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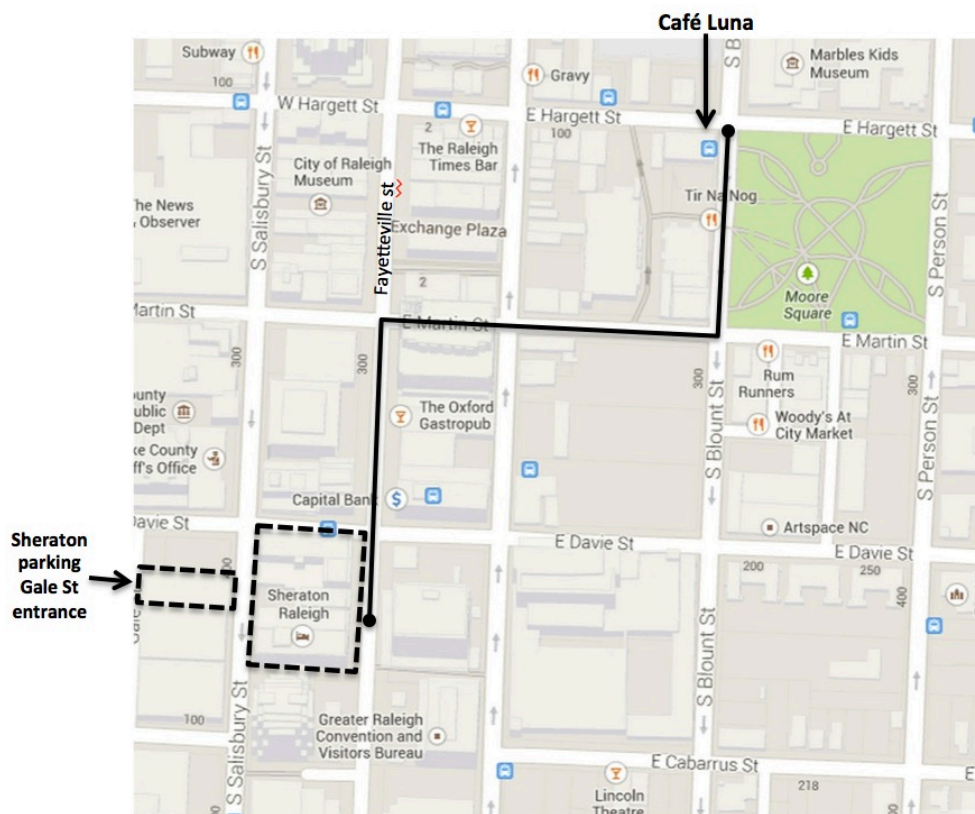
16TH US-JAPAN SEMINAR ON DIELECTRIC AND PIEZOELECTRIC CERAMICS

SCHEDULE SUMMARY

	Morning	Afternoon	Evening
Sunday Nov 3		4:00 – 6:00 Registration Oak Forest Lobby	6:30 – 9:30 Welcome reception Jimmy V's Restaurant
Monday Nov 4	7:00 – 8:50 Breakfast: Jimmy V's 8:00 – 9:00 registration 8:50 - 9:00 Opening remarks 9:00 - 10:00AM Session A1 – Plenary Thin Films 10:00 - 10:15: Break 10:15 - 11:15 Session A2 – Plenary Thin Films 11:20 - 1:00 Poster summary & viewing	1:00 - 2:00 Lunch 2:00 - 3:00 Session B – plenary Dielectrics 3:00 - 3:15: Break 3:15 - 3:30 Special Seminar 3:30 - 5:30 Poster Summary & Viewing	6:30 Depart for Café Luna Walk from Hotel 7:00 – 10:00 Dinner Café Luna
Tuesday Nov 5	7:00 – 9:00 Breakfast: Jimmy V's 9:00 – 10:30 Session C – Plenary Characterization 10:30 - 10:45: Break 10:45 – 12:00 Poster summary & viewing	12:00 - 1:00 Lunch 1:00 - 2:00 Session D – plenary Piezoelectrics 2:00 – 4:00 Poster summary & viewing	4:50 Meet at Sheraton Lobby and board Busses to Angus Barn Salisbury Street entrance 6:00: Cocktails and Music 7:30: US-Japan Banquet 10:00: board busses and return to Sheraton
Wednesday Nov 6	7:00 – 9:00 Breakfast: Jimmy V's 9:00 – 10:00 Session E1 – Plenary Basic Sciences 10:00 – 10:15: Break 10:15 – 11:15 Session E2 – Plenary Basic Sciences 11:15 – 1:00 Poster summary & viewing	1:00 End of US-Japan Seminar 1:30 Bus departs for NCSU campus 2:00 Tutorial Workshop at NCSU on <i>in situ</i> characterization	

