Program Overview

Room /Time	Ballroom South
SuA	PCSI-SuA: Topological Materials I & Pervovskites
SuE	PCSI-SuE: Energy & Van der Waals Heterostructures I
MoM	PCSI-MoM: Nanostructured Surfaces/Oxides I/Semiconductor Growth I/New Techniques I
MoA	PCSI-MoA: Magnetism/Spintronics I/Organics/Nanostructures
MoE	PCSI-MoE: Van der Waals Heterostructures II & New Techniques II
TuM	PCSI-TuM: Complex Oxides I/Topological Materials II/Semiconductor Growth I-Extended
TuE	PCSI-TuE: Majorana Fermions in Atomic Structures
WeM	PCSI-WeM: Spintronics II/Van der Waals Heterostructures II/Semiconductor Interfaces/Complex Oxides II
WeA	PCSI-WeA: Semiconductor Growth III/Wide Gap/Oxide Interfaces/Low-D Structures
ThM	PCSI-ThM: Grande Finale

PCSI
Room Ballroom South - Session PCSI-SuA
Topological Materials I & Pervovskites
Moderators: Scott Crooker, Los Alamos National Laboratory, Peter Krogstrup, Niels Bohr Institute

3:00pm	**INVITED: PCSI-SuA-1** Topological Superconductivity and Majorana Zero Modes on β-Bi_2Pd Thin Films, ***Can-Li Song***, Tsinghua University, China
3:05pm	Invited talk continues.
3:10pm	Invited talk continues.
3:15pm	Invited talk continues.
3:20pm	Invited talk continues.
3:25pm	Invited talk continues.
3:30pm	**PCSI-SuA-7** Origin of the Helicity Dependent Photocurrent in Electrically Gated $(Bi_{1-x}Sb_x)_2Te_3$ Thin Films, ***Yu Pan***, *N Samarth, C Liu, Q Wang,* Penn State University*; A Yeats, D Awschalom,* University of Chicago
3:35pm	Talk continues.
3:40pm	Talk continues.
3:45pm	**INVITED: PCSI-SuA-10** High-efficiency Hybrid Perovskite Based Optoelectronic Devices with Technologically Relevant Stability, ***Aditya Mohite***, Los Alamos National Laboratory
3:50pm	Invited talk continues.
3:55pm	Invited talk continues.
4:00pm	Invited talk continues.
4:05pm	Invited talk continues.
4:10pm	Invited talk continues.
4:15pm	**PCSI-SuA-16** The Origin of High Photovoltaic Efficiencies in Large-grain Organic-Inorganic Perovskites, ***Jean-Christophe Blancon***, *W Nie, A Neukirch, S Tretiak,* Los Alamos National Laboratory*; L Cognet,* Institut d'optique & CNRS*; A Mohite, J Crochet,* Los Alamos National Laboratory
4:20pm	**PCSI-SuA-17** Origin of Photo-absorption and Photo-emission in Two-dimensional Ruddlesden-Popper Perovskites, ***Jean-Christophe Blancon***, *H Tsai, W Nie, A Stier,* Los Alamos National Laboratory*; L Pedesseau,* INSA de Rennes*; C Stoumpos, M Kanatzidis,* Northwestern University*; J Even,* INSA de Rennes*; S Crooker, J Crochet, A Mohite,* Los Alamos National Laboratory
4:25pm	**PCSI-SuA-18** Tin Oxide Atomic Layer Deposition on Hybrid Lead Halide Perovskites for Tandem Photovoltaics, ***Axel Palmstrøm***, *K Bush, J Raiford, M McGehee, S Bent,* Stanford University

PCSI
Room Ballroom South - Session PCSI-SuE
Energy & Van der Waals Heterostructures I
Moderators: Leonard Brillson, Ohio State University, Arend van der Zande, University of Illinois at Urbana Champaign

7:30pm	**INVITED: PCSI-SuE-1** Understanding Surface Chemistry of Atomic Layer Deposition: Toward Renewable Energy Applications, ***Stacey Bent,*** Stanford University
7:35pm	Invited talk continues.
7:40pm	Invited talk continues.
7:45pm	Invited talk continues.
7:50pm	Invited talk continues.
7:55pm	Invited talk continues.
8:00pm	**PCSI-SuE-7** Li-ion Synaptic Transistor for Low Power Analogue Computing (LISTA), ***Alec Talin,*** Sandia
8:05pm	Talk continues.
8:10pm	Talk continues.
8:15pm	**INVITED: PCSI-SuE-10** The World of 2D: It's All About Interfaces, ***Joshua Robinson,*** Penn State
8:20pm	Invited talk continues.
8:25pm	Invited talk continues.
8:30pm	Invited talk continues.
8:35pm	Invited talk continues.
8:40pm	Invited talk continues.
8:45pm	**PCSI-SuE-16** One-dimensional Metals in Twin Grain Boundaries of $MoSe_2$, *Y Ma, H Coy Diaz, S Kolekar,* University of South Florida*; J Avila, M Asensio,* Synchrotron SOLEIL*; J Carmelo,* University of Minho*;* ***Matthias Batzill,*** University of South Florida
8:50pm	Talk continues.
8:55pm	Talk continues.

