

## **2023**

### **Best Posters:**

First place - Jacob Strimaitis, Norfolk State University; “Novel Integration of Graphene-based Ceramics for Enhanced Supercapacitor Energy Storage”

Second Place - Rachel Beall, North Carolina State University; “Frequency dependence of domain switching in lead zirconate titanate”

Third Place - Brooke Nicole Richtik, University of Calgary; “Processing Optimization of Novel High Tc Piezoelectric Ceramic”

## **2023**

### **Best Oral Presentations:**

First place-Martin F. Sarott, ETH Zurich; “Unravelling the domain formation during the growth of epitaxial ferroelectrics”

Second Place-William Huxter, ETH Zurich; “Scanning nitrogen-vacancy microscopy for ferroelectrics and multiferroics”

Third Place-Samantha T. Jaszewski, University of Virginia; “Impact of Processing Parameters on Crystallization and Ferroelectric Behavior of Hafnium Oxide Thin Films”

## **2022**

### **Best Posters:**

First place-Christoph Riedl, TU Wien; “Surface Decoration of  $\text{Pr}_{0.1}\text{Ce}_{0.9}\text{O}_2$ -d Electrodes with Binary Oxides Measured by in-situ PLD Technique”

Second place- Matthaues Siebenhofer, TU Wien; “Exploring Point Defects and Trap States in Undoped  $\text{SrTiO}_3$  Single Crystals”

Third place-Bridget Powers Beggs, Case Western Reserve University; “Electrical Characterization of Lithium Cobalt Oxide Nanosheets”

### **Best Oral Presentations:**

First place (tie)

Bryan Conry, University of Florida; “Engineering Grain Boundary Anisotropy to Suppress Abnormal Grain Growth in Alumina”

Luis Ortiz, University of Connecticut; “Grain and Grain Boundary Photoconduction in Perovskite Solar Cells with Tomographic AFM”

Second place-Lucas Enright, NIST; “Developing a Standard Reference Material for 5G Millimeter Wave”

Third place-Daniel Rossi, James Madison University; “Configurational Disorder in High Entropy T’ Phase Ruddlesden-Popper Perovskites”

## **2021**

### **Best Posters:**

First place – Seongwoo Cho, Korea Advanced Institute of Science and Engineering, Korea, “High Speed Visualization of Ferroelectric Domains by Friction Asymmetry”

Second place – Viviann Pedersen, Norwegian University of Science and Technology, Norway, “Aqueous chemical solution deposition of  $\text{Sr}_x\text{Ba}_{1-x}\text{Nb}_2\text{O}_6$  thin films”

Third place – Andreas Wohninsland, Technical University of Darmstadt, Germany, “Correlating structural changes to the volume fraction of polar nanoregions in quenched  $\text{Na}_{1/2}\text{Bi}_{1/2}\text{TiO}_3$  -  $\text{BaTiO}_3$  ceramics”

### **Best Oral Presentations:**

First place – William Huddleston, Case Western Reserve University, “Microstructure quantification and machine learning to assess multifunctional performance of  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  – Ni anode composites”

Second place – Jacob Rochester, Ohio State University, “Role of Grain Boundary Refinement and Nano-Precipitates in Enhancing the Flux Pinning of Superconducting  $\text{Nb}_3\text{Sn}$ ”

Third place – Mao-Hua Zhang, Technical University of Darmstadt, Germany, “Design of New Lead-Free Antiferroelectric  $(1-x)\text{NaNbO}_3$  -  $x\text{SrSnO}_3$  Compositions Guided by First-Principles Calculations”

## **2020**

### **Best Posters:**

First place - Ayana Ghosh, University of Connecticut, “Design of novel molecular ferroelectrics using first-principles based and machine learning approaches”

Second place - Nicole Bartek, University of Duisburg-Essen, “Improving the electrical and ferroelectric properties of lead iron niobite by decreasing calcination temperature”

Third place - Charles McLouth Culbertson, Oregon State University, "Oxide ion conduction mechanisms in sodium bismuth titanate ( $\text{Na}_{0.5}\text{Bi}_{0.5}\text{TiO}_3$ )"

