

		Tutorials	
		Room: A4	Room: A5
09:00 – 10:30		Nazanin Bassiri-Gharb Probing electromechanical response through contact-AFM: an overview of PFM techniques and possible artifacts	Paul Muralt Micro fabrication, thin film deposition, and materials choice for piezoelectric energy harvesters
10:30 – 11:00		Coffee Break	
11:00 – 12:30		John Daniels Studying function in polycrystalline ferroic systems using x-ray and neutron scattering methods	George Rossetti Jr. Thermodynamic phenomenology of ferroelectrics
12:30 – 13:30		Lunch	
13:30 – 15:00		Peter Felfer Atom probe tomography: single atom analysis of materials	Kyle Webber Mechanical properties and fracture of perovskite ferroelectrics
15:00 – 15:30		Coffee Break	
15:30 – 17:00		Ian M. Reaney Structure property relations in dielectric ceramics	Zuo-Guang Ye Development and understanding of high-performance piezo-/ferroelectric single crystals
17:00 – 20:00		FerroCom Meeting (University Library, Building S1 20, Room 01)	
20:00 – 21:00		PFM Advisory Board Meeting (University Library, Building S1 20, Room 01)	
18:00 – 23:00		Early Stage Researcher Mixer	

08:15 – 08:30	Welcome Address				
08:30 – 09:30	Plenary Lecture – Alexei Gruverman "Piezoresponse Force Microscopy – candid camera for the nanoferroelectric world"				
09:30 – 10:00	Coffee Break				
	Session 1a – ECAPD-ISAF Multiferroics, Bismuth-based Systems and Photovoltaics Chair: Mario Maglione Room: A01	Session 1b – PFM Domain walls and beyond solid state Chair: Nagarajan Valanoor Room: A02	Session 1c – ISAF Piezoelectrics Chair: Shujun Zhang Room: A03	Session 1d – ISAF Defects Prof. Kitamura Memorial Session Chair: Andrei Kholkin Room: A04	Session 1e – ISAF Electron microscopy and local characterization Chair: Xiaoli Tan Room: A5
10:00 – 10:15	Lynette Keeney Direct Visualization of Magnetic Field-Induced Magnetolectric Switching in Multiferroic Aurivillius Phase Thin Films	Marty Gregg Self-Ordering and Self-Assembly of Domains and Domain Walls in Ferroelectrics	Tim Stevenson HotSense®; a high temperature piezo ultrasonics platform	Memorial for Prof. Kitamura	Elizabeth Dickey Local Structure Analysis of Ferroelectrics via Aberration-Corrected Transmission Electron Microscopy
10:15 – 10:30	INVITED PRESENTATION	INVITED PRESENTATION	INVITED PRESENTATION	Vladimir Shur Self-Assembly of Ferroelectric Domain Structures	INVITED PRESENTATION
10:30 – 10:45	Leonard Henrichs Multiferroic clusters: a new perspective for relaxor-type room-temperature multiferroics	Jian Zhuang Piezoresponse and Domain Evolution in Multiferroic (1-x)BiFeO ₃ -xPbTiO ₃ Single Crystals	Yu Huang Large Stroke High Fidelity PZN-PT Single Crystal "Stake" Actuator	Kai-Christian Meyer Oxygen vacancy migration in sodium bismuth titanate studied by density functional theory calculations	Jakob Schaab Contact-free conductance-mapping of polar domains in SrMnO ₃ films by dose-dependent low-energy electron microscopy
10:45 – 11:00	Nikhilendu Tiwary Piezoresponse force microscopy (PFM) characterization of GaN nanowires grown by Plasma assisted Molecular beam epitaxy (PAMBE)	Wei Sun Ferroelectric domains and phase transition of sol-gel processed epitaxial Sm-doped BiFeO ₃ /Nb:SrTiO ₃ (100) thin films	Shuangjie Zhang [011]-Poled TROB Direct Drive Broadband Single Crystal Underwater Transducers	Jie Zhang Dielectric Responses, Thermally Stimulated Relaxations, and Defect-Property Correlations in Linear Ti-Containing Dielectrics	Leopoldo Molina-Luna In situ formation of core-shell ferroelectric (Bi _{1/2} Na _{1/2})TiO ₃ -xSrTiO ₃ nanoparticles
11:00 – 11:15	Halyna Volkova Optical-structure relationship in Ba(Sn,Ti)O ₃ solid solution	Philippe Tückmantel Roughness, dynamics and conduction at domain walls in Pb(Zr _{0.2} Ti _{0.8})O ₃ thin films: understanding the role of defects, surface adsorbates and substrate	Hongchen Miao Realization of face-shear (d ₃₆) mode in PZT ceramics via ferroelastic domain engineering and its applications in shear-horizontal wave excitation	Thorsten Bayer Electrical transport properties of degraded perovskite type capacitors	Nan Zhang Investigating Morphotropic Phase Boundary of PbZr _{1-x} Ti _x O ₃ from the Local Scale
11:15 – 11:30	Ingrid Canero Infante Optical, structural and chemical properties of BiFeO ₃ particles for photocatalysis	Open Discussion	Susan Burrows High temperature flexural ultrasonic transducer for non-contact measurement applications	Robyn Ward The effect of dopant ions on the electrical stability of barium titanate	Dong Hou Local and mesoscale structural changes in BaTiO ₃ -Bi(Zn _{0.5} Ti _{0.5})O ₃ under electric- field or elevated temperature
11:30 – 11:45	INVITED PRESENTATION	Yonatan Calahorra SPM Analysis of Template Assisted Piezoelectric Polymer Nanaowires	Ignasi Fina Vehicle classification system based on ferroelectric materials	Robin Nigon Ageing in PZT Thin Films With Interdigitated Electrodes	Liqian Cheng Nanoscale insight into piezoelectricity of lead-free (K,Na)NbO ₃ single crystals