PCSI
Room Ballroom South - Session PCSI-MoM
Nanostructured Surfaces/Oxides I/Semiconductor Growth I/New Techniques I
Moderators: Aaron Arehart, The Ohio State University, Stacey Bent, Stanford University, Shane Johnson, Arizona State University, Frances Ross, IBM T. J. Watson Research Center

8:30am	**INVITED: PCSI-MoM-1** Quantum dots created by atom manipulation with the scanning tunneling microscope, ***Stefan Fölsch***, Paul-Drude-Institut für Festkörperelektronik, Germany
8:35am	Invited talk continues.
8:40am	Invited talk continues.
8:45am	Invited talk continues.
8:50am	Invited talk continues.
8:55am	Invited talk continues.
9:00am	**PCSI-MoM-7** Distance-Dependence of Chemical Interactions and Image Contrast Reversal in Noncontact Atomic Force Microscopy: A Case Study on Highly Oriented Pyrolytic Graphite, ***Omur Dagdeviren***, *J Goetzen, E Altman, U Schwarz,* Yale University
9:05am	**PCSI-MoM-8** Epitaxial Graphene Induced Surface Reconstruction in Ge(110), ***Gavin Campbell***, Northwestern University; *B Kiraly,* Northwestern University, Netherlands; *R Jacobberger,* University of Wisconsin-Madison; *A Mannix,* Northwestern University; *M Arnold,* University of Wisconsin-Madison; *N Guisinger,* Argonne National Laboratory; *M Hersam, M Bedzyk,* Northwestern University
9:10am	
9:15am	**INVITED: PCSI-MoM-10** Emerging Memory Technologies and the Future of Computing, ***Matthew Marinella***, Sandia National Laboratories
9:20am	Invited talk continues.
9:25am	Invited talk continues.
9:30am	Invited talk continues.
9:35am	Invited talk continues.
9:40am	Invited talk continues.
9:45am	**PCSI-MoM-16** Optochemical Sensing using Metal Oxide Nanoparticles: Adsorption and Detection, ***James Whitten***, *S Kim, R Somaratne, C Granz, S Sengupta,* The University of Massachusetts Lowell
9:50am	**PCSI-MoM-17** Strained MoO_3/MoS_2 Heterostructures: Facile Fabrication,Structure and Electronic Properties, ***Vijay Saradhi Mangu***, *S Brueck, F Cavallo,* University of New Mexico
9:55am	**PCSI-MoM-18** Photoinduced Electron Transfer Across Single Crystal Oxide Electrolyte Interfaces, ***Bruce Parkinson***, University of Wyoming
10:00am	**Coffee Break & Poster Viewing**
10:05am	**Coffee Break & Poster Viewing**
10:10am	**Coffee Break & Poster Viewing**
10:15am	**Coffee Break & Poster Viewing**
10:20am	**Coffee Break & Poster Viewing**
10:25am	**Coffee Break & Poster Viewing**
10:30am	**Coffee Break & Poster Viewing**
10:35am	**Coffee Break & Poster Viewing**
10:40am	**Coffee Break & Poster Viewing**
10:45am	**Coffee Break & Poster Viewing**
10:50am	**Coffee Break & Poster Viewing**
10:55am	**Coffee Break & Poster Viewing**
11:00am	**INVITED: PCSI-MoM-31** The Atomic-Scale Mechanisms of Ternary Semiconductor Alloy Growth: Self-limited vs. Accumulating Anion Processes, ***Joanna Millunchick***, *G Rodriguez, C Tait, E Anderson,* University of Michigan
11:05am	Invited talk continues.
11:10am	Invited talk continues.
11:15am	Invited talk continues.
11:20am	Invited talk continues.
11:25am	Invited talk continues.
11:30am	**PCSI-MoM-37** Preparation of InSb Surfaces for Molecular Beam Epitaxy Growth and Re-growth, ***Mihir Pendharkar***, *J Lee, P Iyer, B Shojaei, A McFadden, J Schuller, C Palmstrom,* University of California, Santa Barbara
11:35am	**PCSI-MoM-38** Mechanisms of Light-Assisted Epitaxy of III-V and II-VI Alloys, ***Kirstin Alberi***, *K Park, D Beaton,* National Renewable Energy Laboratory; *M Scarpulla,* University of Utah