IMPORTANT INFORMATION AND LOCATIONS

- If you are driving to Raleigh, parking at the Sheraton is free. Parking passes will be available at registration. You will only need them when exiting the parking garage. You do not have to put the pass in your vehicle.
- The address of the parking garage is 415 Gale Street, Raleigh, NC. Be careful, there two adjacent parking decks, use the one marked with the Sheraton sign. The parking deck is across Salisbury Street from the Sheraton entrance. The entrance to that deck is on Gale Street which is one block west of Salisbury.
- Breakfast is included with your registration every morning at Jimmy V's restaurant, which is connected directly to the Sheraton Lobby.
- Tickets for breakfast are included in your registration packet.
- All lunches will be served in the Sheraton in the Governors Rooms I & II
- On Monday evening, we will be having dinner at Café Luna. We will be walking to the restaurant. It is 0.6 km from the hotel. See the following map.



- On Tuesday evening we will be taking a charter bus to the Angus Barn Restaurant. The bus will depart promptly at 5:00 pm. Please congregate at the Sheraton Lobby, Salisbury street entrance, at 4:50 to board the buses. The bus ride is approximately 25 minutes.
- Provided the weather is dry, the Conference banquet will be a casual indoor/outdoor event so please dress accordingly. Evening temperatures are expected to be in the mid 50s.

Technical Program

Sunday Evening, November 3rd
Welcome Reception 5:30-8:30PM
Location: Jimmy V's, adjacent to Sheraton Lobby

Monday Morning, November 4th ***Session A: Thin Films***

- 8:50-9:00AM Introductions and Welcome – Jon-Paul Maria
- 9:00-10:00AM Plenary Contributions – Thin Films
- A1 Kazumi Kato, National Institute of Advanced Industrial Science and Technology
- “THE STATE OF THE ART: BARIUM TITANATE NANOCUBE AND ASSEMBLIES”
- A2 Jon Ihlefeld, Sandia National Laboratories
- “SOLUTION CHEMISTRY, SUBSTRATE, AND PROCESSING EFFECTS ON CHEMICAL HOMOGENEITY OF FERROELECTRIC THIN FILMS”
- 10:00-10:15 Break
- 10:15-11:15AM Plenary Contributions – Thin Films (continued)
- A3 Takashi Kondo, Murata Manufacturing Co., Ltd.
- “PHOTONIC CRYSTALS AND THEIR SENSING APPLICATIONS IN THE THz REGION”
- A4 Jeremy Levy, University of Pittsburgh
- “NANOSCALE SCIENCE AND TECHNOLOGY AT THE $\text{LaAlO}_3/\text{SrTiO}_3$ INTERFACE”
- 11:20-1:00 Poster summaries and viewing
- A5 Adarsh Rajashekhar, Penn State University
- “IN *SITU* LASER ANNEALING OF PZT THIN FILMS DURING GROWTH”