11:45 – 12:00	Said Yousfi Investigation of the photovoltaic effect in BiFeO ₃ thin films	Carlos Rosero Biological system explored by Piezoresponse Force Microscopy	Andrew Nasedkina Finite element analysis of ultrasonic spherical piezoelectric phased array with split electrodes	Martijn Kemerink Bulk conductivity switching in molecular semiconducting ferroelectrics	Alp Sehirlioglu Structure-property-processing relationships in modified Bi(B'B'')O ₃ -based piezoelectrics
12:00 – 12:15	Akash Bhatnagar Photoelectric processes in multiferroic materials	Andrei Kholkin Electromechanical properties of 2D-materials: graphene on SiO ₂	Jian Yu Novel perovskite-type ferroelectrics with high Curie temperature and piezoresponse	Derek C. Sinclair The influence of non-stoichiometry and chemical doping on the electrical properties of Na _{1/2} Bi _{1/2} TiO ₃ ceramics	Anton Goetzee-Barral Electric-field dependent local structure of potassium sodium bismuth titanate
12:15 – 12:30	INVITED PRESENTATION	INVITED PRESENTATION	Daniele Sette Processing and characterization of transparent piezoelectric thin films on glass substrates for large area transducers	INVITED PRESENTATION	
12:30 – 13:30	Lunch				
12:30 – 14:00	ECAPD Advisory Board Meeting (Building S1 01, Room 707)				

	Session 2a – ECAPD-ISAF Controversial Ferroelectrics and Devices	Session 2b: PFM Signal Origins	Session 2c – ISAF Energy Harvesting and Energy Transfer	Session 2d – ISAF Multiferroics II	Session 2e - ISAF Electrical Properties I
	Chair: Lynette Keeney Room: A01	Chair: Stephen Jesse Room: A02	Chair: Takaaki Tsurumi Room: A03	Chair: Brahim Dkhil Room: A04	Chair: Eberhard Hennig Room: A5
13:30 – 13:45	Thomas Mikolajick Status of Ferroelectric HfO ₂ based 1T FeFET Memories INVITED PRESENTATION	Petro Maksymovych Local probes of field-induced changes in complex oxide materials INVITED PRESENTATION	Hitesh Borkar Lead-free Anti-ferroelectric Relaxor for Energy Harvesting Applications	Igor Levin Facile Oxygen Absorption/Desorption and Local Structure in YMn _{1-x} Ti _x O ₃ INVITED PRESENTATION	Brienne Johnson Ferroelectricity and Non-ferroelectricity in Lead-free La and Y – Doped HfO ₂ Bulk Ceramics and Thin Films
13:45 – 14:00			Philipp Dorsch Simulation-Based Design and Optimization of Piezoelectric Energy Harvesting Systems - from Mechanical Excitation to usable Electrical Energy		Laura Stoica Substitution of B-site ions with Mn in PIN-PMN-PT: Influence on properties
14:00 – 14:15	Ulrich Boettger Effects of oxygen vacancies movement in ferroelectric yttrium doped hafnium oxide	Andres Gomez Diminishing Electrostatic Contribution in Piezoresponse Force Microscopy	Ahmad Safari Piezoelectric Energy Harvesting Using a Novel Cymbal Transducer Design	Hiroko Yokota The appearance of ferroelectricity and weak ferromagnetism of hexagonal stabilized ErFeO ₃ thin film	Lovro Fulanović Electrocaloric 0.9Pb(Mg _{1/3} Nb _{2/3})O ₃ -0.1PbTiO ₃ multilayer elements for cooling applications
14:15 – 14:30	Chuying Yu Titanium-Dioxide Ceramic: Unique High Permittivity and Ultra-Low Loss Terahertz Material	Faxin Li Deep understanding of PFM in ferroelectric domain imaging and characterization of polarization switching INVITED PRESENTATION	Brendan Hanrahan Wireless Power Transfer via Pyroelectrics	Marin Alexe Toroidal ferroelectricity in multiferroic tunnel junctions	Industry Presentations
14:30 – 14:45	Nikola Novak Mechanical modulation of Schottky barrier on ZnO single crystal		Anjali Sharma Development of metal oxide thin films for self power generating integrated devices	Huai-Yu Wang Mutual Control Mechanism between magnetization and polarization in Multiferroic Materials	
14:45 – 15:00	So Maejima Improved Endurance Properties of MOD-made BaTiO ₃ Thin Film Diode for ReRAM Application by Controlling Oxygen Vacancies in Nitrogen Annealing		Reema Gupta Multiferroic PZT/Ni cantilevers for magnetoelectric applications		
15:00 – 15:30			Coffee Break		

	Session 3a – ECAPD-ISAF Composites	Session 3b – PFM Boundary conditions	Session 3c – ISAF Thin films I	Session 3d – ISAF Electrocalorics	Session 3e – ISAF Domains and domain walls I
15:30 – 15:45	Chair: Igor Levin Room: A01 Mario Maglione Breaking the shell INVITED PRESENTATION	Chair: Petro Maksymovych Room: A02 Junling Wang Giant Photostriction in MAPbI3 and Ferroelectric Photovoltaic Effect INVITED PRESENTATION	Chair: Matthew Dawber Room: A03 Kenji Shibata Development of lead-free (K,Na)NbO3 [KNN] piezoelectric films INVITED PRESENTATION	Chair: Gunnar Suchanek Room: A04 Sylvia Gebhardt Study on Electrocaloric Multilayer Ceramics Based on PMN-8PT Brigita Rozic Caloric effects in PZ-based antiferroelectrics and soft materials	Chair: Manuel Hinterstein Room: A5 Tadej Rojac Domain Walls in Polycrystalline BiFeO3: Local Conductivity, Defect Accumulation and Dynamics INVITED PRESENTATION
15:45 – 16:00					
16:00 – 16:15	Till Frömling Controlling core-shell formation in BNT-ST	Kunyu Zhao Domain dynamics of perovskite transparent ceramics studied by piezoresponse force microscopy	Barbara Malič Influence of strontium doping on microstructure and functional properties of lead-free piezoelectric $K_{0.5}Na_{0.5}NbO_3$ thin films	Yang Bai Determination of Ferroelectric Order on Electrocaloric Effect in Ferroelectric Ceramics	Tingting Jia Domain switching in multiferroic $Bi_{0.9}La_{0.1}FeO_3$ thin films by Scanning Probe Microscopy