11:40am	**PCSI-MoM-39** *Ab initio*-based Approach to Adsorption of In atom with Strain Relaxation on InAs Wetting Layer Surface Grown on GaAs(001), ***Ryo Kaida***, *T Akiyama, K Nakamura, T Ito,* Mie University, Japan
11:45am	**INVITED: PCSI-MoM-40** Atom Probe Tomography of Low-Dimensional Materials: III-As Nanowire Heterostructures and Doped Layered Chalcogenides, ***Lincoln Lauhon***, Northwestern University
11:50am	Invited talk continues.
11:55am	Invited talk continues.
12:00pm	Invited talk continues.
12:05pm	Invited talk continues.
12:10pm	Invited talk continues.
12:15pm	**PCSI-MoM-46** High Aspect Ratio GaN Nanowires for Tip Metrology and Optical Application, ***Mahmoud Behzadirad***, *M Nami, D Feezell, T Busani,* University of New Mexico
12:20pm	**PCSI-MoM-47** Nanoscale Chemical Imaging with Photo-induced Force Microscopy, ***Thomas Albrecht***, Molecular Vista
12:25pm	**PCSI-MoM-48** Z-Scan Photo-Reflectance Characterization of Resonant Optical Nonlinearities of Surfaces, ***Will Chism***, Xitronix Corporation

PCSI
Room Ballroom South - Session PCSI-MoA
Magnetism/Spintronics I/Organics/Nanostructures
Moderators: Martin Brandt, Walter Schottky Institut, Technische Universität München, Paul M. Koenraad, Eindhoven University of Technology, Netherlands, Daniel Loss, University of Basel, Giovanni Vignale, University of Missouri-Columbia

2:00pm	**INVITED: PCSI-MoA-1** Magnetic Dipole-dipole Sensing at Atomic Scale using Electron Spin Resonance STM, ***Taeyoung Choi***, *W Paul,* IBM Almaden Research Center; *S Rolf-Pissarczyk,* Max Planck Institute for the Structure and Dynamics of Matter, Germany; *A Macdonald,* University of British Columbia, Canada; *K Yang,* IBM Almaden Research Center; *F Natterer,* École Polytechnique Fédérale de Lausanne, Switzerland; *C Lutz,* IBM Almaden Research Center; *A Heinrich,* Ewha Woman University, Republic of Korea
2:05pm	Invited talk continues.
2:10pm	Invited talk continues.
2:15pm	Invited talk continues.
2:20pm	Invited talk continues.
2:25pm	Invited talk continues.
2:30pm	**PCSI-MoA-7** Mechanism of Stabilization and Magnetization of Impurity-doped Zigzag Graphene Nanoribbons, *Y Uchida, S Gomi, H Matsuyama, A Akaishi,* ***Jun Nakamura,*** The University of Electro-Communications (UEC-Tokyo), Japan
2:35pm	**PCSI-MoA-8** Magnetoresistance and Electrically Detected Magnetic Resonance Study of Leakage Currents in Low-k Dielectrics, ***Ryan Waskiewicz***, *M Mutch, P Lenahan,* Penn State University; *S King,* Intel Corporation
2:40pm	**PCSI-MoA-9** Interface Characterization via Spin Dependent Charge Pumping, ***Mark Anders***, *P Lenahan,* Penn State University; *A Lelis,* U. S. Army Laboratory
2:45pm	**INVITED: PCSI-MoA-10** Theory of the Nonlocal Anomalous Hall Effect, ***Giovanni Vignale***, *S Zhang,* University of Missouri-Columbia
2:50pm	Invited talk continues.
2:55pm	Invited talk continues.
3:00pm	Invited talk continues.
3:05pm	Invited talk continues.
3:10pm	Invited talk continues.
3:15pm	**PCSI-MoA-16** Spin-Polarized Current Injection Induced Magnetic Reconstruction at Oxide Interface, ***Gunter Luepke***, College of William & Mary
3:20pm	
3:25pm	
3:30pm	**Coffee Break & Poster Viewing**
3:35pm	**Coffee Break & Poster Viewing**
3:40pm	**Coffee Break & Poster Viewing**
3:45pm	**Coffee Break & Poster Viewing**
3:50pm	**Coffee Break & Poster Viewing**
3:55pm	**Coffee Break & Poster Viewing**
4:00pm	**Coffee Break & Poster Viewing**
4:05pm	**Coffee Break & Poster Viewing**
4:10pm	**Coffee Break & Poster Viewing**
4:15pm	**Coffee Break & Poster Viewing**
4:20pm	**Coffee Break & Poster Viewing**
4:25pm	**Coffee Break & Poster Viewing**
4:30pm	**INVITED: PCSI-MoA-31** Organics Invited 2, ***Markus Wohlgenannt***, University of Iowa
4:35pm	Invited talk continues.
4:40pm	Invited talk continues.
4:45pm	Invited talk continues.
4:50pm	Invited talk continues.
4:55pm	Invited talk continues.
5:00pm	**PCSI-MoA-37** Microwave Magnetization Dynamics in Room Temperature Organic-Based Magnets: From Fundamental Studies to Emerging Applications, ***Ezekiel Johnston-Halperin***, *M Chilcote, A Franson, M Harberts, Y Lu, H Yu,* The Ohio State University; *N Zhu,* Yale University; *I Froning,* The Ohio State University; *X Zhang,* Yale University; *R Adur, C Hammel, A Epstein,* The Ohio State University; *M Flatte,* University of Iowa; *H Tang,* Yale University

