R. A. MALIK, M-H. KIM, T-K. SONG, W-J. KIM <i>Changwon National University, South Korea</i>
7	A-0046	Low Temperature Sintering of BiNT Based Ceramics	Gregory YESNER, Max KUCIEJ, Ahmad SAFARI <i>Rutgers University, United States</i>

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Soft Materials and Composites

Chair(s): Hong Wang, Xi'an Jiaotong University, China

1	A-0130	Poly(vinylidene fluoride) (PVDF)-Based Nonlinear Dielectric Materials for High-Density Energy Storage	Mojtaba RAHIMABADY ¹ , Meysam SHARIFZADEH MIRSHEKARLOO ¹ , Shuting CHEN ¹ , Li QUN XU ² , Saeid ARABNEJAD ² , Li LU ² , Kui YAO ¹ ¹ <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, ² National University of Singapore, Singapore</i>
2	A-0319	Polarization Orientation and Enhanced Properties in Piezoelectric P(VDF-TrFE) Nanotube Array	Weng Heng LIEW ¹ , Meysam SHARIFZADEH MIRSHEKARLOO ² , Shuting CHEN ² , Kui YAO ² , Francis Eng Hock TAY ¹ ¹ <i>National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
3	A-0346	Polarization Orientation and Energy Harvesting Performance of PVDF-TrFE Nanotubes	Venkateswarlu BHAVANASI ¹ , Damar Yoga KUSUMA ¹ , Pankaj SHARMA ² , Alexei GRUVERMAN ² , Pooi See LEE ¹ ¹ <i>Nanyang Technological University, Singapore, ² University of Nebraska- Lincoln, United States</i>
4	A-0169	Giant Strain and Compling Effects of Relaxor/Ferroelectric Lead-Free Composite Piezoceramics	Haibo ZHANG ¹ , Claudia GROH ² , Qi ZHANG ³ , Wook JO ⁴ , Kyle G. WEBBE ² , Jürgen RÖDEL ² ¹ <i>Huazhong University of Science and Technology, China, ² Technische Universität Darmstadt, Germany, ³ The University of New South Wales, Australia, ⁴ Ulsan National Institute of Science and Technology, South Korea</i>
5	A-0351	Patterning and Nanoscale Characterization of Ferroelectric Amino Acid β-glycine	Ensieh SEYEDHOSSEINI ¹ , Daria VASILEVA ² , Semen VASILEV ² , Alla NURAEVA ² , Pavel ZELENOSKIY ² , Vladimir SHUR ² , Andrei L. KHOLKIN ¹ ¹ <i>University of Aveiro, Portugal, ² Ural Federal University, Russian Federation</i>
6	A-0356	Electrical Properties of 0-3 Ba(Fe _{1/2} Nb _{1/2})O ₃ -PVDF Composites	K. PRASAD ¹ , K.P. CHANDRA ² , A.R. KULKARNI ³ ¹ <i>Aryabhatta Knowledge University, India, ² S.M. College, India, ³ Indian Institute of Technology, India</i>
7	A-0481	Polyaniline/Polyvinylidene Blends for Pyroelectric Sensor	Moataz Bellah SOLIMAN, Shaker EBRAHIM, M. B. TAYEL, Ahmed ELSHAER <i>Alexandria University, Egypt</i>

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Multifunctional Materials and Cross-Coupling Effects 1			
Chair(s): Jon Ihlefeld, <i>Sandia National Laboratories, United States</i>			
1	A-0532 Invited	Functional Perovskites for Photovoltaic Applications	Riad NECHACHE <i>National Institute of Scientific Research, Energy, Materials and Telecommunications (INRS-EMT), Canada</i>
2	A-0489 Invited	Morphotropic Phase Boundary – A New Route Towards Enhanced Ferroelectric Photovoltaic Effect	Lu YOU ¹ , Yang ZHOU ¹ , Liang FANG ² , Junling WANG ¹ ¹ <i>Nanyang Technological University, Singapore,</i> ² <i>Soochow University, China</i>
3	A-0159 Invited	Polarization-Enabled Electronic Properties of Hybrid 2D-Ferroelectric Structures	Alexei GRUVERMAN <i>University of Nebraska-Lincoln, United States</i>
4	A-0158	Influence of Ferroelectric Dipole on the Photocatalytic Activity of BaTiO ₃ /α-Fe ₂ O ₃	Yongfei CUI, Steve DUNN <i>Queen Mary University of London, United Kingdom</i>
5	A-0148	Enhanced Room-Temperature Electrocaloric Effect in Lead-Free BaTi _{1-x} Sn _x O ₃ Ceramics	Xiaojie LOU ¹ , Z.D. LUO ¹ , D.W. ZHANG ¹ , Y. LIU ² , D. ZHOU ¹ , Y.G. YAO ¹ , C.Q. LIU ¹ , B. DKHIL ² , X.B. REN ¹ ¹ <i>Xi'an Jiaotong University, China,</i> ² <i>CNRS-Ecole Centrale Paris, France</i>
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PiezoMEMS, Actuators and Sensors			
Chair(s): Donglei Fan, <i>University of Texas at Austin, United States</i>			
1	A-0380 Invited	PiezoMEMS Actuators for RF Systems	Ronald POLCAWICH, J. S. PULSKAMP, S. BEDAIR, R. Q. RUDY, M. TELLERS <i>U.S. Army Research Laboratory, United States</i>
2	A-0072	Drive Techniques of Piezomotors	Kenji UCHINO <i>The Pennsylvania State University, United States</i>
3	A-0336	In-situ Strain/Vibration Monitoring with Polymer Piezoelectric Coating Sensors	Chin Yaw TAN ¹ , Shuting CHEN ¹ , Yi Fan CHEN ¹ , Hon Yu Peter NG ² , Gaunekar AJIT ² , Kui YAO ¹ ¹ <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore,</i> ² <i>ASM Technology, Singapore</i>
4	A-0163 Invited	Review on Piezoelectric Actuators/Micromotors and Their Applications	Shuxiang DONG <i>Peking University, China</i>
5	A-0213	Shape Evolution and Enhanced Sensing and Functionalization of RE-OH Nanostructures	Muhammad ANIS-UR-REHMAN ¹ , Ali ABDULLAH ^{1,2} , A. S. SALEEMI ¹ ¹ <i>COMSATS Institute of Information Technology, Pakistan,</i> ² <i>University of Management and Technology, Pakistan</i>
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Fundamentals and Theory			
Chair(s): Dragan Damjanovic, <i>Swiss Federal Institute of Technology in Lausanne - EPFL, Switzerland</i>			
1	A-0274 Invited	Ferroelectrics From First Principles and Materials by Design	Turan BIROL <i>Rutgers University, United States</i>
2	A-0065	A Universal Relationship Between the Piezoelectric Charge Coefficient and the Electromechanical Coupling Coefficient	Andrew BELL <i>University of Leeds, United Kingdom</i>
3	A-0283	Aging in Ferroelectrics: An Overview of Recent Theoretical Concepts and Experiments	Yuri GENENKO ¹ , Julia GLAUM ² , Michael HOFFMANN ³ , Karsten ALBE ¹ ¹ <i>Technische Universität Darmstadt, Germany,</i> ² <i>University of New South Wales, Australia,</i> ³ <i>Karlsruhe Institute of Technology, Germany</i>
4	A-0140	Piezoelectricity Across a Strain-Induced Isosymmetric Ferri-To-Ferroelectric Transition	Gaoyang GOU ¹ , James RONDINELLI ² ¹ <i>Xi'an Jiaotong University, China,</i> ² <i>Northwestern University, United States</i>

5	A-0177	Origin of Ultrahigh Piezoelectric Property of [001]-Oriented Ferroelectric Single Crystals at the Morphotropic Phase Boundary	Xiaoqin KE ¹ , Yunzhi WANG ^{1,2} , Xiaobing REN ¹ ¹ Xian Jiaotong University, China, ² The Ohio State University, United States
6	A-0245 Invited	Reconsidering Dielectric Breakdown Mechanisms for Realizing High-Temperature Capacitors	Takaaki TSURUMI, M. YAMAZAKI, T. HOSHINA, H. TAKEDA Tokyo Institute of Technology, Japan

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Sintering and Growth

Chair(s): Dinesh Agrawal, Pennsylvania State University, United States

1	A-0044	Grain Growth Investigations in PIN-PMN-PT from BT and BZT Nucleus Grains	Laura STOICA, A.J. BELL University of Leeds, United Kingdom
2	A-0092	Pb(Mg _{1/3} Nb _{2/3})O ₃ -Pb(Yb _{1/2} Nb _{1/2})O ₃ -PbTiO ₃ Ternary System: Processing, Properties and Transducer Application	Cihangir DURAN ¹ , Hasan GÖÇMEZ ² , Cem ORHUN ³ , İstek TATAR ³ , Erdem AKÇA ⁴ ¹ Yıldırım Beyazıt University, Turkey, ² Dumlupınar University, Turkey, ³ Meteksan Savunma Sanayii A.Ş., Turkey, ⁴ Gebze Technical University, Turkey
3	A-0121	PMN-PT Crystal of Less Defects and More Uniformity	Zibo JIANG Innovia Materials (Shanghai) Co., Ltd, China
4	A-0217	Effects of Al Doping on Crystal Growth and Piezoelectric Properties of Ca ₃ NbGa ₃ Si ₂ O ₁₄ Single Crystals	Yuui YOKOTA, Tetsuo KUDO, Yuji OHASHI, Andrey MEDVEDEV, Shunsuke KUROSAWA, Kei KAMADA, Akira YOSHIKAWA Tohoku University, Japan
5	A-0219	Growth of Ca ₃ Ta(Ga _{1-x} Al _x) ₃ Si ₂ O ₁₄ Single Crystals and Their Piezoelectric Properties	Tetsuo KUDO, Yuui YOKOTA, Yuji OHASHI, Yasuhiro SHOJI, Kei KAMADA, Andrey MEDVEDEV, Shunsuke KUROSAWA, Akira YOSHIKAWA Tohoku University, Japan
6	A-0224	Optical and Electric Properties of Transparent PMN-PT Based Ceramics Prepared by Conventional Sintering	Ichiro FUJII, R. YOSHIDA, H. ONO, Takahiro WADA Ryukoku University, Japan
7	A-0277	Structure and Dielectric Properties of Bi ₂ O ₃ Doped BaTiO ₃ -(Na _{1/4} Bi _{3/4} (Mg _{1/4} Ti _{3/4})O ₃ Lead-free Ceramics	Xuechen HUANG, Hanxing LIU, Hua HAO, Yue SUN, Chuyu PENG, Minghe CAO Wuhan University of Technology, China
8	A-0445	Effect of Milling Time on the Electrical Properties of 0.99Pb(Zr _{0.53} Ti _{0.47})O ₃ -0.01Bi(Y _{0.7} Fe _{0.3})O ₃ Piezoelectric Ceramics	Arjin BOONRUANG, Saengdoen DAUNGDAW, Piyalak NGERNCHUKLIN, Chutima EAMCHOTCHAWALIT Thailand Institute of Scientific and Technological Research, Thailand

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Single Crystals

Chair(s): Zuo-Guang Ye, Simon Fraser University, Canada

1	A-0343	Anisotropy of Ferroelectric & Relaxor Properties in (1-x)Bi _{1/2} Na _{1/2} TiO ₃ - xBaTiO ₃ Single Crystals with Different Symmetries	Torsten GRANZOW ¹ , Deborah SCHNEIDER ² , Jürgen RÖDEL ² , Daniel RYTZ ³ ¹ Luxembourg Institute of Science and Technology (LIST), Luxembourg, ² Technische Universität Darmstadt, Germany, ³ FEE GmbH, Germany
2	A-0201	Comparison of Generation II and III Piezocrystals for Applications in High Power Ultrasound Actuators	Tingyi JIANG, Muhammad SADIQ, A. BOLHOVITINS, Zhihong HUANG, Sandy COCHRAN University of Dundee, United Kingdom
3	A-0308	Homogeneity Evaluation of Ca ₃ Ta(Ga _{0.5} Al _{0.5}) ₃ Si ₂ O ₁₄ Single Crystal by the Line-Focus-Beam Ultrasonic Material Characterization System	Yuji OHASHI, Tetsuo KUDO, Yuui YOKOTA, Yasuhiro SHOJI, Shunsuke KUROSAWA, Kei KAMADA, Akira YOSHIKAWA Tohoku University, Japan
4	A-0465	Investigation of New High Temperature Piezoelectric Crystals BiB ₃ O ₆	Fapeng YU ¹ , F.F. CHEN ¹ , H.W. WANG ¹ , S.J. ZHANG ² , X. ZHAO ¹ ¹ Shandong University, China, ² The Pennsylvania State University, United States

5	A-0464	Electrostrictive Effect in $\text{Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3\text{-xPbTiO}_3$ Crystals	Fei LI ¹ , Zhuo XU ¹ , Shujun ZHANG ² ¹ Xi'an Jiaotong University, China, ² The Pennsylvania State University, United States
6	A-0288	PZN-PT Single Crystal High Performance Actuators	Dian-Hua LIN ¹ , Y.X. XIA ¹ , L.C. LIM ^{1,2} ¹ Microfine Materials Technologies Pte Ltd, Singapore, ² Peking University, China
7	A-0208	Synthesis and Thermal Characteristics of Al – Doped KNbO_3 Single Crystals	Naresh PATIL ¹ , Vivek KORDE ¹ , S. H. SHAMKUWAR ² ¹ Laxminarayan Institute of Technology, India, ² Art, Commerce & Science College, Amravati, India

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Multifunctional Materials and Cross-Coupling Effects 2