16:15 – 16:30	Daniella Deutz Flexible piezoelectric (K,Na,Li)NbO ₃ -polymer composites	Open Discussion	Ruben Hühne Preparation of freestanding PMN-PT films on Si- based templates for electrocaloric studies	Constanze Kalcher Electrocaloric effect in model ferroelectrics: Indirect vs. direct analysis of materials with first and second order phase transitions	Ichiro Fujii Domain Structures of Potassium-Substituted Sodium Niobate Films Observed By Confocal Laser Scanning Microscopy
16:30 – 16:45	Takashi Okubo Pb(Zr,Ti)O ₃ Thin Films Integrated with Epoxy Polymer Applications to Low Energy Haptics Device	Patrycja Paruch A change of climate: using temperature, relative humidity, and electrostatic boundary conditions to control ferroelectric domain switching and geometry	Ken-ichi Mimura Fabrication and characterization of Ba(Zr _x Ti _{1-x}) O ₃ nanocube 3D assembly films	Madhura Marathe Electrocaloric effect in bulk BaTiO ₃ : Effect of electric field direction at ferroelectric transitions	Qing Liu Domain Morphology and Thermal Stability of (Li,K,Na)NbO ₃ -BaZrO ₃ -(Bi,Na)TiO ₃ Lead-free Piezoceramics
16:45 – 17:00	Hamideh Khanbareh Highly Sensitive Piezo Particulate-Polymer-Foam Composites for Robotic Skin Applications	INVITED PRESENTATION	José. A. Pardo Epitaxial stabilization and dielectric properties of multiferroic Sr _{1-x} Ba _x MnO ₃ films	Andraž Bradeško Solid-state cooler as an array of multifunctional cantilevers: simulation & experiment	Fedir Borodavka Combined PFM and Raman scattering study of domain boundaries in BiFeO3 ceramics
17:00 – 17:15	Dominik Gedeon A Spatially Resolved Modeling Approach for Piezoelectric Composite Structures Based on Finite Elements	Iaroslav Gaponenko Probing the interaction of surface adsorbates with ferroelectric domains	Kui Yao Thermal Sprayed Potassium-sodium Niobate (KNN) Based Lead-free Piezoelectric Ceramic Coatings	David Lu Large Electrocaloric Effect in Relaxor Ferroelectrics, Antiferroelectrics and Multilayer Ceramic Capacitors	Wei Ren Domain Structure and Switching Behavior of Lead-free BNT Based Polycrystalline Thin Films Investigated by Piezoresponse Force Microscopy
17:15 – 17:30	Ahmet Erkan Gurdal High Power Multilayer Co-Fired Step-Down Piezoelectric Transformers	Christian Weymann Growth temperature as a tuning parameter for intrinsic polarization orientation in ferroelectric thin films	Tatiana Volk Domain Engineering in LiNbO ₃ -based Optical Waveguides and Films with the Use of Microscopic Methods.	Yang-Bin Ma Positive and negative electrocaloric effect in the presence of defect dipoles	
17:30 – 18:30	Poster Session and Student Poster Competition				
18:00 – 19:00	IEEE President's Reception (Welcome Hotel Bistro)				
19:00 – 22:00	Welcome Reception (Herrngarten Café)				

08:30 – 09:30	Plenary Lecture – Agnes Barthelemy "Ferroelectric-based heterostructures"				
09:30 – 10:00	Coffee Break				
	Session 4a – ECAPD-ISAF Various topics	Session 4b – PFM Technical developments	Session 4c – ISAF Thin films: High frequency and optical properties	Session 4d – ISAF Domain walls and domain structure II	Session 4e – ISAF Novel characterization techniques
	Chair: Akash Bhatnagar Room: A01	Chair: Junling Wang Room: A02	Chair: Tim Stevenson Room: A03	Chair: Craig Fennie Room: A04	Chair: Julia Glaum Room: A5
10:00 – 10:15	Ingrid Canero Infante Polarization-induced strain and wall roughness in ferroelectric 180° stripe domains probed by diffuse X-ray scattering	Stephen Jesse AFM Based Spectroscopy Technique for Ultrafast Polarization Switching in Ferroelectrics	Ronald Polcawich PZT Based PiezoMEMS Technology for RF Applications	Nagarajan Valanoor Ferroelastic domain wall lability and polarization rotation in bilayer ferroelectric thin films.	Hugh Simons Dark-field x-ray microscopy: in-situ 3D nano-imaging of domain topologies and their strain fields
		INVITED PRESENTATION	INVITED PRESENTATION	INVITED PRESENTATION	INVITED PRESENTATION
10:15 – 10:30	Joel Walenza-Slabe Leakage Current in Polycrystalline Bi(Na,K)TiO ₃ -based Thin Films				
10:30 – 10:45	Jiri Hlinka Nanometer-range B-site order in PMN relaxor	Florian Johann Quantitative Measurements of Electromechanical Response with Interferometric Atomic Force Microscopy	Matthijn Dekkers Integration of epitaxial oxides on silicon for Piezoelectronic Transduction Memory Devices	Dorothee Braun Superdomain structure of alternately arranged monoclinic domains in (K,Na)NbO ₃ on NdScO ₃ grown with MOCVD	Yoshiomi Hiranaga Nanoscaled Permittivity Distribution Imaging Using an SNDM Probe
10:45 – 11:00	Marco Deluca Influence of texture on the piezoelectric properties of PZT-based high performance piezoceramic actuators	Huarong Zeng Nanoscale electromechanical and thermal behavior of ferroelectric materials	Kongbrailatpam Sandeep Switchable High Overtone Resonance in BST film with MIM structure on Sapphire Substrate	Petr Bednyakov Ferroelectric charged domain walls produced by superbandgap illumination	Kaustuv Datta New insights into morphotropic phase boundaries of ferroelectric solid solutions from pair distribution function analysis