5:05pm	**PCSI-MoA-38** Characterization of Energy Conversion Behavior in Nanostructured PEDOT Polymer-Graphene Composite*, M Sakr, S Abdel-Nasser,* ***Mohamed Serry****,* American University in Cairo, Egypt
5:10pm	**PCSI-MoA-39** Applications of Switchable Interfacial Dopants*,* ***Peter Kruse****, A Mohtasebi, T Chowdhury, E Hoque, O Sharif,* McMaster University, Canada
5:15pm	**PCSI-MoA-40** On the Possibility of the Development of Vicinal Superlattices in Quantum Wires on Semiconductor Low - Index Surfaces*,* ***Victor Petrov****,* Russian Academy of Science, Russian Federation
5:20pm	**PCSI-MoA-41** Site-dependent Oxygen Reduction Reaction of N-doped Graphene Nanoclusters*,* ***Haruyuki Matsuyama****, S Gomi, M Ushirozako, A Akaishi, J Nakamura,* The University of Electro-Communications (UEC-Tokyo), Japan
5:25pm	**PCSI-MoA-42** Nanopore Formation with Au Cluster via Ostwald Ripening for Optical Nanobio Sensor*,* ***SeongSoo Choi****, M Park, C Han, S Oh,* SunMoon University, Republic of Korea*; D Park,* Hallym University, South Korea*; Y Kim,* Sungkyunkwan University, Republic of Korea*; N Park,* Seoul National University, Republic of Korea
5:30pm	**PCSI-MoA-43** Tunable-Composition Multi-Component Thin Films using Split-Target Pulsed Laser Deposition*,* ***Wayne McGinnis****, A Hening, T Emery-Adleman,* SPAWAR Systems Center Pacific
5:35pm	**PCSI-MoA-44** Effective Nitrogen Doping into TiO_2 for Visible Light Response Photocatalysis by Ion Implantation Technique*,* ***Tomoko Yoshida****,* Osaka City University, Japan*; S Niimi, M Yamamoto, S Yagi,* Nagoya University, Japan
5:40pm	**PCSI-MoA-45** Study on Photodeposition Process of Pt Nanoparticles on TiO_2 Photocatalyst by XAFS Spectroscopy*,* ***Yuji Nakano****, M Akatsuka, M Yamamoto, C Tsukada, S Ogawa, S Yagi,* Nagoya University, Japan*; T Yoshida,* Osaka City University, Japan

PCSI
Room Ballroom South - Session PCSI-MoE
Van der Waals Heterostructures II & New Techniques II
Moderators: Lincoln Lauhon, Northwestern University, Kyle Seyler, University of Washington