- A6 Hiroshi Uchida, Sophia University
“ONE-AXIS CRYSTAL ORIENTATION OF LEAD ZIRCONATE TITANATE FILMS ON NANOSHEET BUFFER LAYER ON METAL SUBSTRATES”
- A7 Michael Biegalski, Oak Ridge National Laboratory
“IMPACT OF SYMMETRY ON THE FERROELECTRIC PROPERTIES CaTiO₃ THIN FILMS”
- A8 Takeshi Morita, The University of Tokyo
“ULTRASONIC ASSISTED HYDROTHERMAL METHOD FOR THICK PIEZOELECTRIC FILMS”
- A9 Hiroshi Funakubo, Tokyo Institute of Technology, Nagoya University
“DOMAIN STRUCTURE OF (100)/(010)-ORIENTED EPITAXIAL PbTiO₃-BASED THIN FILMS WITH IN-PLANE POLARIZATION”
- A10 Joseph T. Evans, Radiant Technologies, Inc.
“AUTONOMOUS LOGIC”
- A11 David Harris, North Carolina State University
“DIELECTRIC PROPERTIES IN BaTiO₃ FILMS BY LIQUID PHASE ASSISTED GROWTH”
- A12 Austin Fox, Oregon State University
“CONTROL OF CRYSTALLOGRAPHIC TEXTURE AND SURFACE MORPHOLOGY OF Pt/TiO₂ TEMPLATES FOR ENHANCED PZT THIN FILM PERFORMANCE”
- A13 Bruce Wessels, Northwestern University
“BaTiO₃ PHOTONIC CRYSTAL ELECTRO-OPTIC DEVICES FOR 50 GHz APPLICATIONS”
- A14 Matthew Dawber, Stony Brook University
“ENGINEERING NEW PROPERTIES IN PbTiO₃ BASED SUPERLATTICES”

A15 Roman Engel-Herbert, Penn State University
“HYBRID MOLECULAR BEAM EPITAXY OF TRANSITION METAL
OXIDE THIN FILMS WITH PEROVSKITE STRUCTURE”

A16 Chris Shelton, North Carolina State University
“SMOOTH CUBIC COMMENSURATE OXIDES ON GaN”

1:00-2:00 Lunch: Governors Rooms I & II

Monday Afternoon, November 4th
Session B: Dielectrics

2:00-3:00PM Plenary Contributions –Dielectrics

B1 Christian Hoffmann, TDK Corporation
“CERALINK – A NEW TECHNOLOGY FOR POWER CAPACITORS

B2 David Cann, Oregon State University
“BaTiO₃-Bi(Zn_{1/2}Ti_{1/2})O₃ RELAXORS FOR ADVANCED CAPACITOR
APPLICATIONS”

3:00-3:15 Break

3:15-3:30 Special Seminar by Dr. Sakabe, Murata Manufacturing Corporation,
Ltd.
“DEVELOPMENT AND FUTURE CHALLENGES OF DIELECTRIC
CERAMICS”

3:30-5:30 Poster Summaries and Viewing - Dielectrics

B3 Zoubeida Ounaies, Penn State University
“FUNDAMENTAL INVESTIGATIONS OF ELASTOMER-BASED
ACTIVE MATERIALS FOR MULTI-FIELD RESPONSIVE ORIGAMI
STRUCTURES”

B4 Akira Ando, Murata Manufacturing Company, Ltd.
“PEROVSKITE OXIDES DOPED WITH Sn²⁺ AND THEIR
FERROELECTRIC CHARACTERISTICS”