11:00 – 11:15	Surbhi Gupta Study of ferroelectric sbn thin films for electro-optic applications	Andres Gomez Direct Piezoelectric Force Microscopy	Daniel Sando Reversible electrochromism and large elasto-optic effect in BiFeO ₃ thin films	Guillaume Nataf Functional polar domain walls in ferroelastic calcium titanate	Hyeokmin Choe Time-resolved reciprocal space mapping of Na _{0.5} Bi _{0.5} TiO ₃ single crystal under an alternative electric field
11:15 – 11:30	Stefania Oliveri Epitaxy, optical and acoustical properties of X-, Y-, and Z-axis oriented LiNbO ₃ thin films on sapphire substrates	Na Liu Visualization of polar nanoregions in bismuth-alkali-based relaxor ferroelectrics revealed by high-resolution PFM and quantification of the relaxation behavior via high-speed PFM	Monika Tomar Prominent photovoltaic response in multiferroic BFO/BTO heterostructures	Victoria Pryakhina Morphology of Head-to-head and Tail-to-tail Charged Domain Walls in Lithium Niobate with Inhomogeneous Bulk Conductivity	Veronica Goian Demonstration of Spin-Phonon Coupling in IR, THz and MW Spectra of Sr _{1-x} Ba _x Mn _{1-y} Ti _y O ₃ Ceramics and Sr _{1-x} Ba _x MnO ₃ Thin Films
11:30 – 11:45	Volodymyr Skoromets Terahertz dielectric properties of KTaO ₃ crystal: electric-field tunability, comparison with SrTiO ₃	Hana Ursic Influence of poling on the domain structure in relaxor-ferroelectric	Fanmao Liu Role of surface states on the photoresponse of BaTiO ₃ thin films	Peggy Schönherr Low-temperature transport phenomena at charged semiconducting domain-walls	Neus Domingo Water assisted surface charge screening on LiNbO ₃ by Near Ambient Pressure X-ray Photoelectron Spectroscopy (NAPPS)
11:45 – 12:00	Cedric Meyers Tunable Interdigital Capacitors Fabricated on Low-Loss Ba _{0.25} Sr _{0.75} TiO ₃ Grown by Hybrid MBE	Jinyan Zhao Domain Structure and Switching Behavior in Lead-free Epitaxial 0.94(Na _{0.5} Bi _{0.5})TiO ₃ -0.06BaTiO ₃ Thin Films with Piezoresponse Force Microscope	Thomas Lenz Thin Film Thermistor with Positive Temperature Coefficient based on Bistable Ferroelectric Memory Diodes	Nathalie Lemee Domain engineering and Polarization Rotation in Ferroelectric Tricolor Superlattices	Pedro B. Groszewicz Distribution of local structures in lead-free relaxor ferroelectrics: (Bi _{1/2} Na _{1/2})TiO ₃ -BaTiO ₃ investigated with ²³ Na NMR
12:00 – 12:15	Jorge Iniguez First-principles insights into ferroelectric metals and doped ferroelectrics	Kurt Franke The Creation of the Piezoresponse Force Microscopy (PFM) 23 Years Ago	Andrei Vorobiev Graphene field-effect transistors on LiNbO ₃ ferroelectric substrates	Shujun Zhang Observation of relaxor-PT single crystals at cryogenic temperatures: contribution from polar nanoregion	Sara Gonzalez Polarization dependence of the SrRuO ₃ /BaTiO ₃ interface studied by operando Hard X-ray PhotoEmission Spectroscopy
12:15 – 12:30	INVITED PRESENTATION	INVITED PRESENTATION		INVITED PRESENTATION	
12:30 – 13:30	Lunch				
12:30 – 13:30	Women in Engineering Panel Discussion (Lunch Provided, Welcome Hotel)				

	Session 5a – ECAPD-ISAF Energy storage	Session 5b – ISAF Textured materials	Session 5c – ISAF Electrodes, interfaces, tunnel junctions	Session 5d – ISAF New ferroelectrics, HfO ₂	Session 5e – ISAF Electrical properties II
	Chair: Jorge Iniguez Room: A01	Chair: Hugh Simons Room: A02	Chair: Marty Gregg Room: A03	Chair: Thomas Mikolajick Room: A04	Chair: Ian Reaney Room: A5
13:30 – 13:45	Craig Fennie Towards an understanding of antiferroelectricity in PbZrO ₃ from first principles	Pam Thomas X-ray white beam topography of self-organized domains in flux-grown BaTiO ₃ single crystals	Di Wu Performance Enhancement in Ferroelectric Tunnel Junctions with Active Electrodes and Barriers	Hiroshi Funakubo Fundamental Understanding of Ferroelectricity in HfO ₂ -based Ferroelectrics	Xiaoli Tan Giant Electrostrains in Bismuth-Alkali-Based Perovskite Oxides
13:45 – 14:00	INVITED PRESENTATION	INVITED PRESENTATION	INVITED PRESENTATION	INVITED PRESENTATION	Jurij Koruza Mechanisms of thermal depolarization and electromechanical response of lead-free 0.94(Bi _{1/2} Na _{1/2})TiO ₃ -0.06BaTiO ₃ :xZnO relaxor/semiconductor composites
14:00 – 14:15	Lei Zhao Energy storage performance of AgNbO ₃ -based lead-free anti-ferroelectric ceramics	Dandan Wei Templated Grain Growth and Piezoelectric Properties of <001>-Textured PIN-PMN-PT Ceramics	Nazanin Bassiri-Gharb Irradiation Effects on Ferroelectric Thin Films: Metal vs. Oxide Electrodes	Tony Schenk Internal Bias Fields in Ferroelectric HfO ₂ Thin Films and their Structural Origins	Ge Wang In-situ electric field study in Na _{0.5} Bi _{0.5} TiO ₃ -KNbO ₃ ceramics
14:15 – 14:30	Lin Zhang Dielectric properties and relaxation behavior in Mn-doped Ca _{0.6} Sr _{0.4} TiO ₃ ceramics for energy storage	Jan Schultheiß Effect of texturing on the polarization switching dynamics in ferroelectric ceramics	Daniel Potrepka IrO ₂ Electrode Optimization for PbZr _x Ti _{1-x} O ₃ Devices	Alfred Kersch Grain Size Effect in Ferroelectric Hafnium Oxide	Dong Zhao Retention of Unsaturated Polarization in Ferroelectric Materials Enabling Memories for Multi-bit Data Storage