7:30pm	**INVITED: PCSI-MoE-1** Controlled Interfaces in 2D Materials, ***Arend van der Zande,*** University of Illinois at Urbana Champaign
7:35pm	Invited talk continues.
7:40pm	Invited talk continues.
7:45pm	Invited talk continues.
7:50pm	Invited talk continues.
7:55pm	Invited talk continues.
8:00pm	**PCSI-MoE-7** Long-lived Spin/Valley Dynamics of Resident Electron and Holes in Gated Monolayer WSe_2, ***Prasenjit Dey,*** *L Yang, S Crooker,* Los Alamos National Laboratory*; C Robert, G Wang, B Urbaszek, X Marie,* Institut National des Sciences Appliquées, LPCNO
8:05pm	Talk continues.
8:10pm	Talk continues.
8:15pm	**INVITED: PCSI-MoE-10** Building Complex Semiconductor Nanowires via *in situ* Growth Experiments, ***Frances Ross,*** IBM T. J. Watson Research Center
8:20pm	Invited talk continues.
8:25pm	Invited talk continues.
8:30pm	Invited talk continues.
8:35pm	Invited talk continues.
8:40pm	Invited talk continues.
8:45pm	**PCSI-MoE-16** GaN Nanowires as Probes for Scanning Tunneling Microscopy, ***Sofie Yngman,*** Lund University, Sweden*; O Scholder,* Lund Univesrity, Sweden*; F Lenrick, M Khalilian, R Timm, L Samuelson, J Ohlsson, A Mikkelsen,* Lund University, Sweden
8:50pm	**PCSI-MoE-17** TERS: New Method for Nanoscale Characterization of 2D Materials - from Graphene to TMDCs., ***Andrey Krayev,*** *S Bashkirov, V Gavrilyuk, D Evplov, V Zhizhimontov, A Robinson,* AIST-NT Inc.*; M Chaigneau,* Horiba Scientific
8:55pm	**PCSI-MoE-18** Robust High-Resolution Imaging and Quantitative Force Spectroscopy in Vacuum with Tuned-Oscillator Atomic Force Microscopy, ***Omur Dagdeviren,*** *J Goetzen,* Yale University*; H Hoelscher,* KIT*; E Altman, U Schwarz,* Yale University

PCSI
Room Ballroom South - Session PCSI-TuM
Complex Oxides I/Topological Materials II/Semiconductor Growth I-Extended
Moderators: Andrew Millis, Columbia University, Joanna Millunchick, University of Michigan, Ann Arbor, Can-Li Song, Tsinghua University

8:30am	**INVITED: PCSI-TuM-1** Polar Metals by Geometric Design, ***Chang-Beom Eom***, University of Wisconsin-Madison
8:35am	Invited talk continues.
8:40am	Invited talk continues.
8:45am	Invited talk continues.
8:50am	Invited talk continues.
8:55am	Invited talk continues.
9:00am	**PCSI-TuM-7** Scavenging of Oxygen from $SrTiO_3$ during Oxide Thin Film Deposition and 2DEG at Oxide Interfaces, *A Posadas, K Kormondy, W Guo, P Ponath, J Geler Kremer,* ***Alexander Demkov***, The University of Texas
9:05am	Talk continues.
9:10am	Talk continues.
9:15am	**INVITED: PCSI-TuM-10** Realization of a Vertical Topological p-n Junction in Sb_2Te_3/Bi_2Te_3 Heterostructures, ***Gregor Mussler***, *M Eschbach, M Lanius, N Demarina, M Luysberg, L Plucinski, D Grützmacher,* Forschungzentrum Jülich, Germany
9:20am	Invited talk continues.
9:25am	Invited talk continues.
9:30am	Invited talk continues.
9:35am	Invited talk continues.
9:40am	Invited talk continues.
9:45am	**PCSI-TuM-16** Surface Structure and Electronic Properties of Epitaxial Topological Crystalline Insulator Films, ***Omur Dagdeviren***, *C Zhou, K Zou, G Simon, S Albright, S Mandal, M Acosta, X Zhu, S Beigi, F Walker, C Ahn, U Schwarz, E Altman,* Yale University
9:50am	
9:55am	
10:00am	**Coffee Break & Poster Viewing**
10:05am	**Coffee Break & Poster Viewing**
10:10am	**Coffee Break & Poster Viewing**
10:15am	**Coffee Break & Poster Viewing**
10:20am	**Coffee Break & Poster Viewing**
10:25am	**Coffee Break & Poster Viewing**
10:30am	**Coffee Break & Poster Viewing**
10:35am	**Coffee Break & Poster Viewing**
10:40am	**Coffee Break & Poster Viewing**
10:45am	**Coffee Break & Poster Viewing**
10:50am	**Coffee Break & Poster Viewing**
10:55am	**Coffee Break & Poster Viewing**
11:00am	**INVITED: PCSI-TuM-31** Epitaxial Semiconductor – Superconductor Hybrid Materials for Topological Superconductivity, ***Peter Krogstrup***, Niels Bohr Institute, Denmark
11:05am	Invited talk continues.
11:10am	Invited talk continues.
11:15am	Invited talk continues.
11:20am	Invited talk continues.
11:25am	Invited talk continues.
11:30am	**PCSI-TuM-37** One-dimensional Electronic Transport in Epitaxial-Al/InAs Quantum Well Heterostructures, ***JoonSue Lee***, *B Shojaei, M Pendharkar, A McFadden, C Palmstrom, Y Kim,* University of California, Santa Barbara; *M Kjaergaard, C Marcus,* Niels Bohr Institute, Denmark
11:35am	**PCSI-TuM-38** Theoretical Investigations for the Stability and Electronic Structures of Two-dimensional Group-IV Ternary Alloy Monolayers, ***Toru Akiyama***, *G Yoshimura, K Nakamura, T Ito,* Mie University, Japan
11:40am	**PCSI-TuM-39** A Simple Interpretation for Heteroepitaxial Growth Mode in Terms of Surface and Interface, ***Tomonori Ito***, *T Akiyama, K Nakamura,* Mie University, Japan
11:45am	**PCSI-TuM-40** Surface Mediated Formation of Horizontal ErSb Nanowires, ***Nathaniel Wilson***, *S Kraemer, C Palmstrøm,* University of California, Santa Barbara
11:50am	Talk continues.
11:55am	Talk continues.
12:00pm	**PCSI-TuM-43** Effect of Ga-Dangling Bonds at the GaSb/GaAs Interface of GaSb TPV Cells Grown on GaAs Substrates by IMF Technique, ***Emma Renteria***, *A Mansoori, S Addamane, A Soudachanh, G Balakrishnan,* University of New Mexico
12:05pm	**PCSI-TuM-44** Surface Recombination in Sb-based Infrared Detectors Obtained by Release and Transfer of Membranes, ***Marziyeh Zamiri***, University of New Mexico; *B Klein,* Sandia National Laboratory; *V Dahiya, F Cavallo, S Krishna,* University of New Mexico