Chair(s): Lucian Pintilie, National Institute of Materials Physics, Romania

1	A-0215	Electric Field Tuning of Thermal Conductivity in Ferroelectric Thin Films by Reconfiguring Ferroelastic Domain Walls	Jon IHLEFELD ¹ , Brian FOLEY ² , Joseph MICHAEL ¹ , David SCRYMGEOUR ¹ , Bonnie MCKENZIE ¹ , Margeaux WALLACE ³ , Douglas MEDLIN ¹ , Elizabeth PAISLEY ¹ , Susan TROLIER-MCKINSTRY ³ , Patrick HOPKINS ² ¹ Sandia National Laboratories, United States, ² University of Virginia, United States, ³ The Pennsylvania State University, United States
2	A-0042	Study of the Electrocaloric Effect Using a First-Principles Effective Hamiltonian Approach	Madhura MARATHE, Claude EDERER ETH Zürich, Switzerland
3	A-0347	Monte Carlo Simulation of Electrocaloric Effect in Ferroelectrics and Relaxor Ferroelectrics	Yangbin MA, Karsten ALBE, Bai-Xiang XU Technische Universität Darmstadt, Germany
4	A-0357	Orientation Dependence of Photoelectrochemical Behaviors on Au/BiFeO_3 Heterostructures	Yen-Lin HUANG ¹ , H. H. KUO ¹ , K. A. TSAI ¹ , J. W. CHEN ² , C. W. LUO ¹ , Y. J. HSU ¹ , W. S. CHANG ³ , Y. H. CHU ¹ ¹ National Chiao Tung University, Taiwan, ² National Cheng Kung University, Taiwan, ³ Monash University Malaysia, Malaysia
5	A-0017	Multifunctional Epitaxial Ultrathin Films and Super-Lattices by Pulsed Laser Deposition	X. GUO ¹ , Z. P. LI ² , Weiguang ZHU ¹ ¹ Nanyang Technological University, Singapore, ² Tsinghua University, China
6	A-0196	Ag Modification of BiFeO_3 Thin Films Enhanced Photocathode Performance Under Visible Light	Pelin YILMAZ ¹ , Darwin YEO SHI XUAN ² , Hengky CHANG ² , Leonard LOH ² , Steve DUNN ¹ ¹ Queen Mary University of London, United Kingdom, ² Nanyang Polytechnic, Singapore

Day 2 - Tuesday, May 26, 2015 / Room Exploration / 13:30 - 15:30

Domains and Switching

Chair(s): Kamal Asadi, Max-Planck Institute for Polymer Research, Germany

1	A-0119 Invited	Electrically Non-Volatile Switching of Magnetism for Reconfigurable Microwave and Electronic Devices	Ming LIU Xi'an Jiaotong University, China
2	A-0040	Controlled Formation of Charged Domain Walls with Metallic-Like Conductivity in Ferroelectric Thin Films	Arnaud CRASSOUS ¹ , T. SLUKA ^{1,2} , A.K. TAGANTSEV ¹ , N. SETTER ¹ ¹ EPFL Swiss Federal Institute of Technology, Switzerland, ² University of Geneva, Switzerland
3	A-0075	Data Bit Recording with a Density Exceeding 1 Tbit/inch ² Using an HDD-Type Ferroelectric Probe Data Storage Unit	Tomonori AOKI, Yoshiomi HIRANAGA, Yasuo CHO Tohoku University, Japan
4	A-0492	Step Terrace Induced Anisotropic Transport in $\text{Pr}_{0.65}(\text{Ca}_{0.7}\text{Sr}_{0.3})_{0.35}\text{MnO}_3$ Thin Films	Peng REN, Lu YOU, Le WANG, Junling WANG Nanyang Technological University, Singapore
5	A-0205	Ferroelectric Thin Films with Semiconductor Electrodes: Implications for Polarization Switching, Dielectric Properties and Carrier Density Control via Domains	Burc MISIRLIOGLU, Mehmet YILDIZ, Kursat SENDUR Sabanci University, Turkey

6	A-0266 Invited	Large Piezoelectricity Driven by Electrically-Induced High-Density Ferroelastic Domains in Tetragonal Pb(Zr, Ti)O ₃ Films	Hiroshi FUNAKUBO ¹ , Mitsumasa NAKAJIMA ¹ , Hiorshi NAKAKI ¹ , Tomoaki YAMADA ² , Ayumi WADA ¹ , Takahiro OIKAWA ¹ , Takaaki NAKASHIMA ¹ , Yohitaka EHARA ¹ , Naoya OSHIMA ¹ , Alexei GRUVERMAN ³ ¹ Tokyo Institute of Technology, Japan, ² Nagoya University, Japan, ³ University of Nebraska- Lincoln, United States
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Day 2 - Tuesday, May 26, 2015 / Room Auditorium / 16:00 - 18:00

Characterization Techniques 1: Nano-scale

Chair(s): Semën Gorfman, University of Siegen, Germany

1	A-0279 Invited	Developments of AFM Technologies in Piezo Force Microscopy	Wanxin SUN Bruker Singapore Pte Ltd, Singapore
2	A-0381 Invited	Probing Ferroic Physics and the Role of Oxygen Vacancies via Direct Atomically Resolved Imaging	Rama VASUDEVAN ¹ , Alexander TSELEV ¹ , Anthony GIANFRANCESCO ² , Panchapakesan GANESH ¹ , Petro MAKSYMOMVYCH ¹ , Arthur BADDORF ¹ , Sergei V. KALININ ¹ ¹ Oak Ridge National Laboratory, United States, ² University of Tennessee, United States
3	A-0063	Study Electrochemical Phenomena and Resistive Switching Behaviors of TiO ₂ in Various Atmospheres	Wanheng LU, Kaiyang ZENG National University of Singapore, Singapore
4	A-0358	Full Field Electron Spectromicroscopy Applied to Ferroelectric Materials	Nicholas BARRETT CEA Saclay, France
5	A-0377	Confocal Second Harmonic Generation and Piesoresponse Force Microscopy for Imaging of Functional Nanomaterials	S. LAVROV ¹ , A. ELSHIN ¹ , D. KISELEV ² , Elena MISHINA ¹ ¹ Moscow State Technical University of Radioengineering, Electronics and Automation, Russian Federation, ² National University of Science and Technology "MISIS", Russian Federation
6	A-0425	Spatially Resolved Probing of Electrochemical Reactions via Energy Discovery Platforms	Jilai DING ¹ , Evgheni STRELCOV ² , Sergei V. KALININ ² , Nazanin BASSIRI-GHARB ¹ ¹ Georgia Institute of Technology, United States, ² Oak Ridge National Laboratory, United States

Day 2 - Tuesday, May 26, 2015 / Room Breakthrough / 16:00 - 18:00

Composites

Chair(s): Shuting Chen, Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore

1	A-0165 Invited	Polymer-Based Dielectric Nanocomposites with High Thermal Conductivity for Electronic Packaging Applications	Hong WANG, Yongcun ZHOU Xi'an Jiaotong University, China
2	A-0455	Advanced Processing of Polyetherimide-Ceramic Composites for High Temperature Piezoelectric Sensing	Hamideh KHANBAREH ^{1,2} , Maruti HEGDE ² , Sybrand VANDER ZWAAG ² , W.A. GROEN ³ ¹ Materials Innovation Institute (M2i), Netherlands, ² Delft University of Technology, Netherlands, ³ Holst Center, Netherlands
3	A-0101	Lead-Free Flexible Ceramic-Polymer Composite Applicable to Piezoelectric Energy-Harvesting Sheet	Ken-ichi KAKIMOTO, M. KATO Nagoya Institute of Technology, Japan
4	A-0231	Micro- and Nanosized Effect of Ba(Fe _{0.5} Nb _{0.5})O ₃ Fillers on Dielectric Properties of Ba(Fe _{0.5} Nb _{0.5})O ₃ /PVDF Composites	Mingrui FANG, Zhuo WANG, Haijuan LI, Yongfei WEN, Chun WANG Shaanxi University of Science and Technology, China
5	A-0400	Piezoelectric and Energy Harvesting Characteristics of (Na,K)NbO ₃ Nanoparticle-Embedded Nanofiber Composites	Han Byul KANG, Chan Su HAN, Seung Min LEE, Jin Woo JANG, Liu KAIHUA, Yong Soo CHO Yonsei University, South Korea

6	A-0453	Investigation of Polymer Based P(VDF-TrFE) Composites with Inorganic Fillers by Means of Dielectric Spectroscopy	Jaroslavas BELOVICKIS ¹ , Šarunas SVIRSKAS ¹ , Maksim IVANOV ¹ , Vytautas SAMULIONIS ¹ , Juras BANYŠ ¹ , M. V. SILIBIN ² , A. V. SOLNYSHKIN ² , S.A. GAVRILOV ² , V. V. SHVARTSMAN ³ ¹ Vilnius University, Lithuania, ² National Research University of Electronic Technology, Russian Federation, ³ University of Duisburg- Essen, Germany
7	A-0473	Dielectric Dispersion in Ferroelectric Composite Nanocrystalline Cellulose – Triglycine Sulfate	Hoai Thuong NGUYEN, Svetlana Dmitrievna MILOVIDOVA, Alexander Stepanovich SIDORKIN, Olga Vladimirovna ROGAZINSKAYA Voronezh State University, Russian Federation

Day 2 - Tuesday, May 26, 2015 / Room Discovery / 16:00 - 17:45

Crystals Containing Pb

Chair(s): Fei Li, Xi'an Jiaotong University, China

1	A-0410 Invited	Recent Advances in PZN-PT Single Crystal Growth and Device Development	Leong Chew LIM Microfine Materials Technologies Pte Ltd, Singapore
2	A-0106	High-Voltage Drive Characteristics of Binary and Mn-Modified PZN-PT Single Crystals	Yu HUANG ¹ , Leong Chew LIM ² , Kui YAO ³ ¹ National University of Singapore, Singapore, ² Microfine Materials Technologies Pte Ltd, Singapore, ³ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
3	A-0486	Thermal Expansion Characteristics of [001]-Oriented PIN-PMN-PT Single Crystals	Zhenrong LI, Gemeng HUANG, Kexin SONG, Ming MA, Shiji FAN, Zhuo XU Xi'an Jiaotong University, China
4	A-0125	3-D Domain Structures in Pb(Zn _{1/3} Nb _{2/3})O ₃ -x PbTiO ₃ (PZN-xPT) Single Crystals Studied by Piezoresponse Force Microscopy	Hongli WANG, Kaiyang ZENG National University of Singapore, Singapore
5	A-0197	Piezoelectric, Ferroelectric and Flexoelectric Rotation of Polarization in PbTiO ₃	Wenhui MA Shantou University, China
6	A-0520	Local Structure and Properties of Lead Zirconate-Titanate (PZT) Single Crystals	Zuo-Guang YE ^{1,2} , Yujuan XIE ² , Alexei A. BOKOV ² , Nan ZHANG ² ¹ Xi'an Jiaotong University, China, ² Simon Fraser University, Canada

Day 2 - Tuesday, May 26, 2015 / Room Creation / 16:00 - 17:15

Multiferroics 1

Chair(s): John Wang, National University of Singapore, Singapore

1	A-0324	Examinations of Multiferroic Properties on Hexagonal ErFeO ₃ Thin Film	Hiroko YOKOTA ¹ , T. NOZUE ¹ , M. FUKUNAGA ² , N. IKEDA ² , S. NAKAMURA ^{3,4} , A. FUWA ⁴ ¹ Chiba University, Japan, ² Okayama University, Japan, ³ Teikyo University, Japan, ⁴ Waseda University, Japan
2	A-0064 Invited	Tailoring PMN-PT Based ME Composites for Magnetic Sensor Applications	Jie JIAO, J.S. MA, C. FANG, Haosu LUO Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
3	A-0190	Zero-Biased Magnetic Field Sensor Using Nonlinear Magnetoelectric Effect in a Piezo-Fiber Composite - Metglas Layered Structure	F.A. FEDULOV, L.Y. FETISOV, Y.K. FETISOV, S.A. MAKOVKIN Moscow State Technical University of Radio Engineering, Russian Federation
4	A-0386	Theoretical and Experimental Investigation of Magnetic Field Sensor Based on (TbFe/FeCO) _n / AlN/TiN/NCD Composite Membrane	Abdelkrim TALBI ¹ , Ali SOLTANI ¹ , Vincent MORTET ² , Jean-Claude GERBEDOEN ¹ , Nicolas TIERCELIN ¹ , Philippe PERNOD ¹ , Vladimir PREOBRAZHENSKY ¹ , Olivier BOU MATAR ¹ ¹ Université Lille Nord de France, France, ² Academy of Sciences of the Czech Republic, Czech Republic

Day 2 - Tuesday, May 26, 2015 / Room Exploration / 16:00 - 18:00			
Resistive Switching			
Chair(s): Stefan Müller, NaMLab gGmbH, Germany			
1	A-0271 Invited	Nature of the Insulator-Metal Transition Associated with Resistive Switching in SrTiO ₃ and TiO ₂	Kristof SZOT ^{1,2} , Christian RODENBÜCHER ¹ ¹ Forschungszentrum Jülich GmbH, Germany, ² University of Silesia, Poland
2	A-0420	Fabrication and Electrical Properties of Hf _{0.5} Zr _{0.5} O ₂ Thin Films for RRAM Applications	Jun ZHU, Zhipeng WU, Xingpeng LIU, Wenbo LUO, Yanrong LI University of Electronics Science and Technology of China, China
3	A-0222	Investigation on Characteristics of Resistance Change by Coexistence of Oxygen Vacancy and Polarization Reversal in MOD BaTiO ₃ Ferroelectric Thin Film	Shuhei HASHIMOTO, Toshiyuki SUGIE, Ziyang ZHANG, Kaoru YAMASHITA, Minoru NODA Kyoto Institute of Technology, Japan
4	A-0448	Oxygen Vacancy Induced Metal-Insulator Transition and Huge Resistance Switching in NdNiO ₃ Films	Le WANG, Lu YOU, Peng REN, Yang ZHOU, Junling WANG Nanyang Technological University, Singapore
5	A-0412 Invited	Interpretation of Switching Data in Oxide Resistive Switching Thin Films	In K. YOO Samsung Electronics, South Korea
6	A-0060	Controlling the On/Off Current Ratio of Ferroelectric Field-Effect Transistors	Ilias KATSOURAS ¹ , Dong ZHAO ¹ , Mark Jan SPIJKMAN ² , Mengyuan LI ^{1,3} , Paul W. M. BLOM ¹ , Dago M. DE LEEUW ^{1,4} , Kamal ASADI ¹ ¹ Max Planck Institute for Polymer Research, Germany, ² ASML, Netherlands, ³ China Photovoltaic Industry Association, China, ⁴ King Abdulaziz University, Saudi Arabia
Day 3 - Wednesday, May 27, 2015 / Room Auditorium / 08:30 - 10:00			
Characterization Techniques 2: Nano-scale			
Chair(s): Nazanin Bassiri-Gharb, Georgia Institute of Technology, United States			
1	A-0114	Ionic Reaction and Diffusion in a Single Particle of Li-Rich Layered Cathode Revealed by Electrochemical Strain Microscopy Spectroscopy Technique	Tao LI ¹ , Bohang SONG ² , Li LU ³ , Kaiyang ZENG ³ ¹ University of Nebraska-Lincoln, United States, ² University of Oxford, United Kingdom, ³ National University of Singapore, Singapore
2	A-0525	Exploring Local Electrostatic Effects with Scanning Probe Microscopy: Implications for Piezoresponse Force Microscopy	Nina BALKE, Petro MAKSYMОВYCH, Stephen JESSE, Ivan I. KRAVCHENKO, Qian LI, Sergei V. KALININ Oak Ridge National Laboratory, United States
3	A-0348	Scanning Probe Piezoresistance: A New Experimental Tool (or What Happens When You Put an Elephant on Stilettos)	L. LÓPEZ-MIR ¹ , X. MARTÍ ¹ , M. PARADINAS ² , C. OCAL ² , G. CATALÁN ¹ , Neus DOMINGO ¹ ¹ ICN2 - Institut Català de Nanociència i Nanotecnologia, Spain, ² Institut de Ciència de Materials de Barcelona, Spain
4	A-0398	Measuring Remanent Strain	Joe EVANS, Michelle BELL, Scott CHAPMAN Radiant Technologies, Inc., United States
5	A-0309	Spatial and Time-Resolved Direct Measurement of Electrocaloric Effect Using Infrared Thermal Imaging	Maciej ROKOSZ ¹ , Nadia SMITH ² , Tatiana CORREIA ² ¹ National Physical Laboratory/ Imperial College London, United Kingdom, ² National Physical Laboratory, United Kingdom
6	A-0437	Nanowire Piezoelectric Coefficients Estimation Using Current Voltage Measurements	Mahmoud AL AHMAD United Arab Emirates University, United Arab Emirates
Day 3 - Wednesday, May 27, 2015 / Room Breakthrough / 08:30 - 10:15			
Pb-free Bulk Ceramics and Powders 1			
Chair(s): John Daniels, University of New South Wales, Australia			
1	A-0285 Invited	Transfer Opportunities for Lead Free Soft and Hard Piezoceramics	Jürgen RÖDEL, Jurij KORUZA Technische Universität Darmstadt, Germany