14:30 – 14:45	Jie Chen Sandwich-Structure Modulated Poly(vinylidene fluoride) Polymer with Enhanced Energy Density and Discharged Efficiency via Adding Polyacrylate Elastomers Interlayer	Yasunari Miwa The improvement of the piezoelectric properties in Pb(Ni _{1/3} Nb _{2/3})O ₃ -Pb(Zr,Ti)O ₃ ceramics by grain orientation and their dependence on the orientation direction	Hoda Kainirad Domain engineering using a Si-electrode stamp	Deepthi Kamath Mangalore Absence of ferroelectricity in lead halide perovskite solar cells	Soodkhet Pojprapai Frequency effect on electrical fatigue behaviors in Pb(Mg _{1/3} Nb _{2/3}) _{0.65} Ti _{0.35} O ₃ ceramics
14:45 – 15:00	Qibin Yuan Enhanced energy storage and dielectric properties of BaTiO ₃ /BaTiO ₃ @SiO ₂ layered ceramics	Haibo Zhang Textured (Bi _{1/2} Na _{1/2})TiO ₃ -BaTiO ₃ -AgNbO ₃ lead-free piezoceramics and large-strain multilayer actuators	Gang Niu In-operando detection of interface details in filament-type resistive random access memory (RRAM) using hard X-ray photoelectron spectroscopy (HAXPES)	Juanxiu Xiao The enhanced room temperature ferroelectric property in chemical composition mediated hybrid halide perovskites films	David A. Fernandez Benavides Establishing and formalizing the ferroelectric/piezoelectric properties of a lead-free based BNT-BKT-BT ceramic by means of mixtures design
15:00 – 15:30	Coffee Break				

	Session 6a – ECAPD-ISAF Electrocalorics and pyroelectrics	Session 6b – ISAF Thin films II	Session 6c – ISAF Lead-free materials	Session 6d – ISAF Switching	Session 6e – ISAF Other properties II
	Chair: John Daniels Room: A01	Chair: Ron Polcawich Room: A02	Chair: Derek Sinclair Room: A03	Chair: Andrew Bell Room: A04	Chair: Jon Ihlefeld Room: A5
15:30 – 15:45	Gunnar Suchanek Upper bounds in electrocaloric cooling INVITED PRESENTATION	Matthew Dawber Evolution of electrical properties of ferroelectric superlattices during growth INVITED PRESENTATION	Eberhard Hennig Piezoelectric Ceramics goes Lead-free? INVITED PRESENTATION	Yachin Ivry How do ferroelectric domains switch? INVITED PRESENTATION	Linxing Zhang The control of switchable photovoltaic response in BiFeO ₃ based ferroelectric thin films
15:45 – 16:00					Sean Smith Pyroelectricity in Hf _{1-x} Zr _x O ₂ thin films
16:00 – 16:15	Whitney L. Schmidt Thermoelectric Properties of n-type Reduced Rare-Earth Doped SrTiO ₃	Andreas Schatz Application of DoE Methods to Establish a Model for the Pulsed Laser Deposition of PZT Thin-Films	Taofeeq Ibn-Mohammed Integrated Hybrid Life Cycle Assessment and Supply Chain Environmental Profile Evaluations of Lead-based PZT versus Lead-free KNN Piezoelectric functional materials	Jiri Hlinka Switching of domains in ferroaxial crystals	Brian Foley Temperature Dependence of Voltage-Tunable Thermal Conductivity in Bi-layer PZT Thin Film Heterostructures
16:15 – 16:30	Petr Yudin Heat exchange in pyroelectric energy harvesting devices	Urška Gabor Influence of Pb-Enriched Targets on PLD Growth of Pb(Mg _{1/3} Nb _{2/3})O ₃ -PbTiO ₃ Thin Films	Amir Khesro Lead-Free multi-layered Actuators for High Temperature Applications	Indre Urbanaviciute True ferroelectric switching in thin films of trialkylbenzene-1,3,5-tricarboxamide	Malte Vögler Temperature-dependent elastic properties of ferroelectric and relaxor lead-free (1-x)(Bi _{0.5} Na _{0.5})TiO ₃ -xBaTiO ₃ ceramics
16:30 – 16:45	Hiroshi Maiwa Electrocaloric Properties of K(Ta,Nb)O ₃ Crystals and BaTiO ₃ -based Ceramics	Rika Tamano Comparative Study of Ferroelectric (K,Na)NbO ₃ Thin Films Pulsed Laser Deposition on Platinum Substrates with Different Orientation	Hyun Ae Cha Piezoelectric properties of textured BNKT ceramics prepared by reactive-templated grain growth using Bi _{4.5} Na _{0.5} Ti ₄ O ₁₅ and Bi _{0.5} Na _{0.5} TiO ₃ templates	Natalia Andreeva Coherent in-plane and out-of-plane polarization switching in Pb(Zr _{0.96} Ti _{0.04})O ₃ single crystal revealed by piezoresponse force microscopy	In-Tae Seo Conduction behavior of z mol% Fe ₂ O ₃ doped 0.94N _{0.5} B ₇ T-6BT ceramics
16:45 – 17:00	Marko Vrabelj Energy Efficiency of Electrocaloric Cooling: Material and Cooling-System Considerations	Adrian Petraru VO ₂ growth on various perovskite and complex oxides single crystal substrates	Hajime Nagata Silver Diffusion Behavior into Bi-based perovskite-type Lead-free Ferroelectric Ceramics INVITED PRESENTATION	Tim Cornelissen Tuning the ferroelectric properties of trialkylbenzene-1,3,5-tricarboxamides (BTAs)	Hana Ursic A multicaloric 0.8Pb(Fe _{1/2} Nb _{1/2})O ₃ -0.2Pb(Mg _{1/2} W _{1/2})O ₃ as link between electrocaloric and magnetocaloric refrigeration
17:00 – 17:15	Florian Weyland Criticality: Boost of piezoelectric and electrocaloric properties	Ashley Mason Chemical solution deposition and characterization of (Bi _{0.5} Na _{0.5})TiO ₃ -(Bi _{0.5} K _{0.5})TiO ₃ -Bi(Zn _{0.5} Ti _{0.5})O ₃ thin films		Han Joon Kim Two-step polarization switching mediated by a nonpolar intermediate phase in Hf _{0.4} Zr _{0.6} O ₂ thin Films	Jan Sellmann Effect of doping in ferroelectric K _{0.5} Na _{0.5} NbO ₃ thin films on DyScO ₃ substrates grown by PLD