### **Best Oral Presentations:**

First place - Elzbieta Gradauskaite, ETH Zurich, "Robust in-plane ferroelectricity in ultrathin epitaxial Aurivillius films"

Second place - John McGarrah, North Carolina State University, "Effects of electrode composition and potential on moisture incorporation and degradation of dielectrics and piezoelectrics"

Third place - Shelby Fields, University of Virginia, "Metal nitride stress and chemistry effects on polarization and cycling performance of  $\text{Hf}_{0.58}\text{Zr}_{0.42}\text{O}_2$  films"

## **2019**

### **Best Posters:**

First place - Shuehi Nakayama, Sophia University; "Ferroelectric  $\text{HfO}_2$  thin films with abundant dopants"

Second place - Kevin Ferri, Pennsylvania State University; "Investigating the Roles of Grain Size, Dopant Choice, and Orientation of  $\text{ZnO}$  Thin Film Varistor Prototypes"

Third place - Halee Lester, University of Florida; "Property and Structure Analysis of Novel 2D Group-III Oxides Predicted by Evolutionary Algorithm"

## **2019**

### **Best Oral Presentations:**

First place - Nives Strkalj, ETH Zurich, Switzerland; "Design of ferroelectric polarization states during epitaxial growth"

Second place – Shelby Fields, University of Virginia; "Polarization and permittivity dependence on electrode stress for ferroelectric  $\text{Hf}_{0.58}\text{Zr}_{0.42}\text{O}_2$  films"

Third place (tie) – William Huddleston, Case Western Reserve University; " $\text{Li}_4\text{Ti}_5\text{O}_{12}$ – $\text{Li}_{0.45}\text{La}_{0.52}\text{TiO}_3$ –Ni all-solid-state lithium-ion battery anode composites"

Third place (tie) – Joshua Paul, University of Florida; “Symmetry-Based Identification of 2D Materials for Piezoelectric Applications”

## **2018**

### **Best Posters:**

First place - William Huddleston; Case Western Reserve University; “Freeze casting of LAGP for 3D textured solid-state structural electrolytes”

Second place - Krishna Chaitanya Pitike; University of Connecticut; “Shape and size dependent phase transformations and field-induced behavior in ferroelectric nanoparticles”

Third place - Lukasz Kuna; University of Connecticut; “Mesoscale modeling of stress induced band-gap attenuation in ZnO Nanowires”

## **2018**

### **Best Oral Presentations:**

First place - Richard Veazey; University of Sheffield; “The Influence of Electrode Geometry on the Average and Local Electrical Responses of Electroceramics”

Second place - Kassiopeia Smith; Boise State University; “Understanding Electrochemical and Structural Behaviors of Irradiation Induced Defects in TiO<sub>2</sub>”

Third place - Todd Surta; Oregon State University; “Exploring the rich defect chemistry of amorphous carbon using a combination of experiments and theory”

## **2017**

### **Best posters:**

First place - Tassie Andersen, Northwestern University, “Evolution of Brownmillerite Structure in SrCoO<sub>2.5</sub> Under Varying Molecular Beam Epitaxy Growth Conditions”

Second place - William Huddleston, Case Western Reserve University, “Sintered Cathodes for All-Solid-State Structural Lithium-Ion Batteries”

Third place - Kevin Pachuta, Case Western Reserve University, “Characterization of Solution-Based Exfoliated Nanosheets”

### **Best oral presentations:**

First place - Ching-Yen Tang, University of Illinois at Urbana Champaign, “In situ X-ray Photoelectron and Auger Electron Spectroscopic Characterization of Reaction Mechanisms during Li-ion Cycling of CuO Electrodes”

Second place - Ran Gao, University of California, Berkeley, "Ferroelectricity in Epitaxial  $\text{Pb}_{1+\delta}\text{ZrO}_3$  Thin Films"

Third place - Xiaorui Tong, West Virginia University, "Kinetic Poisson-Cahn Model of Defect Segregation Near Grain Boundaries During Thermal Annealing in Oxygen-Conducting Solid Electrolytes"