PCSI
Room Ballroom South - Session PCSI-TuE
Majorana Fermions in Atomic Structures
Moderator: Paul M. Koenraad, Eindhoven University of Technology, Netherlands

7:30pm	**INVITED: PCSI-TuE-1** From Majorana Fermions to Parafermions in Nanowires and Atomic Chains, ***Daniel Loss,*** University of Basel, Switzerland
7:35pm	Invited talk continues.
7:40pm	Invited talk continues.
7:45pm	Invited talk continues.
7:50pm	Invited talk continues.
7:55pm	Invited talk continues.
8:00pm	**INVITED: PCSI-TuE-7** Probing Atomic Structure and Majorana Wavefunctions inMono-Atomic Fe-chains on Superconducting Pb-Surface, ***Rémy Pawlak,*** *M Kisiel, J Klinovaja, T Meier, S Kawai, T Glatzel, D Loss, E Meyer,* University of Basel, Switzerland
8:05pm	Invited talk continues.
8:10pm	Invited talk continues.
8:15pm	Invited talk continues.
8:20pm	Invited talk continues.
8:25pm	Invited talk continues.
8:30pm	**INVITED: PCSI-TuE-13** Majoroana Fermions in Atomic Chains: Spin and Charge Signatures, ***Ali Yazdani,*** Princeton University
8:35pm	Invited talk continues.
8:40pm	Invited talk continues.
8:45pm	Invited talk continues.
8:50pm	Invited talk continues.
8:55pm	Invited talk continues.

Wednesday Morning, January 18, 2017

PCSI
Room Ballroom South - Session PCSI-WeM
Spintronics II/Van der Waals Heterostructures II/Semiconductor Interfaces/Complex Oxides II
Moderators: Aaron Arehart, The Ohio State University, Michael Flatte, University of Iowa, Masataka Higashiwaki, National Institute of Information and Communications Technology, Chakrapani Varanasi, ARO