- B5 Hayato Katsu, Murata Manufacturing Company, Ltd.
"IMPEDANCE ANALYSIS AND OXYGEN DIFFUSION OF Ba-rich BaTiO₃ THERMISTOR CERAMICS"
- B6 Rintaro Aoyagi, Nagoya Institute of Technology
"HIGH-TEMPERATURE ELECTRICAL PROPERTIES IN Fe SUBSTITUTED BaTiO₃ SEMICONDUCTING CERAMICS"
- B7 Hiroshi Takagi, Murata Manufacturing Company, Ltd.
"PTC MECHANISM OF Ba-rich BaTiO₃ THERMISTOR"
- B8 Hiroyuki Shimizu, Penn State University
"DEMONSTRATION OF THE PROCESSING AND PROPERTIES OF AN ALKALI-NIOBATE, NaNbO₃ DIELECTRIC, IN LOW PARTIAL PRESSURE OF OXYGEN"
- B9 Takaaki Tsurumi, Tokyo Institute of Technology
"DESIGN OF HIGH TEMPERATURE CAPACITORS --- DIELECTRIC PERMITTIVITY AND BREAK-DOWN STRENGTH"
- B10 Ming-Jen Pan, US Naval Research Laboratory
"NOVEL PIEZOELECTRIC COMPOSITE THROUGH FREEZE CASTING FOR HIGH FREQUENCY TRANSDUCER APPLICATIONS"
- B11 Takashi Teranishi, Okayama University
"POLARIZATION CONTRIBUTION TO THE TUNABILITY ON (Ba,Sr)TiO₃-BASED FERROELECTRICS"
- B12 Mike Lanagan, Penn State University
"DIELECTRIC BREAKDOWN: THEORY, CHARACTERIZATION AND ITS RELATIONSHIP TO ENERGY AND POWER DENSITY"
- B13 Satoshi Wada, University of Yamanashi
"SOLVOTHERMAL SYNTHESIS OF BaTiO₃/BiFeO₃ and KNbO₃/BaTiO₃ NANO-STRUCTURED CERAMICS WITH HIGH-DENSITY OF HETEROEPITAXIAL INTERFACES AND THEIR FERROELECTRIC PROPERTIES"

- B14 Masato Iwasaki, NGK Spark Plug Co., Ltd.
“MANUFACTURING AND RELIABILITY STUDY OF THE LOW INDUCTANCE, VIA-ARRAYED, DECOUPLING CAPACITOR (LIVAC®)”
- B15 Shintaro Ueno, University of Yamanashi
“FABRICATION OF TITANIUM METAL/BARIUM TITANATE COMPOSITE CAPACITOR VIA HYDROTHERMAL METHOD AND THEIR DIELECTRIC PROPERTIES”
- B16 Clive Randall, Penn State University
“MODELING RELIABILITY AND HIGH POWER ENERGY DENSITY FOR NEW CAPACITOR BASED APPLICATIONS”
- B17 Takafumi Okamoto, Penn State University, Murata Mfg. Co., Ltd.
“CHARGE-BASED DEEP LEVEL TRANSIENT SPECTROSCOPY CHARACTERIZATION OF BaTiO₃ DIELECTRIC CERAMIC FOR CAPACITOR”
- B18 Makoto Matsuda, Murata Manufacturing Co., Ltd.
“A STUDY OF RELIABILITY OF HIGH CAPACITANCE MLCC WITH THINNER DIELECTRIC LAYER”
- B19 Geoff L. Brennecka, Sandia National Laboratories
“DIRECT TIME-DOMAIN MEASUREMENT OF RELAXOR RESPONSE”
- B20 Takuya Hoshina, Tokyo Institute of Technology
“GRAIN SIZE EFFECT AND POLARIZATION MECHANISM ON DIELECTRIC PROPERTIES OF (Ba,Ca)TiO₃ CERAMICS”
- B21 Dennis P. Shay, Penn State University
“OPTICAL CHARACTERIZATION, BAND GAP BEHAVIOR, AND RELATION TO CONDUCTIVITY IN THE Ca(Ti_xZr_{1-x})O₃ SOLID SOLUTION”
- B22 Wataru Sakamoto, Nagoya University
“FABRICATION OF REDUCTIN-RESISTANT LEAD-FREE PIEZOELECTRIC (Ba,Ca)TiO₃ CERAMICS AND THEIR PROPERTIES”

B23 Yuki Ichikawa, The University of Tokyo

“DEFECT CONTROL AND CHARACTERIZATION FOR
BaTiO₃ FERROELECTRIC CERAMICS”

7:00 Dinner Café Luna (*walk from hotel*)