17:15 – 17:30	Sven Jachalke Doping effects on the pyroelectric coefficient of free standing GaN grown by HVPE	Noel Dawson Deposition of High Quality Ferroelectric Thin Film PVDF by Thermally Modulated Spin Coating		Uwe Schroeder Wake-up behavior comparison between PZT and HfO ₂ based ferroelectrics	Xiangyong Zhao Tetragonal High-Tc Mn:PiMNT Pyroelectric Single Crystals for High Detectivity Infrared Sensor Applications
17:30 – 18:30			Poster Session		
19:00 – 23:00			Conference Banquet		

Plenary Lecture – Beatriz Noheda "Domain engineering in ferroelectric thin films"						
Coffee Break						
Session 7a – ECAPD-ISAF Domain walls and piezoelectrics		Session 7b – ISAF Capacitors and dielectrics		Session 7c – ISAF Fundamentals, properties and processing of BaTiO ₃	Session 7d – ISAF Fundamentals: Structure, phase transitions and properties I	Session 7e – ISAF Other characterization
Chair: Clive Randall Room: A01		Chair: Klaus Reichmann Room: A02		Chair: Pam Thomas Room: A03	Chair: Andreja Bencan Room: A04	Chair: Hiroyuki Shimizu Room: A5
08:30 – 09:30						
09:30 – 10:00						
10:00 – 10:15	Igor Stolichnov Ultra-high density metallic-like channels from bent ferroelectric domain walls INVITED PRESENTATION	Cheol Seong Hwang Negative capacitance: theory, practice and limitations INVITED PRESENTATION	Kazumi Kato Evolution of Interface Structure in BaTiO ₃ Nanocube Assemblies for Enhanced Dielectric Properties INVITED PRESENTATION	Jon Ihlefeld Thermal Conduction in Ferroelectric Thin Films: Size, Composition, and Domain Effects INVITED PRESENTATION	Toshio Ogawa Elastic Constants in Pb(Mg _{1/3} Nb _{2/3})O ₃ -PbTiO ₃ Single Crystals and Ceramics Evaluated by Sound Velocities	Manuel Weiß Homogenization and Characterization of Piezoelectric Stack Actuators by Means of the Inverse Method
10:15 – 10:30						
10:30 – 10:45	Yoshiro Tajitsu Piezoelectric Poly-L-lactic Acid Fabric and its Application to Control of Humanoid Robot	Hironori Fujisawa Fabrication of (Hf,Zr)O ₂ capacitors using ZnO nanowires as a template	Andrew Bell The Temperature Dependence of Equivalent Dipole Parameters in BaTiO ₃	Stanislav Kamba Review of ferroelectric and magnetic soft modes in multiferroics	Neamul Hayet Khansur Contrasting strain mechanisms in lead-free piezoelectric ceramics	
10:45 – 11:00	Thottam Kalkur Solidly Mounted Bulk Acoustic Wave switchable Ladder Filter Design on GaN/Sapphire Substrate Using MOSD	Rémy Ul Aging behavior in Co doped Barium Titanate ceramics	Philip Foeller A resource efficient design strategy to optimise the temperature coefficient of capacitance of BaTiO ₃ -based ceramics.	Xiao-Qiang Liu Topological ferroelectricity in layered perovskite LaTaO ₄ : A first principles study	Gemma de la Flor Martin Resonance Raman scattering of perovskite-type relaxor ferroelectrics under nonambient conditions	
11:00 – 11:15	Geoff Brennecka Combinatorial studies of scandium-aluminum nitride thin films for piezoelectric applications.	Yoko Takada Evaluation of deuterium ion profile in (Pb,La)(Zr,Ti)O ₃ capacitors structures with conductive oxide top electrode by time of flight secondary ion mass spectrometry	Pavel Ctibor Porosity and dielectric behavior of barium titanate nanometric polycrystalline ceramics fired by spark plasma sintering	Svetlana Krylova Temperature Phase Transitions in the Perovskite-like Fluoride Crystals	Florian Pffor Influence of octahedral tilt disorder on the thermal depolarization of 0.964Na _{1/2} Bi _{1/2} TiO ₃ -0.036BaTiO ₃	
11:15 – 11:30	Thorsten Schmitz-Kempen Reliability testing and characterization of piezoelectric thin films for industrial applications	Lavinia-Petronela Curecheriu Exploiting porosity for design tunable materials	Jared Carter Degradation and Recovery of BaTiO ₃ Single Crystals Observed via Modulus Spectroscopy and Thermally Stimulated Depolarization Current	Arthur Riefer Electronic structure of LiNbO ₃ : Many-body interactions, spin-orbit coupling, and thermal effects	Hiroyuki Odagawa Quantitative thickness measurement in polarity-inverted piezoelectric layered thin film using scanning nonlinear dielectric microscopy	
11:30 – 11:45	Umesh Kumar Bhaskar Flexoelectric MEMS on silicon	Zichen He Electron-pinned defect-dipoles for SrTiO ₃ -based ceramics with high permittivity and low dielectric loss	Semën Gorfman Combined X-ray diffraction measurements of atomic displacements, lattice strain and macroscopic polarization in BaTiO ₃ -based ferroelectric.	Elena Buixaderas Polar intermediate states in antiferroelectric oxides	Agnes Eydám Thermal Excitation as a Mean for Nondestructive Evaluation of Embedded Piezoelectric Transducers	
11:45 – 12:00	Farkhad Akhmedzhanov Attenuation of High-frequency Acoustic Waves in Paratellurite Crystals	David Cann Transport and defect mechanisms in BaTiO ₃ -Bi(Me)O ₃ ceramics for high temperature and energy density capacitor applications	Ke Wang Innegligible Collateral Origin for High-Performance BaTiO ₃ Lead-Free Piezoceramics	Sina Hashemizadeh Broken symmetry in paraelectric phase and polar nano regions	Joe Evans High Voltage Ferroelectric Hysteresis Measurements at Cryogenic Temperatures	