8:30am	**INVITED: PCSI-WeM-1** Current Switching of a Single Ferromagnetic Layer, ***Chia-Ling Chien***, Johns Hopkins University
8:35am	Invited talk continues.
8:40am	Invited talk continues.
8:45am	Invited talk continues.
8:50am	Invited talk continues.
8:55am	Invited talk continues.
9:00am	**PCSI-WeM-7** Epitaxial Heusler Superlattices with Perpendicular Magnetization, ***Tobias Brown-Heft***, *A McFadden, J Logan, C Palmstrom,* University of California, Santa Barbara
9:05am	**PCSI-WeM-8** Interface-dependent Spin Transfer Torque at Ferromagnetic Topological-Insulator Contacts, ***Sarmita Majumder***, University of Texas, Austin
9:10am	**PCSI-WeM-9** Annealing Effects on Interfacial Electronic Structure in Epitaxial Co_2MnSi/MgO/CoFe Magnetic Tunnel Junctions, ***Anthony McFadden***, *T Brown-Heft, C Palmstrom,* University of California, Santa Barbara
9:15am	**INVITED: PCSI-WeM-10** Valley Excitons in van der Waals Heterostructures, ***Kyle Seyler***, *P Rivera, D Zhong,* University of Washington; *J Schaibley,* University of Arizona; *X Linpeng, B Huang, E Schmidgall,* University of Washington; *R Cheng,* Carnegie Mellon University; *H Yu,* University of Hong Kong; *M McGuire, J Yan, D Mandrus,* Oak Ridge National Laboratory; *W Yao,* University of Hong Kong; *D Xiao,* Carnegie Mellon University; *K Fu, X Xu,* University of Washington
9:20am	Invited talk continues.
9:25am	Invited talk continues.
9:30am	Invited talk continues.
9:35am	Invited talk continues.
9:40am	Invited talk continues.
9:45am	**PCSI-WeM-16** Influence of the Dielectric Environment on Exciton Properties in 2D Semiconductors: Insights from High Magnetic Fields, ***Andreas Stier***, Los Alamos National Laboratory; *N Wilson, G Clark, X Xu,* University of Washington; *S Crooker,* Los Alamos National Laboratory
9:50am	**PCSI-WeM-17** Electronic Properties and Defects in Germanane, ***Thaddeus Asel***, *E Yanchenko, S Jiang, K Krymowski, W Windl, J Goldberger, L Brillson,* The Ohio State University
9:55am	**PCSI-WeM-18** Electrostatic Doping and Hybrid Carriers in Graphene on a Polar $SrTiO_3$ (111) Surface: Theoretical Investigation, *D Shin,* ***Alexander Demkov***, The University of Texas
10:00am	**Coffee Break & Poster Viewing**
10:05am	**Coffee Break & Poster Viewing**
10:10am	**Coffee Break & Poster Viewing**
10:15am	**Coffee Break & Poster Viewing**
10:20am	**Coffee Break & Poster Viewing**
10:25am	**Coffee Break & Poster Viewing**
10:30am	**Coffee Break & Poster Viewing**
10:35am	**Coffee Break & Poster Viewing**
10:40am	**Coffee Break & Poster Viewing**
10:45am	**Coffee Break & Poster Viewing**
10:50am	**Coffee Break & Poster Viewing**
10:55am	**Coffee Break & Poster Viewing**
11:00am	**INVITED: PCSI-WeM-31** Dielectric Related Issues in GaN Based MIS HEMTs, ***Gaudenzio Meneghesso***, University of Padova, DEI, Italy; *D Bisi, I Rossetto, M Ruzzarin, C De Santi, M Meneghini, E Zanoni,* University of Padova - DEI, Italy
11:05am	Invited talk continues.
11:10am	Invited talk continues.
11:15am	Invited talk continues.
11:20am	Invited talk continues.
11:25am	Invited talk continues.
11:30am	**PCSI-WeM-37** Device Physics Modeling of Metal-Semiconductor Interfaces from an Induced Gap State Perspective, ***John Wager***, *K Kuhn,* Oregon State University
11:35am	**PCSI-WeM-38** Investigation of ZnO/PbS Nanocrystal Interfaces for Photonic Device Applications, ***Diogenes Placencia***, Naval Research Laboratory; *I Sellers,* University of Oklahoma; *J Boercker, J Tischler,* Naval Research Laboratory

11:40am	**PCSI-WeM-39** Defect Density Reduction in Core layer of ZnTe Electro-Optical Waveguide by Low Lattice Mismatched Interfaces, ***Wei-Che Sun***, Waseda University, Japan; *T Nakasu, K Odaka,* Waseda University; *M Kobayashi,* Waseda University, Japan; *T Asahi,* JX Nippon Mining & Metals Corp.
11:45am	**INVITED: PCSI-WeM-40** Charge Transfer and Lattice Strain at Oxide Interfaces: Emergent Mottness, Multiferroicity and Antisite Defects, ***Andrew Millis,*** Columbia University
11:50am	Invited talk continues.
11:55am	Invited talk continues.
12:00pm	Invited talk continues.
12:05pm	Invited talk continues.
12:10pm	Invited talk continues.
12:15pm	**PCSI-WeM-46** Large Piezoelectric Characteristics of $KNbO_3$ Nanorods, ***SeolHee Oh,*** Ewha Womans University, Republic of Korea; *B Yun, J Jung,* Inha University, Republic of Korea; *W Jo,* Ewha Womans University, Republic of Korea
12:20pm	**PCSI-WeM-47** Strain Engineering and Interfacial Effects on the Photovoltaic Response in Epitaxial Complex Oxides, ***Adrian Podpirka,*** *A Bennett-Jackson, D Imbrenda, Z Gu,* Drexel University; *V Fridkin,* Drexel University/Shubnikov Inst. for Crystallography
12:25pm	**PCSI-WeM-48** Symmetry Breaking in Abnormally Elongated $PbVO_3$ Thin Films Epitaxially Grown by Pulsed Laser Ablation, ***SeolHee Oh,*** Ewha Womans University, Republic of Korea; *C Roh, J Lee,* Gwangju Institute of Science and Technology (GIST), Republic of Korea; *W Jo,* Ewha Womans University, Republic of Korea