Tuesday Morning, November 5th
Session C: Characterization

9:00-10:30AM Plenary Contributions- Characterization

C1 K. Tsuda, Tohoku University

“STUDY OF NANOSCALE STRUCTURES IN FERROELECTRIC
BARIUM TITANATE USING CONVERGENT-BEAM ELECTRON
DIFFRACTION”

C2 Xiaoqing Pan, University of Michigan

“PROBING THE STRUCTURE AND DYNAMICS OF FERROELECTRIC
DOMAIN WALLS WITH ATOMIC RESOLUTION IN REAL TIME”

C3 Bryan D. Huey, University of Connecticut

“NANOSCALE SPATIAL AND TEMPORAL SWITCHING DYNAMICS
IN FERROELECTRICS IMPLEMENTING HIGH SPEED SPM”

10:30-10:45 Break

10:45-12:00 Poster summaries and viewing – Characterization

C4 Patrick Hopkins, University of Virginia

“PHONON THERMAL TRANSPORT ACROSS BOUNDARIES OF
STRONTIUM TITANATE NANOSYSTEMS: KAPITZA CONDUCTANCE
AT INTERFACES AND COHERENT TRANSPORT IN
SUPERLATTICES”

C5 Brian Gorman, Colorado School of Mines

“ATOMIC SCALE ANALYSIS OF PZT WITH ATOM PROBE
TOMOGRAPHY”

- C6 Seth S. Berbano, Penn State University
“BULK IONIC CONDUCTIVITY OF GLASS AND GLASS-CERAMIC LITHIUM THIOPHOSPHATE SOLID ELECTROLYTES FOR SUPERCAPACITORS”
- C7 Abhijit Pramanick, City University of Hong Kong
“ORIGINS OF LARGE ENHANCEMENT IN ELECTROMECHANICAL COUPLING FOR NONPOLAR DIRECTIONS IN FERROELECTRIC BaTiO₃”
- C8 James LeBeau, North Carolina State University
“ATOMIC STRUCTURE AND CHEMISTRY OF DEFECTS IN V-RICH SrVO₃ THIN FILMS”
- C9 Sergei Kalinin, Oak Ridge National Laboratory
“INTERPLAY OF POLARIZATION DYNAMIC AND SURFACE ELECTROCHEMISTRY IN FERROELECTRICS: FROM IONIC TRANSPORT TO CHAOTIC DYNAMICS AND FRACTAL GROWTH”
- C10 Ali Moballeggh, North Carolina State University
“POINT DEFECT ELECTROMIGRATION IN TiO₂”
- C11 Chris M. Fancher, North Carolina State University
“TEXTURE PROPERTY RELATIONSHIP IN LEAD-FREE Bi_{1/2}Na_{1/2}TiO₃-0.07BaTiO₃-0.02K_{0.5}Na_{0.5}NbO₃”
- C12 Matthew Burch, North Carolina State University
“INTERFACE REACTIONS BETWEEN BaTiO₃ AND Al₂O₃”
- C13 Linghan Ye, University of Connecticut
“DOMAIN AND DOMAIN BOUNDARY CONFIGURATIONS IN PIEZOELECTRICS AND MULTIFERROICS”

12:00-1:00 Lunch Governors Rooms I & II

Tuesday Afternoon, November 5th
Session D: Piezoelectrics

1:00-2:00PM Plenary Contributions – Piezoelectrics

D1 Y. Doshida, Taiyo Yuden Co., Ltd.

“HIGH-POWER PROPERTIES OF (Bi,Na,Ba)TiO₃ AND (Sr,Ca)₂NaNb₅O₁₅”

D2 Richard Meyer, Penn State University

"TRANSDUCTION OPPORTUNITIES USING RELAXOR-BASED SINGLE CRYSTALS"

2:00-4:00 Poster Summaries and Viewing - Piezoelectrics

D3 Troy Ansell, Oregon State University

“HIGH TEMPERATURE PIEZOCERAMICS”