2	A-0487	Large Electric Field Induced Strain in CuO (or MnO ₂)-Added KNbO ₃ Ceramics	Jong-Hyun KIM ¹ , Dae-Hyeon KIM ² , In-Tae SEO ² , Ji-Hyun LEE ² , Bo-Yun KIM ¹ , Sahn NAHM ² , Seok-Jin YOON ³ ¹ KU-KIST Graduate School of Converging Science and Technology, South Korea, ² Korea University, South Korea, ³ Convergence Research, National Research Council of Science & Technology, South Korea
3	A-0113	Origin of High Piezoelectric Properties of KNN-Based Ceramics	Dingquan XIAO, Jianguo ZHU Sichuan University, China
4	A-0181	BNBT Based Lead-Free Piezoelectric Ceramics for Sensor and Transducer Applications	Eberhard HENNIG ¹ , A. KYNAST ¹ , M. TOEPFER ¹ , M. HOFMANN ² ¹ PI Ceramic GmbH, Germany, ² Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany
5	A-0081	Enhancement of Piezoelectric and Dielectric Properties of CoO-Modified CaBi ₄ Ti ₄ O ₁₅ Ceramics	Deqiong XIN, Qiang CHEN, Jing YUAN, Wen ZHANG, Dingquan XIAO, Jianguo ZHU Sichuan university, China
6	A-0112	Lead-Free (1-x)(K _{0.42} Na _{0.585})(Nb _{1-y} Sb _y)O ₃ -xBi _{0.5} K _{0.5} ZrO ₃ Piezoceramic: Phase Structure and Electrical Properties	Ting ZHENG, Dingquan XIAO, Jianguo ZHU, Jiagang WU Sichuan University, China

Day 3 - Wednesday, May 27, 2015 / Room Discovery / 08:30 - 10:00

Thin Films Without Pb 1: HfO₂ and Related Materials

Chair(s): Alexei Gruverman, *University of Nebraska, United States*

1	A-0258	An Analysis for the Wake-up Phenomenon of Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ Thin Films by Transient Switching Current	Han Joon KIM, Min Hyuk PARK, Yu Jin KIM, Taehwan MOON, Keum Do KIM, Young Hwan LEE, Cheol Seong HWANG Seoul National University, South Korea
2	A-0439	Interface-Driven Ferroelectricity of Non-Doped HfO ₂	Tomonori NISHIMURA ¹ , Takeaki YAJIMA ¹ , Shinji MIGITA ² , Akira TORIUMI ¹ ¹ The University of Tokyo, Japan, ² National Institute of Advanced Industrial Science and Technology (AIST), Japan
3	A-0041 Invited	Searching for the Origin of the Ferroelectric Phase in HfO ₂	Uwe SCHROEDER ¹ , Tony SCHENK ¹ , Claudia RICHTER ¹ , M. HOFFMANN ¹ , Dominik MARTIN ¹ , T. SHIMIZU ² , Hiroshi FUNAKUBO ² , Darius POHL ³ , Christoph ADELMANN ⁴ , R. MATERLIK ⁵ , Alfred KERSCH ⁵ , X. SANG ⁶ , James LEBEAU ⁶ , Sergei V. KALININ ⁷ , Thomas MIKOLAJICK ^{1,8} ¹ Nanoelectronic Materials Laboratory gGmbH (NaMLab), Germany, ² Tokyo Institute of Technology, Japan, ³ Leibniz IFW Dresden, Germany, ⁴ Imec, Belgium, ⁵ Munich University of Applied Sciences, Germany, ⁶ North Carolina State University, United States, ⁷ Oak Ridge National Laboratory, United States, ⁸ TU Dresden, Germany
4	A-0139	Toward a Multifunctional Monolithic Device Based on Pyroelectricity and the Electrocaloric Effect of Thin Antiferroelectric Hf _x Zr _{1-x} O ₂ Films	Min Hyuk PARK, Han Joon KIM, Yu Jin KIM, Taehwan MOON, Keum Do KIM, Young Hwan LEE, Cheol Seong HWANG Seoul National University, South Korea
5	A-0314	Proving the Ferroelectricity of Pulsed Laser Deposition Grown Thin Films of GaFeO ₃	Simon MARTIN ¹ , David ALBERTINI ¹ , Philippe HAMOUMOU ¹ , Nicolas BABOUX ¹ , Anna DEMCHENKO ² , Christophe LEFÈVRE ² , Francois ROULLAND ² , Nathalie VIART ² , Brice GAUTIER ¹ ¹ Institut National des Sciences Appliquées de Lyon, France, ² Université de Strasbourg, France

Day 3 - Wednesday, May 27, 2015 / Room Creation / 08:30 - 10:15**Multiferroics 2****Chair(s): Jennifer Andrew, University of Florida, United States**

1	A-0176 Invited	Manipulation of Structure and Multiferroic Behavior of BiFeO ₃ -Based Thin Films	John WANG ¹ , Fan ZHEN ^{1,2} , Huajun LIU ^{1,2} , Ping YANG ¹ , Kui YAO ² ¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering (IMRE), Singapore
2	A-0097	Ferroelectric and Magnetic Properties of Aurivillius Bismuth Layer Structured Thin Films	Tingting JIA ¹ , Hideo KIMURA ¹ , Zhenxiang CHENG ² , Hongyang ZHAO ³ ¹ National Institute for Materials Science, Japan, ² University of Wollongong, Australia, ³ Wuhan Institute of Technology, China
3	A-0032	Pyroelectric/Photovoltaic Properties in Polar Thin Films	Lucian PINTILIE, Ioana PINTILIE, Mihaela BOTEAN, Alin IUGA, Iuliana PASUK, Andra BONI, Cristina CHIRILA, Luminita HRIB, Viorica STANCU National Institute of Materials Physics, Romania
4	A-0168	Epitaxial Bi ₅ Ti ₃ FeO ₁₅ -CoFe ₂ O ₄ Pillar-Matrix Multiferroic Nanostructures with Deterministic Arbitrary Switching of Polarization	Xuan CHENG ¹ , Yuji MATSUMOTO ^{2,3} , Rama K. VASUDEVAN ⁴ , Akira IMAI ² , Eugene ELISEEV ⁵ , Anna MOROZOVSKA ⁵ , Sergei V. KALININ ⁴ , Huolin XIN ⁶ , Ryota TAKAHASHI ⁷ , Mikk LIPPMAN ⁷ , Shingo MARUYAMA ³ , Mahmut Baris OKATAN ⁴ , Stephen JESSE ⁴ , Valanoor NAGARAJAN ¹ ¹ The University of New South Wales, Australia, ² Tokyo Institute of Technology, Japan, ³ Tohoku University, Japan, ⁴ Oak Ridge National Laboratory, United States, ⁵ National Academy of Sciences of Ukraine, Ukraine, ⁶ Brookhaven National Lab, United States, ⁷ University of Tokyo, Japan
5	A-0505	Magnetic Properties of Dy-Modified 0.66BiFeO ₃ -0.34PbTiO ₃ Multiferroic Solid Solution Ceramics	Jian ZHUANG ¹ , Lun-Wei SU ² , Hua WU ³ , Ming LIU ¹ , Wei REN ¹ , Zuo-Guang YE ^{1,2} ¹ Xi'an Jiaotong University, China, ² Simon Fraser University, Canada, ³ Donghua University, China
6	A-0191	Magneto-Dielectricity in Ca _{0.9} Li _{0.10} Cu ₃ Ti ₄ O ₁₂	Jitender KUMAR, A.M. AWASTHI UGC-DAE Consortium for Scientific Research, India

Day 3 - Wednesday, May 27, 2015 / Room Exploration / 08:30 - 10:00**Devices and Functionality 1****Chair(s): Orlando Auciello, University of Texas at Dallas, United States**

1	A-0164 Invited	High Performance Rotary Nanomotors for Tunable Biochemical Release	Kwanoh KIM, Xiaobin XU, Jianhe GUO, Donglei FAN The University of Texas at Austin, United States
2	A-0232	A Wireless Accelerometer Using Micromachined Piezoelectric Sensor	Zhiyuan SHEN, Yi Fan CHEN, Lei ZHANG, Chin Yaw TAN, Kui YAO Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
3	A-0302 Invited	Influence of Uncertainty in Dielectric Properties on the Design Performance of a Tunable Composite Right/Left Handed Leaky Wave Antenna	X. GAO, M.M. KECHIK, Tim JACKSON, P.G. GARDNER University of Birmingham, United Kingdom
4	A-0366	Tuning the Polarization Switching Dynamics Through Polarization Coupling in a PbZr _x Ti _(1-x) O ₃ / ZnO Heterostructure for Neuron Like Synaptic Memory	Anirban GHOSH, G. KOSTER, G. RIJNDERS University of Twente, Netherlands

Day 3 - Wednesday, May 27, 2015 / Room Auditorium / 11:00 - 12:30**Characterization Techniques 3: X-rays and Electrons****Chair(s): Hiroshi Funakubo, Tokyo Institute of Technology, Japan**

2	A-0417 Invited	Experimental Observations of Grain-Scale Property Coupling in Electroceramics	John DANIELS ¹ , Jette ODDERSHEDE ² , Soren SCHMIDT ² , Marta MAJKUT ² ¹ University of New South Wales, Australia, ² Technical University of Denmark, Denmark
3	A-0152	Time-Resolved X-ray Diffraction Reveals the Hidden Mechanisms of Piezoelectricity and Polarization Reversal in Uniaxial Ferroelectric	Semën GORFMAN ¹ , Hyeokmin CHO ¹ , Vladimir SHVARTSMAN ² , Michael ZIOLKOWSKI ¹ , Ullrich PIETSCH ¹ , Tadeusz LUKASIEWICZ ³ , Jan DEC ⁴ ¹ University of Siegen, Germany, ² University Duisburg-Essen, Germany, ³ Institute of Electronic Materials Technology, Poland, ⁴ University of Silesia, Poland
4	A-0260	Determination of Secondary Phase in Fe/BaTiO ₃ Bilayers by Synchrotron X-ray Absorption Near-Edge Structure Spectroscopy	Jaru JUTIMOOSIK ¹ , Amitesh PAUL ² , Saroj RUJIRAWAT ¹ , Rattikorn YIMNIRUN ¹ ¹ Suranaree University of Technology, Thailand, ² Technische Universität München, Germany
5	A-0529 Invited	Probing the Structure and Dynamic Behaviors of Ferroelectric Domains with Atomic Resolution in Real Time	Xiaoqing PAN University of California - Irvine, United States

Day 3 - Wednesday, May 27, 2015 / Room Breakthrough / 11:00 - 12:45**Pb-free Bulk Ceramics and Powders 2****Chair(s): Meysam Sharifzadeh Mirshekarloo, Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore**

1	A-0236 Invited	Low Temperature Preparation of Barium Titanate-Based Nano-Complex Ceramics by Solvothermal Solidification Method and Their Dielectric and Piezoelectric Enhancement	Satoshi WADA ¹ , H. KAWASHIMA ¹ , Y. HIROSE ¹ , S. UENO ¹ , K. NAKASHIMA ¹ , E. MAGOME ² , C. MORIYOSHI ² , Y. KUROIWA ² ¹ University of Yamanashi, Japan, ² Hiroshima University, Japan
2	A-0211	Development and Acoustic Characterization of Lead-Free High Intensity Focused Ultrasound Transducers	Elaheh TAGHADDOS ¹ , Mehdi HEJAZI ¹ , Teng MA ² , Qifa ZHOU ² , Hui ZHONG ³ , Ming Xi WAN ³ , Ahmad SAFARI ¹ ¹ Rutgers University, United States, ² University of Southern California, United States, ³ Xi'an Jiaotong University, China
3	A-0203	Converse Piezoelectricity and Domain Structure of AgSbO ₃ -Modified (Li,K,Na)(Nb,Ta)O ₃ Lead-free Piezoceramics	Qing LIU ¹ , Fang-Yuan ZHU ¹ , Bo-Ping ZHANG ² , Long-Tu LI ¹ , Jing-Feng LI ¹ ¹ Tsinghua University, China, ² University of Science and Technology Beijing, China
4	A-0468	Phase Transitions and Dielectric, Ferroelectric and Piezoelectric Properties of Bi _{0.5} (Na _{0.82} K _{0.18}) _{0.5} TiO ₃ -doped (Ba _{0.85} Ca _{0.15})(Zr _{0.1} Ti _{0.9})O ₃ Ceramics	Yang BAI ¹ , Ales MATOUSEK ¹ , Hojay POOLADVAND ² , Pavel TOFEL ¹ , Bo NAN ¹ , Vijay BIJALWAN ¹ , Michael KRAL ¹ , Hana HUGHES ¹ , Tim BUTTON ^{1,2} ¹ Central European Institute of Technology (CEITEC), Czech Republic, ² University of Birmingham, United Kingdom
5	A-0441	Influence of Complex Substitution on Phase Transition and Microwave Dielectric Properties of BiVO ₄ Ceramic	Di ZHOU Xi'an Jiaotong University, China
6	A-0193	Relationship Between Phase Boundaries and Piezoelectricity in Potassium-Sodium Niobate Lead-Free Ceramics	Jiagang WU Sichuan University, China