## 2016

### Best posters:

First place - Daniel M. Long,<sup>(1)</sup> Andreas Klein,<sup>(2)</sup> Elizabeth Dickey <sup>(1)</sup>

<sup>(1)</sup> North Carolina State University

<sup>(2)</sup> Technische Universität Darmstadt

"Band Alignment Characterization of Barium Titanate"

Second place - Gerardo Rodriguez-Hernandez, Peiman Hosseini, Harish Bhaskaran, University of Oxford

"Study of  $\text{Ge}_2\text{Sb}_2\text{Te}_5$  Properties for Opto-Electronic Applications"

3rd Place - Dong Hou,<sup>(1)</sup> Tedi-Marie Usher,<sup>(1)</sup> Natthaphon Raengthon,<sup>(2,3)</sup> Narit Triamnak,<sup>(2)</sup> David P. Cann,<sup>(2)</sup> and Jacob L. Jones<sup>(1)</sup>

<sup>(1)</sup> North Carolina State University

<sup>(2)</sup> Oregon State University

<sup>(3)</sup> Chulalongkorn University

"Temperature-induced Average and Local Structural Changes of  $\text{BaTiO}_3\text{-Bi}(\text{Zn}_{0.5}\text{Ti}_{0.5})\text{O}_3$ "

### Best oral presentations:

First place - Kyle Kelley, Edward Sachet, Kniang Kham, Stefan Franzen, and Jon-Paul Maria,

North Carolina State University

"Doping control in epitaxial thin films via reactive RF co-sputtering"

Second place - Jeffrey Braun,<sup>(1)</sup> Mirza Elahi,<sup>(2)</sup> John Gaskins,<sup>(1)</sup> Thomas E. Beechem III,<sup>(3)</sup> Zayd C. Leseman,<sup>(2)</sup> Hiroyuki Fujiwara,<sup>(4)</sup> Sean King,<sup>(5)</sup> and Patrick E. Hopkins<sup>(1)</sup>

<sup>(1)</sup> University of Virginia

<sup>(2)</sup> University of New Mexico

<sup>(3)</sup> Sandia National Laboratories

<sup>(4)</sup> Gifu University

<sup>(5)</sup> Intel Corporation

Third place - Steven Brewer, (1) McKinley Paul, (2) Kenzie Fisher, (3) Jonathon Guerrier, (4) Jacob L. Jones, (4) Ryan Rudy, (5) Ronald G. Polcawich, (5) Evan Glaser, (6) Cory Cress, (6) and Nazanin Bassiri-Gharb (1)

(1) Georgia Institute of Technology

(2) Woodward Academy

(3) Riverwood International Charter School

(4) North Carolina State University

(5) U.S. Army Research Laboratory

(6) Naval Research Laboratory

## **2015**

### **Best posters:**

First place - Gye Hyun Kim, MIT "Effect of surface energy anisotropy on Rayleigh-like solid-state dewetting and nanowire stability"

Second place - Youngho Jin, Georgia Institute of Technology "Microstructure and electrical properties in PMMA/ATO conductive composites with phase segregated microstructures"

Third place - Jun-Young Cho, Seoul National University "The effect of nano-structure on the thermoelectric properties of bulk copper selenide"

### **Best oral presentations:**

First place - Christina Rost, North Carolina State University "Entropy Driven Oxides: configurationally disordered solid solutions and their structure-property"

Second place - Edward Sachet, North Carolina State University "Extreme electron mobility in cadmium oxide through defect equilibrium engineering"

Third place - Jon Mackey, University of Akron "Analytic thermoelectric couple modeling: variable material properties and transient operation"

## **2014**

### **Best posters:**

First place - Shin ik Kim, Korea Institute of Science and Technology  
"Non volatile control of 2DEG Conductance at oxide interfaces"

Second place - Dhruv Seshadri, Case Western University  
"Lithium titanate as Anode Material in Lithium-Ion Batteries"

Third place - Lisheng Gao, The Pennsylvania State University  
"Co-fired Multilayer ceramic batteries for safe electrochemical energy storage"