D4 Xiaoning Jiang, North Carolina State University

“ENHANCED PIEZOELECTRIC PROPERTIES OF PMN-PT SINGLE CRYSTALS WITH NANO-PATTERNED COMPOSITE ELECTRODE”

D5 Eric A. Patterson, TU Darmstadt

“INCIPIENT PIEZOELECTRIC TRANSITIONS IN (Bi_{1/2}Na_{1/2})TiO₃-BASED LEAD-FREE CERAMICS”

D6 Tomoaki Karaki, Toyama Prefectural University

“PREPARATION OF PLATE-LIKE POTASSIUM SODIUM NIOBATE TEMPLATE PARTICLES BY HYDROTHERMAL METHOD”

D7 Hajime Nagata, Tokyo University of Science

“MECHANICAL STRENGTH OF SOME LEAD-FREE PIEZOELECTRIC CERAMICS”

D8 Shintaro Yasui, Tokyo Institute of Technology

“ENHANCED PIEZORESPONSE IN (Bi,Sm)FeO₃ FILMS AT A MORPHOTROPIC PHASE BOUNDARY “

D8.5 Ahmad Safari, Rutgers University

ELECTROMECHANICAL PROPERTIES OF HARD LEAD-FREE Bi_{0.5}Na_{0.5}TiO₃-BASED CERAMICS

- D9 Angus Kingon, Brown University
 "PIEZOELECTRIC THIN FILMS ON FLEXIBLE SUBSTRATES WITH ENHANCED FUNCTIONAL PROPERTIES"
- D10 Takeshi Yoshimura, Osaka Prefecture University
 "DEVELOPMENT OF PIEZOELECTRIC MEMS VIBRATIONAL ENERGY HARVESTERS USING BiFeO₃ FILMS"
- D11 Yi Wang, University of Maryland
 "ALL-THIN-FILM PZT/FeGa MULTIFERROIC CANTILEVERS AND THEIR APPLICATIONS IN SWITCHING DEVICES AND PARAMETRIC AMPLIFICATION"
- D12 Aaron Welsh, Penn State University
 "DIRECT PRINTING OF PIEZOELECTRICS ONTO FREE-STANDING STRUCTURES FOR MEMS APPLICATIONS"
- D13 Seung-Hyun Kim, Brown University
 "LEAD-FREE PIEZOELECTRIC THIN FILM-BASED ENERGY HARVESTERS FOR SELF-POWERED IMPLANTABLE MEDICAL DEVICES"
- D14 Susan Trolier-McKinstry, Penn State University
 "PIEZOELECTRIC FILMS FOR NEXT GENERATION LOGIC ELEMENTS"
- D15 Brady J. Gibbons, Oregon State University
 "BI-BASED PIEZOELECTRIC THIN FILMS VIA CHEMICAL SOLUTION DEPOSITION"
- D16 Glenn J. Martyna, Physical Sciences, IBM
 "THE PIEZOELECTRONIC TRANSISTOR: A HIGH SPEED, LOW POWER POST-CMOS LOGIC SWITCH"
- D17 Shujun Zhang, Penn State University
 "RECENT DEVELOPMENTS ON HIGH PERFORMANCE PIEZOELECTRIC CRYSTALS"

4:50 Meet at Lobby for Transportation to Angus Barn
 6:00 Shoen Chemical Conference Banquet
 10:00 Bus departs Angus Barn and returns to hotel

Wednesday Morning, November 6th
Session E: Basic Sciences

9:00-10:00AM Plenary Contributions — Basic Sciences

- E1 Hiroki Moriwake, Japan Fine Ceramics Center
“MLCC MATERIALS RESEARCH USING FIRST-PRINCIPLES CALCULATIONS”
- E2 Karin Rabe, Rutgers University
“NEW FERROELECTRICS AND ANTIFERROELECTRICS BY DESIGN”

10:00-10:15 Break

10:15-11:15AM Plenary Contributions — Basic Sciences (continued)