Day 3 - Wednesday, May 27, 2015 / Room Discovery / 11:00 - 12:15**Thin Films Without Pb 2: BiFeO₃ and Bi-based Materials****Chair(s): Junling Wang, Nanyang Technological University, Singapore**

1	A-0405 Invited	Structure, Piezoresponse and Ferroelectric Properties of Lead-Free Piezoelectric (Bi _{0.5} Na _{0.5}) _{0.94} Ba _{0.06} TiO ₃ Thin Films	Wei REN ¹ , Jinyan ZHAO ² , Lingyan WANG ² , Ming LIU ² , Zuo-Guang YE ^{2,3} , Xiaoqing WU ² , Peng SHI ² ¹ Xi'an Jiaotong University, China, ² Xi'an Jiaotong University, China, ³ Simon Fraser University, Canada
2	A-0028	Uniaxial Strained Epitaxial BiFeO ₃ (110) Thin Films	Huajun LIU ^{1,2} , Ping YANG ³ , John WANG ³ , Kui YAO ¹ ¹ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, ² Argonne National Laboratory, United States, ³ National University of Singapore, Singapore
3	A-0304	Piezoelectric Response Enhancement in Ga Doped BiFeO ₃ Epitaxial Films	Nazir JABER ¹ , Jerome WOLFMAN ¹ , Christophe DAUMONT ¹ , Béatrice NEGULESCU ¹ , Antoine RUYTER ¹ , Guy FEUILLARD ¹ , Maxime BAVENCOFFE ¹ , Thierry SAUVAGE ² , Blandine COURTOIS ² , Houssny BOUYANFIF ³ , Jean-Louis LONGUET ⁴ , Pascal ANDREAZZA ⁵ , Cecile AUTRET-LAMBERT ¹ , François GERVAIS ¹ ¹ Université François Rabelais, France, ² CEMHTI - Conditions Extrêmes et Matériaux : Haute Température et Irradiation, France, ³ University of Picardie Jules Verne, France, ⁴ CEA / Direction des applications militaires, France, ⁵ Université d'Orléans, France
4	A-0147	Sol-Gel Processed Sm-Doped BiFeO ₃ Films on Pt/Ti/SiO ₂ /Si Substrates: Thickness Effect on Phase Boundary and Piezoelectricity	Wei SUN, Jing-Feng LI Tsinghua University, China

Day 3 - Wednesday, May 27, 2015 / Room Creation / 11:00 - 12:30**Design and Modeling****Chair(s): Ke Wang, Tsinghua University, China**

1	A-0089	Linear and Nonlinear Models of Electroelasticity in the Software Package ACELAN	Alexander SKALIUKH ¹ , Andrey NASEDKIN ¹ , Pavel OGANESYAN ² , Arkady SOLOVIEV ³ ¹ Southern Federal University, Russian Federation, ² Southern Scientific Centre of Russian Academy of Sciences, Russian Federation, ³ Don State Technical University, Russian Federation
2	A-0146	Study on Effective Piezoelectric Coefficient for Finite Element Analysis of Multilayer Ceramic Capacitor	Byung-Han KO ¹ , Sanggeuk JEONG ¹ , No-Cheol PARK ¹ , Heungkil PARK ² , Young-Pil PARK ¹ ¹ Yonsei University, South Korea, ² Samsung Electro-Mechanics Co., Ltd., South Korea
3	A-0501	Design of A Hybrid Piezoelectric Motor with Symmetrical Butt-Structure	Kai-Chao CHANG, Yung TING, Jia-Ci CHEN, Hsiang-Hung HUANG Chung Yuan Christian University, Taiwan
5	A-0503	Design of a Two-Way Operation d14 Piezoelectric Ceramic Motor	Hao-Ping LIN, Yung TING, Jia-Ci CHEN Chung Yuan Christian University, Taiwan
7	A-0091	Comparison of Transverse Piezoelectric Coefficient E _{31,F} Between Direct and Inverse Piezoelectric Effects	Yuichi TSUJIURA, Saneyuki KAWABE, Fumiya KUROKAWA, Hirotaka HIDA, Isaku KANNO Kobe University, Japan
8	A-0315	Influence of Asymmetric Electrodes on the Switching of PZT Thin Films	Robin NIGON ¹ , Nachiappan CHIDAMBARAM ¹ , Trygve RAEDER ^{1,2} , Paul MURALT ³ ¹ École Polytechnique Fédérale de Lausanne, Switzerland, ² Norwegian University of Science and Technology, Norway, ³ Swiss Federal Institute of Technology in Lausanne, Switzerland

Day 3 - Wednesday, May 27, 2015 / Room Exploration / 11:00 - 13:00**Devices and Functionality 2****Chair(s): Tim Jackson, University of Birmingham, United Kingdom**

1	A-0036 Invited	Tunable and Switchable Resonators, Filters and Duplexers Based on Ferroelectric BST Thin Films for Wireless Communications	Thottam KALKUR <i>University of Colorado, United States</i>
2	A-0369	LiTaO ₃ /Silicon Composite Wafers for the Fabrication of Low Loss Low TCF High Coupling Resonators for Filter Applications	Emilie COURJON ¹ , Sylvain BALLANDRAS ¹ , William DANIAU ² , Jean-Baptiste MOULET ³ , Thomas SIGNAMARCHEIX ³ , Thomas BARON ² ¹ <i>Frec n sys, France</i> , ² <i>FEMTO-ST (Franche-Comté Electronique Mécanique Thermique et Optique – Sciences et Technologies), France</i> , ³ <i>CEA-Leti: Laboratoire d'électronique des technologies de l'information, France</i>
3	A-0035 Invited	Science and Technology of Interface-Tailored Oxide Thin Film-Based Nanolaminates Involving High-k and High-Piezoelectric Materials	Geunhee LEE ¹ , Erika M. A. FUENTES-FERNANDEZ ¹ , Guoda LIAN ¹ , Ram S. KATIYAR ² , Orlando AUCIELLO ¹ ¹ <i>University of Texas at Dallas, United States</i> , ² <i>University of Puerto Rico, United States</i>
4	A-0414	Evaluation of Plastic Deformation in Titanium and Aluminum Alloys with Nonlinear Rayleigh Surface Acoustic Waves	Shifeng GUO, Lei ZHANG, Shuting CHEN, Zhiyuan SHEN, Meysam SHARIFZADEH MIRSHEKARLOO, Huajun LIU, Yi Fan CHEN, Kui YAO <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
5	A-0382	A True Way of Current-Voltage Characterization of FeRAM Capacitor	Alexander SIGOV, Konstantin VOROTILOV <i>Moscow State Technical University of Radioengineering, Electronics and Automation, Russian Federation</i>
6	A-0509	Characterization of High-k TiO ₂ Ultra-Thin Films in Al/TiO ₂ /Si Capacitor for Gate Oxide Applications	Madhuchhanda NATH, Asim ROY <i>National Institute of Technology Silchar, India</i>

Day 3 - Wednesday, May 27, 2015 / Room Auditorium / 14:00 - 16:00**Characterization Techniques 4: Big Data, Properties and Crystallography****Chair(s): Arthur Baddorf, Oak Ridge National Laboratory, United States**

1	A-0418 Invited	Unraveling Local Phase Transition and Relaxation Behavior in Relaxor-Ferroelectrics via Big Data Piezoresponse Force Microscopy	Rama K. VASUDEVAN ¹ , Shujun ZHANG ² , Mahmut Baris OKATAN ¹ , Stephen JESSE ¹ , Sergei V. KALININ ¹ , Nazanin BASSIRI-GHARB ³ ¹ <i>Oak Ridge National Laboratory, United States</i> , ² <i>The Pennsylvania State University, United States</i> , ³ <i>Georgia Institute of Technology, United States</i>
2	A-0071	Determining the Mechanical Quality Factor of Piezoelectric Materials at Any Frequency	Husain SHEKHANI, Kenji UCHINO <i>The Pennsylvania State University, United States</i>
3	A-0242	Electrocaloric Properties of PZT-based Ceramics, PVDF Films and PMN-PT Crystals	Hiroshi MAIWA <i>Shonan Institute of Technology, Japan</i>
4	A-0161	Determine the Effect of Heat Treatment Temperature on Aging of Lead Zirconate Titanate for Hard Disk Drive Microactuator	Soodkhet POJPRAPI, Asawin PHUETTHONGLANG, Boonruang MARUNGSRRI <i>Suranaree University of Technology, Thailand</i>
5	A-0034	Temperature Dependence of the Brillouin Frequency Shift and the Linewidth of the LA Mode in the Ferroelectric Phase of PZT-X (PbZr _{1-x} Ti _x O ₃)	Hamit YURTSEVEN ¹ , A. KIRACI ^{1,2} ¹ <i>Middle East Technical University, Turkey</i> , ² <i>Cankaya University, Turkey</i>
6	A-0375	Resonance-Amplified Lifetime Testing of Lead Zirconate Titanate Thin-Film Devices	Ryan RUDY, Luz SANCHEZ, Ronald POLCAWICH <i>U.S. Army Research Laboratory, United States</i>

7	A-0515	A Diffraction-Based Method to Determine the Spontaneous Polarization in Displacive Ferroelectrics	Jose Antonio EIRAS ¹ , V. F. FREITAS ² , D. GARCIA ¹ , L. F. CÓTICA ³ , I. A. SANTOS ³ ¹ Federal University of São Carlos, Brazil, ² State University of Center-West, Brazil, ³ State University of Maringá, Brazil
Day 3 - Wednesday, May 27, 2015 / Room Breakthrough / 14:00 - 15:30			
Pb-free Thin Films			
Chair(s): Lane Martin, University of California, Berkeley, United States			
1	A-0244	Low Cost and High Performance Poly(vinylidene fluoride) (PVDF) Homopolymer Ferroelectric Thin Films	Shuting CHEN ¹ , Kui YAO ¹ , Francis Eng Hock TAY ² ¹ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, ² National University of Singapore, Singapore
2	A-0329	SolMateS' New PLD Platform: The Lab-to-Fab Stepping Stone for Applications of Functional Thin Films	Matthijn DEKKERS, Nicolas HILDENBRAND, Arjen JANSSENS SolMateS B.V., Netherlands
3	A-0160	180° Domain Structure Morphologies and P(E) Hysteresis Behavior in Thin Ferroelectric Films	Andrei ARTEMEV Carleton University, Canada
4	A-0451	Ferroelectric Domain Structures in Low-Strain Epitaxial BaTiO ₃	Arnoud EVERHARDT ¹ , Sylvia MATZEN ² , Beatriz NOHEDA ¹ ¹ Zernike Institute for Advanced Materials, University of Groningen, Netherlands, ² University Paris Sud, France
5	A-0497	Ferroelectric and Piezoelectric Studies on Sol-Gel Derived Lead-Free BCZT Ceramics	Paul PRAVEEN, Dibakar DAS University of Hyderabad, India
6	A-0297	Tunable Ferroelectric Thin Film Capacitors Based on Ba _{1-x} Ca _x Ti _{1-y} Zr _y O ₃	Christophe DAUMONT ¹ , Q. SIMON ² , S. PAYAN ² , J.L. LONGUET ³ , B. NEGULESCU ¹ , M. MAGLIONE ² , J. WOLFMAN ¹ ¹ Université François Rabelais, France, ² Université de Bordeaux, France, ³ CEA / Direction des applications militaires, France
Day 3 - Wednesday, May 27, 2015 / Room Discovery / 14:00 - 15:45			
Films Containing Pb			
Chair(s): Ronald Polcawich, US Army Research Laboratory, United States			
1	A-0518 Invited	Recent Progress on Development of Sputtered PZT Film at FUJIFILM	Yoshikazu HISHINUMA ¹ , Takamichi FUJII ¹ , Takayuki NAONO ¹ , Takami ARAKAWA ¹ , Youming LI ² ¹ FUJIFILM Corporation, Japan, ² FUJIFILM Dimatix, Inc., Japan
2	A-0138	Epitaxial Growth of (100)/(001) PZT-Based Thin Film on (111) Si Wafer Using SrRuO ₃ /LaNiO ₃ /Pt/CeO ₂ Buffer Layer	Takeshi HAYASAKA, Shinya YOSHIDA, Shuji TANAKA Tohoku University, Japan
3	A-0340	Composition Gradient Effect on the Phase Transition of Morphotropic Pb(Zr,Ti)O ₃ Thin Films	Veronika KOVACOVA ¹ , Nicolas VAXELAIRE ¹ , Gwenael LE RHUN ¹ , Patrice GERGAUD ¹ , Emmanuel DEFAY ² ¹ CEA-Leti: Laboratoire d'électronique des technologies de l'information, France, ² Luxembourg Institute of Science and Technology (LIST), Luxembourg
4	A-0388	High Performing PZT Thin Films for MEMS Actuators and the Toughness Issue	Andrea MAZZALAI, Nachiappan CHIDAMBARAM, Davide BALMA, Paul MURALT Swiss Federal Institute of Technology in Lausanne, Switzerland
5	A-0067	Stress Effects in (Pb,Lu)(Zr,Sn,Ti)O ₃ Multilayer Ceramics	Meysam SHARIFZADEH MIRSHEKARLOO, Ivan Chee KIANG TAN, Szu Cheng LAI, Lei ZHANG, Ten it WONG, Mojtaba RAHIMABADY, Kui YAO Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore

6	A-0094	Structure and Ferroelectric Properties of High T _c Bi(Me)O ₃ -PbTiO ₃ Single Crystal Thin Films	Kiyotaka WASA ¹ , H. HANZAWA ² , S. YOSHIDA ² , S. TANAKA ² , H. ADACHI ³ , T. MATSUNAGA ³ ¹ Yokohama City University, Japan, ² Tohoku University, Japan, ³ Panasonic Co., Japan
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Day 3 - Wednesday, May 27, 2015 / Room Creation / 14:00 - 15:15