12:00 – 12:15	Dennis Meier Optimization and reversible reconfiguration of functional domain walls in improper ferroelectrics	Yong Zhang Antiferroelectrics for energy storage application: perspectives for processing and characterization	Takafumi Okamoto Charge-based Deep Level Transient Spectroscopy Characterization of Acceptor-doped BaTiO ₃ Dielectric Ceramic for Capacitor and Its Insulation Degradation Behavior	Gaoyang Gou Ruddlesden–Popper Perovskite sulfides A ₃ B ₂ S ₇ : A new family of ferroelectric photovoltaic materials for the visible spectrum	Yuji Ohashi Evaluation of Ca ₃ TaGa ₃ Si ₂ O ₁₄ Single Crystal Grown along 159°Y-axis by the Line-Focus-Beam Ultrasonic Material Characterization System	
12:15 – 12:30	INVITED PRESENTATION	Aleksander Matavž Inkjet printing of thin metal-oxide structures from sol-gel-precursor inks	INVITED PRESENTATION	Fenglian Li Phase structure and electrical properties of (1-x)KNNS-xBKZH lead free piezo- ceramics with new phase boundary	Achour Soualmia Modeling dielectric polymers behavior in Time Domain	
12:30 – 13:30	Lunch					

	Session 8a – ECAPD-ISAF Sustainable Electroceramics	Session 8b – ISAF Composites, biomaterials	Session 8c – ISAF Energy storage	Session 8d – ISAF Fundamentals: Structure, phase transitions and properties II	Session 8e – ISAF Other properties II
13:30 – 13:45	Chair: Daniel Sando Room: A01 Ian M. Reaney Local structure in sustainable functional ceramics INVITED PRESENTATION	Chair: Tadej Rojac Room: A02 Jennifer Andrew Advances in Nanocomposite Design: A Route towards Multiferroic and Exchange Coupled Systems INVITED PRESENTATION	Chair: Ke Wang Room: A03 Takaaki Tsurumi Concept of Solid State Ionic Capacitor for Future MLCCs INVITED PRESENTATION	Chair: Elizabeth Dickey Room: A04 Hiroyuki Shimizu Antiferroelectric Stabilization in the NaNbO ₃ Solid Solutions PRESENTATION	Chair: Jurij Koruza Room: A5 Doru Lupascu Magnetoelectric coupling in complex microstructures
13:45 – 14:00					Chair: Ji Young Jo Piezoelectricity of oxide thin films controlled via in situ misfit strain
14:00 – 14:15	Chang-Hyo Hong Influence of A-site deficiencies on BNT-BKT System	Azatuhi Ayrikyan Tailoring the Electromechanical Properties of Lead-Free Ferroelectrics with the Ceramic/Ceramic Composite Approach	Yifei Wang Significantly Enhanced Breakdown Strength and Energy Storage Density in Sandwich-structured BaTiO ₃ /Poly (vinylidene fluoride) Nanocomposites	Qiang Li Field-induced phase transition and Pyroelectric energy conversion of PLZST antiferroelectric Single Crystal	Tian-Lu Men Local Piezoelectric Properties and Relaxation Behavior of (K,Na)NbO ₃ -based Piezoceramics with Abnormal Grain Growth
14:15 – 14:30	Sebastian Steiner Defect chemistry and conductivity mechanisms in B-site doped and A-site non-stoichiometric Na _{0.5} Bi _{0.5} TiO ₃	Panpan Chang Low Loss Magneto-dielectric Composite Ceramics Ba ₃ Co ₂ Fe ₂₄ O ₄₁ /SrTiO ₃ for High Frequency Applications	Klaus Reichmann Size Matters: Charge Storage Devices for Inverters Based on Antiferroelectric Ceramics INVITED PRESENTATION	Leontin Padurariu Modeling of the nonlinear dielectric properties of paraelectric-dielectric composites by a 3D Finite Element Method based on Landau- Devonshire theory	Hamed Sharifi Theoretical understanding of Film formation in solution-processed ferroelectric polymers
14:30 – 14:45	Andrei Sotnikov Piezoelectric single crystals of the langasite family: properties and possible applications	Premysl Vanek Biocompatible ferroelectric coatings for bone implants		Jianguo Zhu Understanding of origin of high piezoelectric properties of KNN-based ceramics	Fei Fang Enhanced Polarization and Fracture Strength in P(VDF-TrFE) Copolymer Films by a Tailored Electric Cyclic Process
14:45 – 15:00	Andrew Bell Should I Specify a Lead-Free Material in My Next Piezoelectric Product ?	Rebecca Boston Biotemplated control of barium titanate	Barbara Malič Microstructural Details Influencing the Electrocaloric Response of Relaxor Ferroelectric Bulk Ceramics	Denis Alikin Local Study of Anti-polar-to-polar Electric field Induced Phase Transition in Lead-Free Bismuth Ferrite Ceramics	Thibault Dufay Realization of flexible piezoelectric thin film on polymer substrate
15:00 – 21:00	Dinner Cruise				

08:30 – 09:30	Plenary Lecture – Jing-Feng Li "Niobate-based lead-free piezoelectric ceramics"				
09:30 – 10:00	Coffee Break				
	Session 9a – ISAF Polycrystalline materials	Session 9b – ISAF Single crystals	Session 9c – ISAF Domain walls: structure, motion, contribution to properties	Session 9d – ISAF Relaxors	Session 9e – ISAF X-ray scattering
	Chair: Dennis Meier Room: A01	Chair: Karsten Albe Room: A02	Chair: Yachin Ivry Room: A03	Chair: Takafumi Okamoto Room: A04	Chair: Satoshi Wada Room: A5