- E3 Shigeo Mori, Osaka Prefecture University
“FERROELECTRIC PROPERTIES AND RELATED NANOSTRUCRTURES IN FERROELECTRIC OXIDES”
- E4 Jacob Jones, North Carolina State University
“EXTRINSIC EFFECTS IN PIEZOELECTRIC CERAMICS: INSIGHTS FROM *IN SITU* DIFFRACTION DURING APPLICATION OF ELECTRIC FIELDS”

11:15-1:00 Poster Summaries and Viewing — Basic Sciences

- E5 Seol Ryung Kwon, North Carolina State University
“CHARACTERIZATION OF FLEXOELECTRIC BARIUM STRONTIUM TITANATE THIN FILM”
- E6 Peter K. Davies, University of Pennsylvania
“EVIDENCE FOR COLLECTIVE POLAR DISPLACEMENTS IN NaNd(MgW)O₆ NANOCHECKERBOARD PEROVSKITES”
- E7 Brian M. Foley
“PHONON SCATTERING IN NANOSTRUCTURED FERROELECTRIC OXIDES”

- E8 Yoshiki Yachi, Osaka Prefecture University
“ENHANCEMENT OF PYROELECTRIC PROPERTIES OF P(VDF/TrFE) THIN FILMS ON LARGE THERMAL EXPANSION SUBSTRATES”
- E9 Jonathan Bock, Penn State University
“POLARIZATION-INDUCED SUPPRESSION OF A METAL-INSULATOR TRANSITION IN A HEAVILY REDUCED RELAXOR FERROELECTRIC: $\text{Sr}_{0.61}\text{Ba}_{0.39}\text{Nb}_2\text{O}_{6-\delta}$ ”
- E10 Hiroshi Maiwa, Shonan Institute of Technology
“PYROELECTRIC PROPERTIES AND ELECTROCALORIC EFFECTS OF PLZT AND BaTiO_3 -BASED CERAMICS”
- E11 Masatoshi Adachi, Toyama Prefectural University
“VERTICAL MORPHOTROPIC PHASE BOUNDARY (MPB) IN BaZrO_3 - $(\text{K},\text{Na},\text{Li})\text{NbO}_3$ - $(\text{Bi},\text{Na})\text{TiO}_3$ TERNARY SOLID SOLUTION”
- E12 Harlan J. Brown-Shaklee, Sandia National Laboratories
“TRANSPORT PROPERTIES OF SrTiO_3 THERMOELECTRIC OXIDES UNDER CONTROLLED $p\text{O}_2$ ”
- E13 Nazanin Bassiri-Gharb, Georgia Institute of Technology
“EFFECTS OF HIGH ENERGY X RAY AND PROTON IRRADIATION ON LEAD ZIRCONATE TITANATE THIN FILMS’ DIELECTRIC AND PIEZOELECTRIC RESPONSE”
- E14 Ryota Imura, The University of Tokyo
“POLARIZATION PROPERTIES AND CRYSTAL STRUCTURES OF FERROELECTRIC $(\text{Ba},\text{Ca})\text{TiO}_3$ SINGLE CRYSTALS”
- E15 Sergei Kalinin, Oak Ridge National Laboratory
“PROBING COUPLED METAL-INSULATOR AND FERROIC TRANSITIONS FROM THE ATOMIC TO MESOSCOPIC SCALES: IN-SITU PLD-STM STUDY”
- E16 Russell Maier, Penn State University
“ANALYSIS OF DEFECT ASSOCIATES IN FERROELECTRIC AND PARAELECTRIC PHASES OF PEROVSKITE SINGLE CRYSTALS USING IN-SITU EPR TECHNIQUES”

E17 Igor Levin, NIST

“LOCAL-STRUCTURE ORIGINS OF PROPERTIES IN PEROVSKITE FERROELECTRICS”

E18 Douglas Irving , North Carolina State University

"CARBON IN BULK ALN: OPTO-ELECTRONIC PROPERTIES AND DEFECT COMPENSATION"

1:00 End of Seminar

2:00 Post-meeting Tutorial Workshop on *In-situ* Materials Characterization at NCSU