Phase Transitions and Structures

Chair(s): Chee Kiang Ivan Tan, *Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore*

1	A-0373	Incommensurate Phases in Simple Antiferroelectrics PbZrO ₃ and PbHfO ₃	Roman BURKOVSKY <i>European Synchrotron Radiation Facility, France</i>
2	A-0045	Low Temperature Ferroelectric Behavior in Pb(Zr _x Ti _{1-x})O ₃ Near the MPB	Carlo VECCHINI ¹ , Mark STEWART ¹ , Jenny WOOLDRIDGE ¹ , Anna KIMMEL ¹ , Paul THOMPSON ^{2,3} , Sean MCMITCHELL ^{2,3} , R. CERNIK ⁴ , Pascal MANUEL ⁵ , Chiu TANG ⁶ , Christina DRATHEN ² , Markys CAIN ¹ ¹ National Physical Laboratory, United Kingdom, ² ESRF - The European Synchrotron, France, ³ University of Liverpool, United Kingdom, ⁴ University of Manchester, United Kingdom, ⁵ STFC - Science and Technology Facilities Council, United Kingdom, ⁶ Diamond Light Source Ltd, United Kingdom
3	A-0344	Origin of Temperature-Insensitive Piezoelectric Response in CaZrO ₃ Modified (K, Na)NbO ₃ Lead-Free Ceramics	Ke WANG, Fang-Zhou YAO, Jing-Feng LI <i>Tsinghua University, China</i>
4	A-0267	Structural and Electrical Studies of Mixed Metal/Ceramic Composite Dielectric Thin Films	Ali ABDULLAH ^{1,2} , Arslan MUNIR ² , A. S. SALEEMI ³ , Muhammad SAQIB ² , Muhammad ANIS-UR-REHMAN ³ ¹ University of Management and Technology (UMT), Pakistan, ² COMSATS Institute of Information Technology (CIIT), Pakistan, ³ COMSATS Institute of Information Technology, Pakistan
5	A-0408	Broadband Dielectric Studies of Cobalt Ferrite and Nb-doped Lead Zirconium Titanate Multiferroic Composites	Robertas GRIGALAITIS ¹ , Aurimas SAKANAS ¹ , Juras BANYS ¹ , Christina CIOMAGA ² , Liliana MITOSERIU ² ¹ Vilnius University, Lithuania, ² Alexandru Ioan Cuza University, Romania

Day 3 - Wednesday, May 27, 2015 / Room Exploration / 14:00 - 16:00

Energy Harvesting and Storage

Chair(s): Shuxiang Dong, *Peking University, China*

1	A-0133 Invited	Relation Between the Microstructure and the Electrocaloric Effect of Relaxor Ferroelectric Pb(Mg _{1/3} Nb _{2/3})O ₃ -PbTiO ₃ Ceramics	Barbara MALIC, Marko VRABELJ, Lovro FULANOVIĆ, Hana URŠIČ, Silvo DRNOVŠEK, Andreja BENČAN, Brigita ROŽIČ, Vid BOBNAR, Zdravko KUTNJAK <i>Jožef Stefan Institute, Slovenia</i>
2	A-0332	Mn-Doped PMN-PT Thin Films for Electrocaloric Applications	Anja KLEINER ¹ , G. SUCHANECK ¹ , L. LIU ² , N. NEUMANN ² , A. EYDAM ¹ , G. GERLACH ¹ ¹ Technische Universität Dresden, Germany, ² InfraTec GmbH, Germany
3	A-0104	Energy Harvesting using Lead-Free Piezoelectric Ceramics and Applications for Batteryless Remote Control	Lei ZHANG, Chin Yaw TAN, Ivan Chee KIANG TAN, Kui YAO <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
4	A-0127	Ferroelectric Glass Ceramics for Energy Storage Application	Yong ZHANG, Xiaozhen SONG, Jia ZHU, Dongliang YANG, Yongzhou CHEN <i>Tsinghua University, China</i>

5	A-0151	Piezoelectric Free-Standing Thick-Film Structures for Material Characterization and Energy Harvesting Applications	Yang BAI ¹ , Carl MEGGS ² , Yun JIANG ² , Canlin OU ² , Hana HUGHES ¹ , Tim BUTTON ^{1,2} ¹ <i>Central European Institute of Technology (CEITEC), Czech Republic</i> , ² <i>University of Birmingham, United Kingdom</i>
6	A-0180	Electrical Capacitance with Meshed Electrodes for Piezo and Pyroelectric Energy Harvesting Applications	Daniel ZABEK ¹ , J. TAYLOR ² , E. LE BOULBAR ² , C.R. BOWEN ² ¹ <i>University of Bath, United Kingdom</i> , ² <i>University of Bath, United Kingdom</i>
7	A-0255	GRENE Energy Harvesting Study and Crystals with Aurvillius Phase	Hideo KIMURA ¹ , Tingting JIA ¹ , Rumi TANAHASHI ¹ , Hongyang ZHAO ² ¹ <i>National Institute for Materials Science, Japan</i> , ² <i>Wuhan Institute of Technology, China</i>

Poster Presentations

Monday - Wednesday, 25 - 27 May, 2015 / Level 4			
Poster Session Q & A is scheduled on Wednesday, May 27, 10:00 - 11:00			
1	A-0021	Bipolar and Unipolar Resistive Switching Modes in Pt/Zn _{0.99} Zr _{0.01} O/Pt Structure for Multi-Bit Resistance Random Access Memory	Minghua TANG, D.L. XU, Y. XIONG, B.W. ZENG, Y.G. XIAO <i>Xiangtan University, China</i>
2	A-0022	Temperature Dependence of Magnetoelectric Effect in Bi _{3.15} Nd _{0.85} Ti ₃ O ₁₂ -La _{0.7} Ca _{0.3} MnO ₃ Multiferroic Composite Films Buffered by a LaNiO ₃ Layer	Z.H. TANG, Minghua TANG, Y. XIONG, Y.G. XIAO <i>Xiangtan University, China</i>
3	A-0025	Nondestructive Acoustic Microcharacterisation of Gamma Irradiation Effects on Sodium Oxide Borate Glass X ₂ Na ₂ O-X ₂ B ₂ O ₃ by Acoustic Signature	Ibrahim AL-SURAIHY ¹ , A. DOGHMANE ² , Z. HADJOUR ² ¹ <i>Sana'a University, Yemen</i> , ² <i>Université Badji- Mokhtar, Algeria</i>
4	A-0029	High Temperature Irradiation of Lead Zirconate Titanate, Barium Titanate & Bismuth-Ferrite Lead-Titanate Based Ferroelectric Ceramics	Adam QAISAR ¹ , P. COWIN ² , T.P. COMYN ² , L. LEAY ³ ¹ <i>National Nuclear Laboratory, United Kingdom</i> , ² <i>Ionix Advanced Technologies, United Kingdom</i> , ³ <i>University of Manchester, United Kingdom</i>
5	A-0037	Operating Principle and Vibration Characteristic of an I-Shape Ultrasonic Motor	Yingxiang LIU, Dongmei XU, Weishan CHEN, Junkao LIU <i>State Key Laboratory of Robotics and System, Harbin Institute of Technology, China</i>
6	A-0038	A Cross Beam Linear Ultrasonic Motor Using Bending Vibrations	Dongmei XU, Yingxiang LIU, Junkao LIU, Weishan CHEN <i>State Key Laboratory of Robotics and System, Harbin Institute of Technology, China</i>
7	A-0039	Structural and Scaling Behavior in Relaxor Ferroelectric BZT Ceramic Doped with Rare Earth Europium Ion	Sarit Kumar GHOSH ¹ , S. K. ROUT ¹ , S.K. DESHPANDE ² ¹ <i>Birla Institute of Technology, India</i> , ² <i>Bhabha Atomic Research Centre (BARC), India</i>
8	A-0043	Research on the Effect of the Corrugated Contact Surface on an Inchworm-Type Piezoelectric Rotary Actuator by Finite Element Method	Jianping LI, H.W. ZHAO, T. CUI, Z.J. LI <i>Jilin University, China</i>
9	A-0049	Localized Conductivity and Polarization Switching Behavior of Undoped Zinc Oxide Nanorods Grown by Hydrothermal Method	Juanxiu XIAO, Wei Li ONG, Ziming GUO, Ghim Wei HO, Kaiyang ZENG <i>National University of Singapore, Singapore</i>
10	A-0050	The Correlations Between the Resistive Switching and Electromechanical Behaviors in Different Nickel Oxide Thin Films with Deposited Oxygen Partial Pressure Studied by Scanning Probe Microscopy Techniques	Juanxiu XIAO ¹ , Septian CHANDRIKA ¹ , Lai-Mun WONG ² , Shijie WANG ² , Kaiyang ZENG ¹ ¹ <i>National University of Singapore, Singapore</i> , ² <i>Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
11	A-0054	Energy Scavenging from Vibration by Using Single- and Double-Layer Stacks of Flexible Fluoroethylenepropylene Piezoelectret Films	Xiaoqing ZHANG ¹ , G. M. SESSLER ² ¹ <i>Tongji University, China</i> , ² <i>Darmstadt University of Technology, Germany</i>
12	A-0062	High Temperature Coefficient of Resistance of Ultrathin Ferroelectric Polymer Capacitors	Xiangjian MENG, X.L. ZHAO, J. L. WANG, J. L. SUN, J. H. CHU <i>Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China</i>
13	A-0066	Surface Double-Layer Structure in (110) Oriented BiFeO ₃ Thin Film	Tieying YANG ¹ , Can WANG ² , Xingmin ZHANG ¹ , Yu FENG ² , Haizhong GUO ² , Kuijuan JIN ² , Xingyu GAO ¹ , Zhong LI ¹ , Xiaolong LI ¹ ¹ <i>Shanghai Institute of Applied Physics, Chinese Academy of Sciences, China</i> , ² <i>Institute of Physics, Chinese Academy of Sciences, China</i>
14	A-0068	Phase Formation, Microstructural Analysis and Dielectric Study of Nb Doped BNKT Ceramics Prepared via Solid State Reaction Rout	Vidhi CHAUHAN, M. Reddy PRAKASH, Aks RAJ, S.K. GHOSH, S.K. ROUT <i>Birla Institute of Technology, India</i>

15	A-0069	Micromachined Lithium Niobate Ridges Waveguides for Electro-Acoustic and Electro-Optic Applications	Fabien HENROT ¹ , Florent BASSIGNOT ² , Nadège COURJAL ¹ , Gwenn ULLIAC ¹ , Sylvain BALLANDRAS ³ ¹ FEMTO-ST (Franche-Comté Electronique Mécanique Thermique et Optique – Sciences et Technologies), France, ² FEMTO Engineering, France, ³ Frec/n/sys, France
16	A-0070	Dielectric and Piezoelectric Properties of (LiCe)-Modified (NaBi) _{0.48} [] _{0.04} Bi ₂ Nb _{1.97} W _{0.03} O ₉ High-Temperature Ceramics	Lingguang SUN, Qiang CHEN, Zhi TAN, Xi YUE, Dingquan XIAO, Jianguo ZHU Sichuan University, China
17	A-0074	Evaluation of Oxygen Vacancy in ZnO Using Raman Spectroscopy	Hiroaki FUKUSHIMA ¹ , Tomomi KOZU ¹ , Hiromi SHIMA ¹ , Hiroshi FUNAKUBO ² , Hiroshi UCHIDA ³ , Takashi KATODA ⁴ , Ken NISHIDA ¹ ¹ National Defense Academy, Japan, ² Tokyo Institute of Technology, Japan, ³ Sophia University, Japan, ⁴ Kochi University of Technology, Japan
18	A-0076	Effect of Ion Beam Irradiation on Recording Media of Ferroelectric Probe Data Storage	Yoshiomi HIRANAGA, Yitong CHEN, Yasuo CHO Tohoku University, Japan
19	A-0077	Vibration Characteristic Analysis of a Piezoelectric Transducer Using First Bending Vibration Modes	Zhaoyang YU, Yingxiang LIU, Dongmei XU, Junkao LIU State Key Laboratory of Robotics and System, Harbin Institute of Technology, China
20	A-0078	Nanoscale Study of Perovskite BiFeO ₃ /Spinel (Fe,Zn) ₃ O ₄ Co-Deposited Thin Film by Electrical Scanning Probe Methods	Alexis BOROWIAK ¹ , Koichi OKADA ¹ , Teruo KANKI ¹ , Brice GAUTIER ² , Bertrand VILQUIN ³ , Hidekazu TANAKA ¹ ¹ Osaka University, Japan, ² Institut National des Sciences Appliquées de Lyon, France, ³ Ecole Centrale de Lyon, France
21	A-0079	Electromechanical Response of Amorphous LaAlO ₃ Thin Film Probed by Scanning Probe Microscopies	Alexis BOROWIAK ¹ , Hidekazu TANAKA ¹ , Nicolas BABOUX ² , David ALBERTINI ² , Bertrand VILQUIN ³ , Guillaume SAINT-GIRONS ³ , S. PELLOQUIN ³ , Brice GAUTIER ² ¹ Osaka University, Japan, ² Institut National des Sciences Appliquées de Lyon, France, ³ Ecole Centrale de Lyon, France
22	A-0090	Effects of Mo _{2/3} Bi _{1/3} Complex Doped on Phase Structure, Microstructure and Piezoelectric Properties of KNNS-BNZ Ceramics	Zhi TAN, Jianguo ZHU, Yuxing ZHANG, Qiang CHEN, Lingguang SUN, Dingquan XIAO Sichuan University, China
23	A-0099	Influence of Sintering Temperature on the High Piezoelectricity of (1-x)(K,Na)(Nb,Sb)O ₃ -x(Bi,La,Na,Li)ZrO ₃ Lead-Free Ceramics	Laiming JIANG, Lixue XIE, Zhimin FANG, Zhi TAN, Qiang CHEN, Dingquan XIAO, Jianguo ZHU Sichuan University, China
24	A-0102	Reactive Sputtering Process and Properties of Ba(Zr _x Ti _{1-x})O ₃ Films for High Frequency Applications	Jinwoong KIM ¹ , Hiromi SHIMA ¹ , T. YAMAMOTO ¹ , Shintaro YASUI ² , Hiroshi FUNAKUBO ² , Tomoaki YAMADA ³ , Ken NISHIDA ¹ ¹ National Defense Academy, Japan, ² Tokyo Institute of Technology, Japan, ³ Nagoya University, Japan
25	A-0103	Dielectric and Piezoelectric Properties of MnO ₂ -Modified Bismuth-Layer (Ca _{0.4} ,Sr _{0.6})Bi ₄ Ti ₄ O ₁₅ High-Temperature Ceramics	Rui NIE, Qiang CHEN, Hong LIU, Jie XING, Dingquan XIAO, Jianguo ZHU Sichuan University, China
26	A-0108	Effect of Partial Substitution of Al ³⁺ Cation on Bi ³⁺ Cation in Lead-Free (Na _{0.5} Bi _{0.5}) _{0.92} Ba _{0.08} TiO ₃ Electro-Ceramics	Hitesh BORKAR, Ashok KUMAR CSIR- National Physical Laboratory, India
27	A-0110	Saw Sensor for Influenza A Virus Detection Enabled with Efficient Surface Functionalization	Ying JIANG ¹ , Chin Yaw TAN ¹ , Sze Yu TAN ¹ , Miki Shi Fei WONG ¹ , Yi Fan CHEN ¹ , Lei ZHANG ¹ , Kui YAO ¹ , Samuel Ken En GAN ² , Chandra VERMA ² , Yee Joo TAN ³ ¹ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore, ² Bioinformatics Institute, A*STAR (Agency for Science, Technology and Research), Singapore, ³ Institute of Molecular and Cell Biology (IMCB), A*STAR (Agency for Science, Technology and Research), Singapore
28	A-0115	Piezoelectric, Dielectric and Ferroelectric Properties of Low Temperature Sintered PNN-PMW-BCW-PZT Ceramics	Hong LIU, Rui NIE, Yue YANG, Dongxu YAN, Qiang CHEN, Dingquan XIAO, Jianguo ZHU Sichuan University, China