### **Best oral presentations:**

First place - Brian Foley, University of Virginia “Glass-like Thermal Conductivity of (010)-Textured Lanthanum doped dStrontium Niobate Synthesized with Wet Chemical Deposition”

Second place - Brian Donovan, University of Virginia “Temperature Dependent Thermal Conductivity of nano-Grained Barium Titanate”

Third place - Russell Maier, Penn State University “Investigation of Defect Dipole Kinetics in the Ferroelectric and Paraelectric Phases of Acceptor Doped BaTiO<sub>3</sub> Single Crystals”

## **2013**

### **Best posters:**

First place - Jonathan Mackey, Case Western Reserve University, for “Analytic Thermoelectric Device Optimization”

Second place - Ali Henriques, University of Florida, for “Structural changes in Lead Zirconate Titanate due to High Neutron Radiation Exposure”

Third place - Michelle Nolan, University of Florida, for “Phase equilibria, crystallographic structure, and piezoelectric properties of tetragonal Pb(1-1.5x)SmxZr(1-y)TiyO<sub>3</sub>”

### **Best oral presentations:**

First place - Chris Shelton, North Carolina State University, for “Control of ZnO thin film polarity through interface chemistry”

Second place - Tedi-Marie Usher, University of Florida, for “Domain wall motion and electric-field-induced strains in NBT-xBT solid solutions from in situ neutron diffraction”

Third place - Jon Bock, the Pennsylvania State University, for “The Influence, Role, and Property Variations in Ferroelectricity at the Edge of the Metal-Insulator Transition and Its Influence on Thermoelectric Properties”

## **2012**

**Best poster:** Elena Aksel, University of Florida, for “Crystal Structure and Phase Transitions in Chemically Modified Sodium Bismuth Titanate”

**Best oral presentation:** Cassandra Llano, University of Florida, for “Development and Implementation of a Polarization and Strain Measurement System”

## **2011**

**Best poster:** not awarded in 2011

**Best oral presentation:** Elena Aksel, University of Florida, for “Sodium Bismuth Titanate - Resolving Structural Contradictions”

## **2010**

**Best poster:** Jin Woo Jung, Hoseo University, South Korea, for “Development of AZO-based Transparent, Thin Film Transistors on Transparent Structures”

**Best oral presentation:** Beverly B. Hinojosa, University of Florida, for “Developing the Link Between Atomic Structure and Macroscopic Properties of Cubic Pyrochlores”

## **2009**

**Best poster:** not awarded in 2009

**Best oral presentation:** Anderson Prewitt, University of Florida for “Effects of Field & Temperature During Poling on the Ferroelectric Properties of Lead Zirconate Titanate”

## **2008**

**Best poster:** Christopher T. Shelton, Oregon State University for “Epitaxial Piezoelectric Thin Films on Flexible Substrates”

**Best oral presentation:** Vivek Tomer, Penn State University for “Induced Anisotropy in Electrically Modified Polymer/Ceramic Nano-composites”

## **2007**

**Best oral presentation:** Mark D. Losego, North Carolina State University, for “Engineering Oxide Interfaces to Gallium Nitride by Molecular Beam Epitaxy”

## **2006**

**Best poster:** Weiqun Chen, University of California, Davis, for “Energetics of Cerium-Zirconium Substitution in the  $x\text{Ce}_{0.8}\text{Y}_{0.2}\text{O}_{1.9}-(1-x)\text{Zr}_{0.8}\text{Y}_{0.2}\text{O}_{1.9}$  System”

**Best oral presentation:** Meagen A. Gillispie, Iowa State University, for “Crystal Chemistry and Electrical Properties of Delafossite Compounds”

## **2005**



**Best poster:** Yusuke Tohdo, Nagoya Institute of Technology, for “Crystal Structure analysis of Homologous Compounds  $\text{ALa}_4\text{Ti}_4\text{O}_{15}$  and its Microwave Dielectric Properties”

**Best oral presentation:** Niall J. Donnelly, Pennsylvania State University, for “Investigation of Nonlinear and Relaxation Phenomena in PMN-0.07PT Films Under Large AC Field”