10:00 – 10:15	Julia Glaum Polarization reversal mechanism in $(\text{Bi}_{1/2}\text{Na}_{1/2})\text{TiO}_3$ - BaTiO_3 -based relaxor ceramics	Linghang Wang Growth and observation of multiscale domain morphology of PIN-PMN-PT Ferroelectric crystals	Ryotaro Inoue Origin of photovoltaic effect in ferroelectric domain walls - electrostatic potential step vs. local photovoltaic component	Brahim Dkhil Make stress your ally INVITED PRESENTATION	Rajeev Ranjan In-situ Electric Field Dependent High Energy X-Ray Diffraction Close to the Morphotropic Phase Boundary of PbTiO_3 - BiScO_3
10:15 – 10:30	INVITED PRESENTATION	Jun Luo Bridgman Growth of <001>-Oriented 4in Diameter PIN-PMN-PT Piezoelectric Crystals	INVITED PRESENTATION		
10:30 – 10:45	Guttorm Syvertsen-Wiig Synthesis and sintering of KNN materials	Hideo Kimura Aurivillius phase $\text{Bi}_4\text{Ti}_3\text{O}_{12-n}\text{BiFeO}_3$ (n = 1-5) single crystals from melt	Gustav Lindgren Enhanced Domain Wall Conductivity and Memristivity in KTiOPO_4	Satoshi Wada Piezoelectric Enhancement of New Bismuth-based Piezoelectric Materials with Pseudo-cubic Symmetry with and Its Origin Based on Nano/macro Complex-domain Configurations	David Hall Evaluation of shear-mode piezoelectric response in PZT ceramics by high energy synchrotron XRD
10:45 – 11:00	Ajeet Kumar Enhanced piezo response in mechanical activated and microwave sintered PLZT 8/60/40 ceramics	Zibo Jiang Over-poling Study of PMN-PT and PIN-PMN-PT Crystal Grown by Vertical Gradient Freeze Method	Evgeniya Khomyakova Self-poling effect in bismuth ferrite thick films	Shuai Wang A phase-field model on relaxor ferroelectrics based on random field theory	Andreja Bencan Structural Investigation of Strontium-Doped Potassium Sodium Niobate Lead-Free Piezoelectric Ceramics
11:00 – 11:15	Maohua Zhang Enhanced Piezoelectric and Ferroelectric Properties of (K, Na) NbO_3 -based Lead-Free Perovskite with Rhombohedral-Tetragonal Coexisting Phase	Zuo-Guang Ye Structure and Properties of KNN-Based Piezo-/Ferroelectric Single Crystals	Andrius Zukauskas Bulk Self-assembled Ferroelectric Domain Structures in RKTP	Barbara Kaeswurm Mechanically induced ferroelectric long range order in relaxor ferroelectrics	Erik Mehner Field-stabilized piezoelectricity in SrTiO_3 revealed by stroboscopic X-ray diffraction
11:15 – 11:30	Ekaterina Politova Processing and characterization of lead-free ferroelectric ceramics on the base of $(\text{Na}_{0.5}\text{Bi}_{0.5})\text{TiO}_3$	Hairui Liu Orientation-dependent electromechanical properties of Mn-doped (Li,Na,K)(Nb,Ta) O_3 single crystals	Jianguo Chen Impact of Internal Electric Field on the Strain Memory Effect of Poled BiScO_3 - PbTiO_3 Ceramics	Manabu Hagiwara Spontaneous Relaxor to Normal Ferroelectric Phase Transition in $(\text{Bi}_{1/2}\text{K}_{1/2})\text{TiO}_3$ Lead-free Piezoelectric Ceramics	Tedi-Marie Usher Electric-field-induced structural changes at the local scale in Bi- and Ba-based ferroelectrics
11:30 – 11:45	Clive Randall Rethinking Ceramic Processing as a Means to Develop Sustainable Manufacturing Practices for Ferroelectric and Dielectric Materials INVITED PRESENTATION	Zeng Luo Growth and Characterization of High-Curie-temperature Ferroelectric Single Crystals of (1-x) BiScO_3 -0.05 $\text{Pb}(\text{Cd}_{1/3}\text{Nb}_{2/3})\text{O}_3$ -x PbTiO_3 Ternary Solid Solution	Charlotte Liljestrand Coercive Field Engineering in Buld Rb-doped KTiOPO_4	Manuel Hinterstein Strain mechanisms in relaxor ferroelectrics	Giovanni Esteves Field-Induced Phase Changes in Multi-Layer Piezoelectric Actuators during Electrical and Mechanical Load
11:45 – 12:00	INVITED PRESENTATION	Yuui Yokota Effects of Al doping on crystal growth, crystal structure and piezoelectric properties for $\text{Ca}_3\text{TaGa}_3\text{Si}_2\text{O}_{14}$ single crystals	Di Chen Creep in $0.91\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3$ - 0.06BaTiO_3 - $0.03\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3$ lead-free piezoceramics under a constant electric field loading	Elena Smirnova Acoustic Characterization of PMN single crystal at cryogenic temperatures	Uwe Schroeder Structural Root Causes of Ferroelectricity in Doped Hafnium Oxide
12:00 – 12:15	Yu-Cheng You Improve the Quality Factor of CaNb_2O_6 Microwave Ceramics by Substituting Ca^{2+} with Sr^{2+}	Pavel Mokry Digital holographic tomography of ferroelectric domain patterns in barium titanate single crystals	Dmitry Chezganov Periodic Domain Patterning by Electron Beam in Lithium Niobate	Charlotte Cochard High-temperature tetragonal relaxor phase in $\text{Pb}(\text{Yb}_{1/2}\text{Nb}_{1/2})\text{O}_3$ - PbTiO_3	
12:15 – 12:30	Harihara V. Balasubramanian Interesting property studies of $\text{SrBi}_2\text{Ta}_2\text{O}_9$ and $\text{Sr}(\text{Bi}_{0.95}\text{Sm}_{0.05})_2\text{Ta}_2\text{O}_9$ ferroelectric ceramics fabricated by molten salt flux method		Qian Gou New (1-x) $\text{K}_{0.5}\text{Na}_{0.5}\text{NbO}_3$ -x(0.15 $\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3$ -0.85 $\text{Bi}_{0.5}\text{Na}_{0.5}\text{ZrO}_3$) ternary lead-free ceramics: microstructure and electrical properties	Zbigniew Trybuła From relaxor to ferroelectric behavior in $\text{K}_{1-x}\text{Li}_x\text{TaO}_3$	
12:30 – 13:30	Plenary Lecture – Susan Trolier-McKinstry "Piezoelectric Films for MEMS Applications"				