29	A-0118	Lead-free (K _{0.5} Na _{0.5})NbO ₃ Ferroelectric Thin Films Derived From Chemical Solution Modified With MEA, DEA and EDTA	Yumei WANG ^{1,2} , Kui YAO ² , Francis Eng Hock TAY ¹ , Meysam SHARIFZADEH MIRSHEKARLOO ² ¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
30	A-0124	Local Probing of Li-ions Movements in Li-rich Cathode by Electrochemical Strain Microscopy	Shan YANG, Binggong YAN, Li LU, Kaiyang ZENG National University of Singapore, Singapore
31	A-0126	Low-Temperature Sintering of (Ba _{0.85} Ca _{0.15})(Zr _{0.1} Ti _{0.9})O ₃ Ceramics and Thick-Films	Yang BAI ¹ , Canlin OU ² , Ales MATOUSEK ¹ , Hana HUGHES ¹ , Tim BUTTON ^{1,2} ¹ Central European Institute of Technology (CEITEC), Czech Republic, ² University of Birmingham, United Kingdom
32	A-0131	Improvement of Electrical Conductivity and Leakage Current in Co-Precipitation Derived Nd-Doping BiFeO ₃ Ceramics	Yan-Ping JIANG, X.G. TANG, Q.X. LIU, D.G. CHEN, C.B. MA Guangdong University of Technology, China
33	A-0149	Modulation of Magnetic Coercivity in Ni Thin Films by Reversible Control of Strain Through PZT Substrate	Wen-Chin LIN, C. W. HUANG, C. J. TSAI, V. R. MUDINEPALLI, Y. C. TING, F. Y. LO National Taiwan Normal University, Taiwan
34	A-0155	Modeling and Control of a Traveling Wave in a Finite Beam, Using Multimodal Approach and Vector Control Method	Sofiane GHENNA ¹ , Frédéric GIRAUD ¹ , Christophe GIRAUD-AUDINE ^{1,2} , Michel AMBERG ¹ , Betty LEMAIRE-SEMAIL ¹ ¹ Laboratoire d'électrotechnique et d'Électronique de Puissance, Université Lille1, France, ² Ecole Nationale des Arts et métier Paris-tech, France
35	A-0167	Ferroelectric Control Magnetism in P(VDF-TrFE)/Co Heterostructures	Xiaolin ZHAO, J.L. WANG, T. LIN, L. HAN, J.L. SUN, Xiangjian MENG, J.H. CHU Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China
36	A-0170	The Dependence of Field Induced Crystalline Phase Transition on the Dielectric, Ferroelectric, and Piezoelectric Properties of an Hydrogenated P(VDF-co-TrFE)	Weimin XIA ¹ , F. LIANG ¹ , J. H. XING ¹ , C. J. CAO ¹ , Z. C. ZHANG ² , Z. XU ² ¹ Xi'an University of Technology, China, ² Xi'an Jiaotong University, China
37	A-0178	Phase Diagram (Electric-Field-Temperature) in Bi(Na, K)TiO ₃ Systems	Yoshitaka EHARA, Nikola NOVAK, Hyoun-Su HAN, Kyle WEBBER Technische Universität Darmstadt, Germany
38	A-0183	Defect Induced Lattice Relaxation and Stabilisation in Ferroelectric Materials	A. BOGDANOV, Anna KIMMEL, Markys CAIN National Physical Laboratory, United Kingdom
39	A-0185	PFM Study of Local Piezoelectric Properties of Giant Strain Lead-Free Relaxor-Ferroelectric Composite Ceramics	Danka GOBELJIC ¹ , Vladimir SHVARTSMAN ¹ , Jürgen RÖDEL ² , Stephen JESSE ³ , Sergei V. KALININ ³ , Doru C. LUPASCU ¹ ¹ University Duisburg-Essen, Germany, ² Technische Universität Darmstadt, Germany, ³ Oak Ridge National Laboratory, United States
40	A-0186	The Effect of Defects at Pt/PZT Interfaces	Anna KIMMEL, Paul WEAVER, Markys CAIN National Physical Laboratory, United Kingdom
41	A-0187	The Effect of Strain on Domain Wall Dynamics in Pb(Zr _x Ti _{1-x})O ₃	Oliver GINDELE ¹ , Anna KIMMEL ² , Dorothy DUFFY ¹ , Markys CAIN ² ¹ University College London, United Kingdom, ² National Physical Laboratory, United Kingdom
42	A-0188	Ferroelectric Phenomena in the Biomolecular Structures at the Nanoscale: Computational Studies and PFM Observations	Vladimir BYSTROV ¹ , Ensieh SEYEDHOSSEINI ² , Igor BDIKIN ² , Sabine NEUMAYER ³ , Jose COUTINHO ² , Ekaterina PARAMONOVA ¹ , Varsenik GEWORKYAN ⁴ , Dmitry TURCHENKOV ¹ , Andrei L. KHOLKIN ² ¹ Institute of Mathematical Problems of Biology, Russian Academy of Sciences, Russian Federation, ² University of Aveiro, Portugal, ³ University College Dublin, Ireland, ⁴ Southern Federal University, Russian Federation

43	A-0199	Enhancement of Pyroelectric Properties of Particulate Composites	Hamideh KHANBAREH ^{1,2} , Sybrand VAN DER ZWAAG ² , W.A. GROEN ³ ¹ Materials Innovation Institute (M2i), Netherlands, ² Delft University of Technology, Netherlands, ³ Holst Center, Netherlands
44	A-0200	Effects of K Excess on the Structure and Properties of (K _{0.5} Na _{0.5})NbO ₃ Ceramics	Aifen TIAN, Huiling DU Xi'an University of Science and Technology, China
45	A-0210	Piezocrystal Characterization Under High Power Drive with Thermal Conditioning	Xiaochun LIAO, Muhammad SADIQ, Tingyi JIANG, Romans POLTARJONOKS, Xiaojia XIE, Zhihong HUANG, George CORNER, Sandy COCHRAN University of Dundee, United Kingdom
46	A-0218	Interface Control of a Morphotropic Phase Boundary in Epitaxial Samarium-Modified Bismuth Ferrite Superlattices	Valanoor NAGARAJAN The University of New South Wales, Australia
47	A-0223	Atomic Layer Deposition of Super Paramagnetic Magnetic Nanostructure and Multiferroic Heterostructure	Yijun ZHANG ¹ , Ming LIU ² , Wei REN ² , Zuo-Guang YE ^{2,3} ¹ Xi'an Jiaotong University, China, ² Xi'an Jiaotong University, China, ³ Simon Fraser University, Canada
48	A-0225	Ferroelectric Properties of Ternary System PIN-PMN-PT Films Prepared by Aerosol-Deposition Process	Soobin KANG ¹ , Jungkeun LEE ¹ , Jungho RYU ² , Linghang WANG ³ , Daeyong JEONG ¹ ¹ Inha University, South Korea, ² Korea Institute of Materials Science (KIMS), South Korea, ³ Xi'an Jiaotong University, China
49	A-0228	Energy Storage Properties of Nano-grained PLZT Films Fabricated by Aerosol Deposition Method	Soobin KANG ¹ , Jungkeun LEE ¹ , Jungho RYU ² , Youngmin KONG ³ , Daeyong JEONG ¹ ¹ Inha University, South Korea, ² Korea Institute of Materials Science (KIMS), South Korea, ³ University of Ulsan, South Korea
50	A-0229	A Comparative Study of BaTiO ₃ -BaFe ₁₂ O ₁₉ Multiferroic Composites Prepared by Conventional and Microwave Sintering Techniques	Zijing DONG, Yongping PU, Peikui WANG Shaanxi University of Science and Technology, China
51	A-0237	Insights into the Influence of Magnetic Fields on the Propagation of Elastic Wave Packets within a Piezoelectric Micro-Scale Beams	Khameel MUSTAPHA, Basil. T. WONG Swinburne University of Technology (Sarawak Campus), Malaysia
52	A-0238	X-ray Absorption and Density Functional Analysis of Fe ³⁺ Distribution Profile on Al Sites in Alexandrite (BeAl ₂ O ₄ :Fe ³⁺) Crystal	Kanokwan KANCHIANG ¹ , Janyaporn WITTHAYARAT ² , Sittichain PRAMCHU ³ , Rattikorn YIMNIRUN ⁴ , Panjawan THANASUTHIPITAK ³ , Yongyut LAOSIRITAWORN ³ ¹ Maejo University, Thailand, ² Rambhai Barni Rajabhat University, Thailand, ³ Chiang Mai University, Thailand, ⁴ Suranaree University of Technology, Thailand
53	A-0240	Role of Interface in Resistive Switching of NiO Nanocrystals on SrTiO ₃	Xuan CHENG ¹ , Jivika SULLAPHEN ¹ , Matthew WEYLAND ² , Hongwei LIU ³ , Valanoor NAGARAJAN ¹ ¹ The University of New South Wales, Australia, ² Monash University, Australia, ³ University of Sydney, Australia
54	A-0250	Acoustic Properties of Lead-Free (Na _{1/2} Bi _{1/2})TiO ₃ -BaTiO ₃ Single Crystals Studied by Brillouin Spectroscopy	Byoung Wan LEE ¹ , Jae-Hyeon KO ¹ , Xiaobing LI ² , Haosu LUO ² ¹ Hallym University, South Korea, ² Shanghai Institute of Ceramics, Chinese Academy of Sciences, China
55	A-0251	Dielectric, Impedance, Ferroelectric and Magnetic Properties of Gd ³⁺ -doped BiFeO ₃ Ceramics	Yongping PU, Peikui WANG, Zijing DONG Shaanxi University of Science and Technology, China
56	A-0253	Effects of Different Microwave Calcination Temperatures on the Pure BiFeO ₃ Ceramics Prepared by Microwave Hydrothermal Method	Peikui WANG, Yongping PU, Zijing DONG Shaanxi University of Science and Technology, China
57	A-0262	Local and Macroscopic Ferroelectric and Piezoelectric Behavior of Samarium Modified BiFeO ₃ Ceramics	Julian WALKER ¹ , Denis ALIKIN ² , Anton TURIGIN ² , Andreja BENCAN ¹ , Hana URSIC ¹ , Barbara MALIC ¹ , Vladimir SHUR ² , Valanoor NAGARAJAN ³ , Andrei L. KHOLKIN ⁴ , Tadej ROJAC ¹ ¹ Jožef Stefan Institute, Slovenia, ² Ural Federal University, Russian Federation, ³ The University of New South Wales, Australia, ⁴ University of Aveiro, Portugal

58	A-0265	Dielectric Properties of Oriented BaTiO ₃ -Bi(Mg _{1/2} Ti _{1/2})O ₃ Thin Films Fabricated by Chemical Solution Deposition	Shota MOKI ¹ , Junichi KIMURA ² , Hiroshi FUNAKUBO ² , Hiroshi UCHIDA ¹ ¹ Sophia University, Japan, ² Tokyo Institute of Technology, Japan
59	A-0268	Properties of 0.74BiNaTiO ₃ -0.06SrTiO ₃ /Bi _{0.5} (Na _{0.8} K _{0.2}) _{0.5} TiO ₃ Ceramic Composite	Soon-Jong JEONG ¹ , M. S. KIM ¹ , S. M. JANG ¹ , I. S. KIM ¹ , S. J. SONG ¹ , M. SALEEM ^{1,2} ¹ Korea Electrotechnology Research Institute, South Korea, ² University of Science and Technology, South Korea
60	A-0275	Effect of Potassium Content on the Dielectric and Electrical Properties of Sodium Potassium Niobate Ceramics	Suman KUMARI ¹ , Seema SHARMA ¹ , Dhananjay K. SHARMA ² , Andrei L. KHOLKIN ² ¹ A.N. College, India, ² University of Aveiro, Portugal
61	A-0280	Carrier Density Control of 2-Dimensional Electron Gas at a-Al ₂ O ₃ /SrTiO ₃ Interface by ALD Using O ₃ Treatment	Taehwan MOON ¹ , Min Hyuk PARK ¹ , Yu Jin KIM ¹ , Han Joon KIM ¹ , Keum Do KIM ¹ , Young Hwan LEE ¹ , Sang Woon LEE ² , Cheol Seong HWANG ¹ ¹ Seoul National University, South Korea, ² Ajou University, South Korea
62	A-0281	Direct Measurements of Electrocaloric Effect in Lead-Free (1-x)Ba(Zr _{0.2} Ti _{0.8})O ₃ -x(Ba _{0.7} Ca _{0.3})TiO ₃ Ceramics	Mehmet SANLI ¹ , Vladimir SHVARTSMAN ¹ , Matias ACOSTA ² , Doru C. LUPASCU ¹ ¹ University Duisburg-Essen, Germany, ² Technische Universität Darmstadt, Germany
63	A-0286	Anisotropy of Deformation of a Precision Actuator Based on Single Crystalline Bidomain Lithium Niobate	Ilya KUBASOV, Sergey KSENICH, Dmitry KISELEV, Alexander BYKOV, Roman ZHUKOV, Anastasiya CHERNYKH, Alexandr TEMIROV, Nikita TIMUSHKIN, Mikhail MALINKOVICH National University of Science and Technology "MISIS", Russian Federation
64	A-0290	Computed Phase Diagram and Temperature-Dependent Properties of the Ba(Zr _{0.2} Ti _{0.8})O ₃ -x(Ba _{0.7} Ca _{0.3})TiO ₃ Lead-Free Piezoceramic	Matias ACOSTA ¹ , Nasser KHAKPASH ² , Takumi SOMEYA ³ , Nikola NOVAK ¹ , Wook JO ² , Hajime NAGATA ³ , George A. ROSSETTI ² , Jürgen RÖDEL ¹ ¹ Technische Universität Darmstadt, Germany, ² University of Connecticut, United States, ³ Tokyo University of Science, Japan
65	A-0294	Microstructure and Electrical Properties of Ternary Lead-Free Bi _{0.5} (Na _{0.80} K _{0.20}) _{0.5} TiO ₃ -0.005LiNbO ₃ -BaTiO ₃ Piezoelectric Ceramics	Pimpilai WANNASUT ¹ , Pharatree JAITA ² , Anucha WATCHARAPASORN ¹ , Sukanda JIANSIRISOMBOON ¹ ¹ Chiang Mai University, Thailand, ² Rajamangala University of Technology Lanna (RMUTL), Thailand
66	A-0295	Magnetocaloric and Electrocaloric Effect in Geometrically Frustrated CaBaCo ₄ O ₇	C. DHANASEKHAR, A.K DAS, A. VENIMADHAV Indian Institute of Technology, Kharagpur, India
67	A-0296	Effect of Cobalt Substitution on the Structural, Electrical and Magnetic Properties of BaTiO ₃ Ceramics	Alka RANI, Jayant KOLTE, Prakash GOPALAN Indian Institute of Technology Bombay, India
68	A-0298	Fabrication of Tetragonal Pb(Zr,Ti)O ₃ Nanorods by Focused Ion Beam and Characterization of the Domain Structure	Daisuke ITO ¹ , Tomoaki YAMADA ¹ , Osami SAKATA ^{2,3} , Junki KUROISHI ⁴ , Takahiro NAMAZU ⁴ , Takahisa SHIRAISHI ³ , Takao SHIMIZU ³ , Hiroshi FUNAKUBO ³ , Masahito YOSHINO ¹ , Takanori NAGASAKI ¹ ¹ Nagoya University, Japan, ² National Institute for Materials Science, Japan, ³ Tokyo Institute of Technology, Japan, ⁴ University of Hyogo, Japan
69	A-0310	Ferroelectric Properties of Stress-Modulated PbTiO ₃ Thick Films on the Different Substrates Fabricated by Aerosol Deposition	Jungkeun LEE ¹ , Soobin KANG ¹ , Ji-Ho LIM ¹ , Hwee-Jong KIM ¹ , Jungho RYU ² , Daeyong JEONG ¹ ¹ Inha University, South Korea, ² Korea Institute of Materials Science (KIMS), South Korea
70	A-0312	Fabrication and Dielectric Properties of Nb and In co-doped TiO ₂ Films by Aerosol Deposition Method	Jungkeun LEE ¹ , Soobin KANG ¹ , Ji-Ho LIM ¹ , Hwee-Jong KIM ¹ , Jungho RYU ² , Daeyong JEONG ¹ ¹ Inha University, South Korea, ² Korea Institute of Materials Science (KIMS), South Korea
71	A-0317	Resonance Characteristics of Magnetoelectric Effect in PZT-FeCo Structure Under High Excitation Level	D.A. BURDIN, D.V. CHASHIN, N.A. EKONOMOV, Y.K. FETISOV Moscow State Technical University of Radio Engineering, Russian Federation

72	A-0320	Build in Field Effects on Electrical Properties of Epitaxial $\text{Ba}_{1-x}\text{Sr}_x\text{TiO}_3$ Thin Films	Sarunas BAGDZEVICIUS ¹ , Ruta MACKEVICIUTE ¹ , Maksim IVANOV ¹ , Nava SETTER ² , Juras BANYIS ¹ ¹ Vilnius University, Lithuania, ² EPFL Swiss Federal Institute of Technology, Switzerland
73	A-0322	Electromechanical Properties of $\text{Bi}_{1-x}\text{Pr}_x\text{FeO}_3$ Ceramics	Dzmitry KARPINSKY ¹ , I. O. TROYANCHUK ² , A. L. KHOLKIN ¹ ¹ University of Aveiro, Portugal, ² Scientific-Practical Materials Research Centre of NAS of Belarus, Belarus
74	A-0333	Investigating Alternating Currents and Packing Densities of Conducting Ferroelectric Domain Walls in $\text{Pb}(\text{Zr}_{0.2}\text{Ti}_{0.8})\text{O}_3$ Thin Films	Philippe TÜCKMANTEL, Iaroslav GAPONENKO, Benedikt ZIEGLER, Patrycja PARUCH University of Geneva, Switzerland
75	A-0337	Magnetic Field Sensing Using Flexible Diaphragm Structures Based on PZT Thin Films / Polyurethane Films	Benoit GUIFFARD, Raynald SEVENO, Thibault DUFAY, Samuel BARON Université de Nantes, France
76	A-0338	Investigation of Off-Center Force Effect on Quartz Resonator Sensors, Using Nonlinear Finite Element Method	Hossein DANESHPAJOOH, Mostafa MOHAMMADI, Mohsen HAMED University of Tehran, Iran
77	A-0342	Multi Scale Advanced Characterization of Lead Zirconate Titanate (PZT) Thin Films	Simon MARTIN ¹ , Qiang LIU ² , Bertrand VILQUIN ² , David ALBERTINI ¹ , Nicolas BABOUX ¹ , Brice GAUTIER ¹ ¹ Institut National des Sciences Appliquées de Lyon, France, ² Ecole Centrale de Lyon, France
78	A-0352	Ultrafast Domain Walls in MgO Doped Congruent Lithium Tantalate Single Crystals	Andrey AKHMATKHANOV, Mariya CHUVAKOVA, Ekaterina VASKINA, Vladimir SHUR Ural Federal University, Russian Federation
79	A-0353	The Abnormal Conduction Current Induced by Formation of Charged Domain Walls in Stoichiometric Lithium Niobate	Andrey AKHMATKHANOV, Vladimir SHUR, Alexander ESIN, Ivan BATURIN Ural Federal University, Russian Federation
80	A-0354	Bulk Single Crystal Growth of $\text{Ca}_3\text{Ta}(\text{Ga},\text{Al})_3\text{Si}_2\text{O}_{14}$ Single Crystals	Akira YOSHIKAWA, Yasuhiro SHOJI, Yuji OHASHI, Yuui YOKOTA, Tetsuo KUDO, Kei KAMADA, Shunsuke KUROSAWA, Andrey MEDVEDEV Tohoku University, Japan
81	A-0362	Formation and Decay of the Incommensurate Phase in Ferroelectrics TlInS_2	Nikolay BOROVOY ¹ , Yu. P. GOLOLOBOV ² , A. SALNIK ¹ , O. ZLOI ¹ ¹ Taras Shevchenko National University of Kyiv, Ukraine, ² National Transport University, Ukraine
82	A-0363	The Role of Doping on the Characteristics of $\text{BiFe}_{1-x}\text{Sc}_x\text{O}_3$ Multiferroic Ceramics Derived from Nanopowders Prepared by Combustion Method	Mirela DRAGOMIR ¹ , Mihai-Iulian CALUGARU ¹ , Daniela Cristina BERGER ¹ , Felicia PRIHOR ² , Liliana MITOSERIU ² , Adelina-Carmen IANCULESCU ¹ ¹ University Politehnica of Bucharest, Romania, ² Alexandru Ioan Cuza University, Romania
83	A-0378	Micro and Nano-Structures for Acoustic Band Gaps Engineering in Micro-Electro-Acoustic Devices	Yu DU, Abdelkrim TALBI, Sergey YANKIN, Anastasia PAVLOVA, Jean-Claude GERBEDOEN, Olivier BOU MATAR, Vladimir PREOBRAZHENSKY, Philippe PERNOD Université Lille 1, France
84	A-0406	Switchable and Tunable Resonators and Filters with Barium Strontium Titanate on Sapphire Substrates	Almonir MANSOUR ¹ , Thottam KALKUR ¹ , Milad HMEDA ¹ , Pamir ALPAY ² , Nick SROCKEY ³ , G.S. TOMPA ³ ¹ University of Colorado, United States, ² University of Connecticut, United States, ³ Structured Materials Industries, Inc., United States
85	A-0415	Influence of Sintering Temperature on the High Piezoelectricity of $(1-x)(\text{K},\text{Na})(\text{Nb},\text{Sb})\text{O}_3-x(\text{Bi},\text{La},\text{Na},\text{Li})\text{ZrO}_3$ Lead-Free Ceramics	Laiming JIANG, Lixue XIE, Zhimin FANG, Zhi TAN, Qiang CHEN, Dingquan XIAO, Jianguo ZHU Sichuan University, China
86	A-0421	Influence of the In-Situ Electric Field on Self-Polarization Effect in LiNbO_3 Thin Films	Dmitry KISELEV, Roman ZHUKOV, Alexander BYKOV, Sergey KSENICH, Iliya KUBASOV, Alexandr TEMIROV, Nikita TIMUSHKIN, Mikhail MALINKOVICH National University of Science and Technology "MISIS", Russian Federation

87	A-0423	Dielectric Properties of Samarium Bismuth Ferrite Ceramic	Edita PALAIMIENE ¹ , Jan MACUTKEVIC ¹ , Dzmitry KARPINSKY ² , Andrei L. KHOLKIN ² , Juras BANYŠ ¹ ¹ Vilnius University, Lithuania, ² University of Aveiro, Portugal
88	A-0429	Effects of Different Ratios of Potassium to Sodium on the Structure and Properties of (K _x Na _{1-x})NbO ₃ Ceramics	Dongsheng ZHANG, Zheng ZHANG Xi'an Jiaotong University, China
89	A-0430	Generating Characteristics of a Hump Shaped Piezoelectric Energy Harvester	Byeong Ha LEE, Seong Su JEONG, Seong Kyu CHEON, Yong Woo HA, Tae Gone PARK Changwon National University, South Korea
90	A-0432	Design of an Ultrasonic Linear Motor Which has Simple Plate Type Stator	Seong Kyu CHEON, Seong Su JEONG, Byeong Ha LEE, Myong Ho KIM, Tae Gone PARK Changwon National University, South Korea
91	A-0433	Computational of Localized Magnetic Flux Inside LSMO Based Structure	Mahmoud AL AHMAD United Arab Emirates University, United Arab Emirates
92	A-0434	Extraction of Piezoelectric Constant Using Force-Capacitance Dependency	Mahmoud AL AHMAD United Arab Emirates University, United Arab Emirates
93	A-0435	The Ferroelectric and Antiferroelectric Properties of HfO ₂ /ZrO ₂ Nanolaminate Systems	Min Hyuk PARK, Han Joon KIM, Yu Jin KIM, Young Hwan LEE, Taehwan MOON, Keum Do KIM, Cheol Seong HWANG Seoul National University, South Korea
94	A-0436	Piezoelectric d33 Based Generator Power Estimations	Mahmoud AL AHMAD United Arab Emirates University, United Arab Emirates
95	A-0438	High Temperature Coefficient of Resistance Based on Ferroelectric Polymer Tunnel Junction	Xiaolin ZHAO ¹ , Yang LIU ² , Jianlu WANG ¹ , Bobo TIAN ¹ , Bolu LIU ¹ , Xudong WANG ¹ , Hai HUANG ¹ , Tie LIN ¹ , Shuo SUN ¹ , Yuhong ZOU ¹ , Li HAN ¹ , Hong SHEN ¹ , Jinglan SUN ¹ , Xiangjian MENG ¹ , Junhao CHU ¹ ¹ Shanghai Institute of Technical Physics, Chinese Academy of Sciences, China, ² CNRS-Ecole Centrale Paris, France
96	A-0442	Effect of Frequency on Bipolar Electrical Fatigue Behavior of ZnO-Modified Lead Magnesium Niobate Titanate Ceramics	M. PROMSAWAT ¹ , N. PETNOI ² , S. POJPRAPAI ² , Sukanda JIANSIRISOMBOON ¹ ¹ Chiang Mai University, Thailand, ² Suranaree University of Technology, Thailand
97	A-0444	Comparison of Actuator Performance in Lead-Based and Lead-Free Piezoelectric Cymbals	Piyalak NGERNCHUKLIN ¹ , Chutima EAMCHOTCHAWALIT ¹ , Ahmad SAFARI ² ¹ Thailand Institute of Scientific and Technological Research, Thailand, ² Rutgers University, United States
98	A-0460	Anatomy of Vertical Heteroepitaxial Interfaces Reveals the Memristive Mechanism in Nb ₂ O ₅ -NaNbO ₃ Thin Films	Linglong LI, Lu LU, yaodong YANG Xi'an Jiaotong University, China
99	A-0462	Polar Discontinuities and Piezoelectric Properties of Honeycomb Lattices	Md NOOR-A-ALAM, Hye Jung KIM, Young-Han SHIN University of Ulsan, South Korea
100	A-0469	Acoustic Anomalies of Ferroelectric Ba _{0.79} Sr _{0.21} TiO ₃ Single Crystals Studied by Brillouin Spectroscopy	Sunhyub SHIN ¹ , Jae-Hyeon KO ¹ , Choong Jae WON ² , Nam Jung HUR ² , Young Ho KO ³ , Kwang Joo KIM ³ ¹ Hallym University, South Korea, ² Inha University, South Korea, ³ Agency for Defense Development, South Korea
101	A-0471	Effect of Dopant/BaTiO ₃ Weight Ratio on the Dielectric Temperature Behavior of Ni BaTiO ₃ – High Capacitance MLCC	S.N SEOK, D.S SHIN, M.K KIM, Jung Rag YOON Samwha Capacitor. Co. Ltd, South Korea
102	A-0494	Domain Structure Investigation in Sr-Doped Potassium Sodium Niobate Lead-Free Piezoelectric Ceramics	Jitka HREŠČAK ¹ , Julian WALKER ¹ , Goran DRAZIC ² , Denis ALIKIN ³ , Anton TURIGIN ³ , Tadej ROJAC ¹ , Barbara MALIC ¹ , Vladimir SHUR ³ , Andrei L. KHOLKIN ⁴ , Andreja BENČAN ¹ ¹ Jožef Stefan Institute, Slovenia, ² National Institute of Chemistry, Slovenia, ³ Ural Federal University, Russian Federation, ⁴ University of Aveiro, Portugal
103	A-0495	Frequency and Temperature Dependences of Electrical Properties of Lead-free (Na _{0.53} K _{0.47})(Nb _{1-x} Ta _x)O ₃ Piezoelectric Ceramics	Jin Soo KIM, A. HUSSAIN, T. K. SONG, W. J. KIM, H. S. LEE, M. H. KIM Changwon National University, South Korea

104	A-0498	Optical, Dielectric and Photocatalytic Properties of Perovskite ZnTiO ₃ Nanoparticle Synthesized by Sonochemical Process	Chakkaphan WATTANAWIKKAM, W. PECHARAPA <i>King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand</i>
105	A-0506	Numerical Simulation of Swing Vibrator and Researches on Performance of Valve-Less Piezoelectric Pump	Xiaoqi HU <i>Lishui University, China</i>
106	A-0510	Antisite Disorder Induced Magnetic, Dielectric and Magnetodielectric Behavior of Sr Doped Double Perovskite La _{2-x} Sr _x CoMnO ₆ (x=0.0, 0.5, and 1.0)	Pampa MANDAL, T.K. NATH <i>Indian Institute of Technology Kharagpur, India</i>
107	A-0511	Conductivity and Dielectric Relaxation of Na _{0.5} Bi _{0.5} TiO ₃ Single Crystal	T.V. KRUZINA ¹ , Vasyi SIDAK ¹ , M.P. TRUBITSYN ¹ , S.A. POPOV ¹ , J. SUCHANICZ ² ¹ <i>Oles Honchar Dnipropetrovsk National University, Ukraine,</i> ² <i>Pedagogical University, Poland</i>
108	A-0513	Study of Structural, Dielectric, Ferroelectric, and Electrocaloric Properties of Lead-Free Ba _{0.8} Ca _{0.2} Ti _(1-x) Ge _x O ₃ Ceramics	Bouchra ASBANI ¹ , J.-L. DELLIS ¹ , A. LAHMAR ¹ , M. AMJOUND ² , Y. GAGOU ¹ , D. MEZZANE ² , M. EL MARSSI ¹ ¹ <i>Université de Picardie Jules Verne, France,</i> ² <i>Université Cadi Ayyad, Morocco</i>
109	A-0514	How to Improve Sensitivity of Piezo Force Microscopy Measurements by FIB Shaping: Development of New Type of Cantilever	Natalya ALYABYEVA ¹ , Damien MCGROUTHER ² , Oleg AGEEV ³ , Antoine RUYTER ¹ ¹ <i>University of Tours, France,</i> ² <i>University of Glasgow, United Kingdom,</i> ³ <i>Southern Federal University, Russian Federation</i>
110	A-0521	New Antiferro-/Ferroelectric Complex Perovskite Solid Solutions for High-Density Energy Storage Applications	Siqi HUO ¹ , Zihe REN ¹ , H. WU ¹ , Nan ZHANG ¹ , Zuo-Guang YE ^{1,2} ¹ <i>Simon Fraser University, Canada,</i> ² <i>Xi'an Jiaotong University, China</i>
111	A-0522	Structure, Phase Transitions and Local Piezoresponse of K _{1-x} Na _x NbO ₃ (KNN)-Based Single Crystals	Jenny WONG ¹ , Nan ZHANG ¹ , Xiaoqing WU ² , Wei REN ² , Zuo-Guang YE ^{1,2} ¹ <i>Simon Fraser University, Canada,</i> ² <i>Xi'an Jiaotong University, China</i>
112	A-0523	Preparation and Characterization of Graphene and its Application in Organic Photovoltaic Cells	Moataz M. SOLIMAN, Ahmed A. SAED, Yasmin M. YOUSRY, Ayman M. MOHAMED <i>Alexandria University, Egypt</i>
113	A-0524	Quantitative Nanometer-Scale Mapping of Dielectric Tunability	Alexander TSELEV ¹ , Andreas KLEIN ² , Jürgen GASSMANN ² , Stephen JESSE ¹ , Qian LI ¹ , Sergei V. KALININ ¹ , Nina BALKE ¹ ¹ <i>Oak Ridge National Laboratory, United States,</i> ² <i>Darmstadt University of Technology, Germany</i>
114	A-0526	The Interplay Between Cantilever Dynamics and Measured Ferroelectric Switching Characteristics in Piezoresponse Force Microscopy	Nina BALKE ¹ , Stephen JESSE ¹ , Petro MAKSYMIVYCH ¹ , Qian LI ¹ , Pu YU ² , Sergei V. KALININ ¹ , Alexander TSELEV ¹ ¹ <i>Oak Ridge National Laboratory, United States,</i> ² <i>Tsinghua University, China</i>
115	A-0527	Study of LiNbO ₃ Crystal Under Oscillated Vibration at High Temperature for Energy Harvesting in Hostile Environment	Emmanuel LE BOULBAR, C.R. BOWEN <i>University of Bath, United Kingdom</i>
116	A-0530	PZN-PT Single Crystal Compact Tonpilz Projectors	Shuangjie ZHANG ^{1,2} , Leong Chew LIM ¹ , Dian-Hua LIN ¹ ¹ <i>Microfine Materials Technologies Pte Ltd, Singapore,</i> ² <i>National University of Singapore, Singapore</i>
117	A-0536	Dielectric, Piezoelectric and Ferroelectric Properties of (1-x)(Na,K)NbO ₃ -xLiSbO ₃ Lead-Free Ceramics at Different Sintering Temperature	Jinhwan KIM, J.H. KOH <i>Chung-Ang University, South Korea</i>
118	A-0537	Morphological and Dielectric Properties Depend on Sintering Conditions of CaCu ₃ Ti ₄ O ₁₂ Ceramics for Supercapacitor	Ji-Won LEE ¹ , Jung-Hyuk KOH ² ¹ <i>Chung-Ang university, South Korea,</i> ² <i>Chung-Aung University, South Korea</i>
119	A-0538	Piezoelectric and Ferroelectric Properties in (1-x)Bi(Zn _{2/3} Nb _{1/3})O ₃ -(x)PbTiO ₃ Solid Solution System	Dong-Jin SHIN, Jung-Hyuk KOH <i>Chung-Aung University, South Korea</i>

Student Poster Competition

Monday, May 25, 2015 / Level 2 / 18:15 - 19:00

Student Poster Competition

1	A-0038	A Cross Beam Linear Ultrasonic Motor Using Bending Vibrations	Dongmei XU, Yingxiang LIU, Junkao LIU, Weishan CHEN <i>State Key Laboratory of Robotics and System, Harbin Institute of Technology, China</i>
2	A-0050	The Correlations Between the Resistive Switching and Electromechanical Behaviors in Different Nickel Oxide Thin Films with Deposited Oxygen Partial Pressure Studied by Scanning Probe Microscopy Techniques	Juanxiu XIAO ¹ , Septian CHANDRIKA ¹ , Lai-Mun WONG ² , Shijie WANG ² , Kaiyang ZENG ¹ <i>¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
3	A-0069	Micromachined Lithium Niobate Ridges Waveguides for Electro-Acoustic and Electro-Optic Applications	Fabien HENROT ¹ , Florent BASSIGNOT ² , Nadège COURJAL ¹ , Gwenn ULLIAC ¹ , Sylvain BALLANDRAS ³ <i>¹ FEMTO-ST (Franche-Comté Electronique Mécanique Thermique et Optique – Sciences et Technologies), France, ² FEMTO Engineering, France, ³ Frec n sys, France</i>
4	A-0074	Evaluation of Oxygen Vacancy in ZnO Using Raman Spectroscopy	Hiroaki FUKUSHIMA ¹ , Tomomi KOZU ¹ , Hiromi SHIMA ¹ , Hiroshi FUNAKUBO ² , Hiroshi UCHIDA ³ , Takashi KATODA ⁴ , Ken NISHIDA ¹ <i>¹ National Defense Academy, Japan, ² Tokyo Institute of Technology, Japan, ³ Sophia University, Japan, ⁴ Kochi University of Technology, Japan</i>
5	A-0106	High-Voltage Drive Characteristics of Binary and Mn-Modified PZN-PT Single Crystals	Yu HUANG ¹ , Leong Chew LIM ² , Kui YAO ³ <i>¹ National University of Singapore, Singapore, ² Microfine Materials Technologies Pte Ltd, Singapore, ³ Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
6	A-0118	Lead-free (K _{0.5} Na _{0.5})NbO ₃ Ferroelectric Thin Films Derived From Chemical Solution Modified With MEA, DEA and EDTA	Yumei WANG ^{1,2} , Kui YAO ² , Francis Eng Hock TAY ¹ , Meysam SHARIFZADEH MIRSHEKARLOO ² <i>¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore</i>
7	A-0124	Local Probing of Li-ions Movements in Li-rich Cathode by Electrochemical Strain Microscopy	Shan YANG, Binggong YAN, Li LU, Kaiyang ZENG <i>National University of Singapore, Singapore</i>
8	A-0138	Epitaxial Growth of (100)/(001) PZT-Based Thin Film on (111) Si Wafer Using SrRuO ₃ /LaNiO ₃ /Pt/CeO ₂ Buffer Layer	Takeshi HAYASAKA, Shinya YOSHIDA, Shuji TANAKA <i>Tohoku University, Japan</i>
9	A-0203	Converse Piezoelectricity and Domain Structure of AgSbO ₃ -Modified (Li,K,Na)(Nb,Ta)O ₃ Lead-free Piezoceramics	Qing LIU ¹ , Fang-Yuan ZHU ¹ , Bo-Ping ZHANG ² , Long-Tu LI ¹ , Jing-Feng LI ¹ <i>¹ Tsinghua University, China, ² University of Science and Technology Beijing, China</i>
10	A-0240	Role of Interface in Resistive Switching of NiO Nanocrystals on SrTiO ₃	Xuan CHENG ¹ , Jivika SULLAPHEN ¹ , Matthew WEYLAND ² , Hongwei LIU ³ , Valanoor NAGARAJAN ¹ <i>¹ The University of New South Wales, Australia, ² Monash University, Australia, ³ University of Sydney, Australia</i>
11	A-0298	Fabrication of Tetragonal Pb(Zr,Ti)O ₃ Nanorods by Focused Ion Beam and Characterization of the Domain Structure	Daisuke ITO ¹ , Tomoaki YAMADA ¹ , Osami SAKATA ^{2,3} , Junki KUROISHI ⁴ , Takahiro NAMAZU ⁴ , Takahisa SHIRAIISHI ³ , Takao SHIMIZU ³ , Hiroshi FUNAKUBO ³ , Masahito YOSHINO ¹ , Takanori NAGASAKI ¹ <i>¹ Nagoya University, Japan, ² National Institute for Materials Science, Japan, ³ Tokyo Institute of Technology, Japan, ⁴ University of Hyogo, Japan</i>
12	A-0301	Integration of Pb(Zr,Ti)O ₃ Thin Films with Photo-Sensitive Polymer	Takashi OKUBO, Kensuke KANDA, Takayuki FUJITA, Kazusuke MAENAKA <i>University of Hyogo, Japan</i>

13	A-0303	Optimization of Short Channel Ferroelectric MOSFET for Low Power Circuit Application	Yang LI ¹ , Yong LIAN ¹ , Kui YAO ² , Ganesh SAMUDRA ¹ ¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
14	A-0309	Spatial and Time-Resolved Direct Measurement of Electrocaloric Effect Using Infrared Thermal Imaging	Maciej ROKOSZ ¹ , Nadia SMITH ² , Tatiana CORREIA ² ¹ National Physical Laboratory/ Imperial College London, United Kingdom, ² National Physical Laboratory, United Kingdom
15	A-0319	Polarization Orientation and Enhanced Properties in Piezoelectric P(VDF-TrFE) Nanotube Array	Weng Heng LIEW ¹ , Meysam SHARIFZADEH MIRSHEKARLOO ² , Shuting CHEN ² , Kui YAO ² , Francis Eng Hock TAY ¹ ¹ National University of Singapore, Singapore, ² Institute of Materials Research and Engineering, A*STAR (Agency for Science, Technology and Research), Singapore
16	A-0331	Sub-Micron Domain Engineering in Lithium Niobate by Laser Light Irradiation of Patterned Chromium	Andreas BOES ¹ , Vijay SIVAN ¹ , Guanghui REN ¹ , Didit YUDISTIRA ¹ , Sakellaris MAILIS ² , Elisabeth SOERGEL ³ , Arnan MITCHELL ¹ ¹ RMIT University, Australia, ² University of Southampton, United Kingdom, ³ University of Bonn, Germany
17	A-0340	Composition Gradient Effect on the Phase Transition of Morphotropic Pb(Zr,Ti)O ₃ Thin Films	Veronika KOVACOVA ¹ , Nicolas VAXELAIRE ¹ , Gwenael LE RHUN ¹ , Patrice GERGAUD ¹ , Emmanuel DEFAY ² ¹ CEA-Leti: Laboratoire d'électronique des technologies de l'information, France, ² Luxembourg Institute of Science and Technology (LIST), Luxembourg
18	A-0366	Tuning the Polarization Switching Dynamics Through Polarization Coupling in a PbZr _x Ti _(1-x) O ₃ / ZnO Heterostructure for Neuron Like Synaptic Memory	Anirban GHOSH, G. KOSTER, G. RIJNDERS University of Twente, Netherlands
19	A-0496	Giant Electrostriction in Doped Bi ₂ O ₃ Ceramics	Nimrod YAVO ¹ , Alaric SMITH ² , Roman KOROBKO ¹ , Peter SLATER ² , Igor LUBOMIRSKY ¹ ¹ Weizmann Institute of Science, Israel, ² University of Birmingham, United Kingdom
20	A-0505	Magnetic Properties of Dy-Modified 0.66BiFeO ₃ -0.34PbTiO ₃ Multiferroic Solid Solution Ceramics	Jian ZHUANG ¹ , Lun-Wei SU ² , Hua WU ³ , Ming LIU ¹ , Wei REN ¹ , Zuo-Guang YE ^{1,2} ¹ Xi'an Jiaotong University, China, ² Simon Fraser University, Canada, ³ Donghua University, China