PCSI
Room Ballroom South - Session PCSI-WeA
Semiconductor Growth III/Wide Gap/Oxide Interfaces/Low-D Structures
Moderators: Chang-Beom Eom, University of Wisconsin-Madison, Stefan Fölsch, Paul-Drude-Institut für Festkörperelektronik, Gaudenzio Meneghesso, University of Padova - DEI, Markus Wohlgenannt, University of Iowa

2:00pm	**INVITED: PCSI-WeA-1** The Application of Bismuth as a Surfactant During the Growth of Strain-balanced InAs/InAsSb Superlattices, ***Shane Johnson***, *P Webster,* Arizona State University
2:05pm	Invited talk continues.
2:10pm	Invited talk continues.
2:15pm	Invited talk continues.
2:20pm	Invited talk continues.
2:25pm	Invited talk continues.
2:30pm	**PCSI-WeA-7** Atomic Scale Study of Isovalent Bi Atoms in the (110) InP Surface, ***Christian Krammel,*** Eindhoven University of Technology, Netherlands; *F Davis-Tilley, M Roy, P Maksym,* University of Leicester, UK; *L Zhang, P Wang, K Wang, Y Li, S Wang,* Chinese Academy of Sciences, China; *P Koenraad,* Eindhoven University of Technology, Netherlands
2:35pm	Talk continues.
2:40pm	Talk continues.
2:45pm	**INVITED: PCSI-WeA-10** Current State-of-the-Art of Gallium Oxide Power Device Technology, ***Masataka Higashiwaki,*** *M Wong, K Konishi,* National Institute of Information and Communications Technology, Japan; *K Sasaki, K Goto,* Tamura Corporation, Japan; *R Togashi, H Murakami, Y Kumagai,* Tokyo University of Agriculture and Technology, Japan; *B Monemar,* Linköping University, Sweden; *A Kuramata, S Yamakoshi,* Tamura Corporation, Japan
2:50pm	Invited talk continues.
2:55pm	Invited talk continues.
3:00pm	Invited talk continues.
3:05pm	Invited talk continues.
3:10pm	Invited talk continues.
3:15pm	**PCSI-WeA-16** CO_2 Reduction with H_2O over Ga_2O_3 Photocatalysts Prepared at Various Calcination Temperatures, ***Masato Akatsuka,*** Nagoya University, Japan
3:20pm	**PCSI-WeA-17** ZrO_2 as a High-k Gate Dielectric for Enhancement-mode AlGaN/GaN MOS HEMTs, ***Charles Eddy, Jr.***, *V Wheeler,* U.S. Naval Research Laboratory; *D Shahin,* University of Maryland; *T Anderson, M Tadjer, A Koehler, K Hobart,* U.S. Naval Research Laboratory; *A Christou,* University of Maryland; *F Kub,* U.S. Naval Research Laboratory
3:25pm	**PCSI-WeA-18** Defects and Electrical Characteristics of Pt-based Ohmic and Schottky Contacts to ZnO Nanowires, ***Jon Cox***, *G Foster, A Jarjour,* The Ohio State University; *H Von Wenkstern, M Grundmann,* Universität Leipzig Institut für Experimentelle Physik II, Germany; *L Brillson,* The Ohio State University
3:30pm	**Coffee Break & Poster Viewing**
3:35pm	**Coffee Break & Poster Viewing**
3:40pm	**Coffee Break & Poster Viewing**
3:45pm	**Coffee Break & Poster Viewing**
3:50pm	**Coffee Break & Poster Viewing**
3:55pm	**Coffee Break & Poster Viewing**
4:00pm	**Coffee Break & Poster Viewing**
4:05pm	**Coffee Break & Poster Viewing**
4:10pm	**Coffee Break & Poster Viewing**
4:15pm	**Coffee Break & Poster Viewing**
4:20pm	**Coffee Break & Poster Viewing**
4:25pm	**Coffee Break & Poster Viewing**
4:30pm	**INVITED: PCSI-WeA-31** Investigation of Schottky Contacts and Traps in β-Ga_2O_3, ***Aaron Arehart***, *S Ringel, E Farzana, Z Zhang,* The Ohio State University; *E Ahmadi, Y Oshima, J Speck,* University of California, Santa Barbara
4:35pm	Invited talk continues.
4:40pm	Invited talk continues.
4:45pm	Invited talk continues.
4:50pm	Invited talk continues.
4:55pm	Invited talk continues.
5:00pm	**PCSI-WeA-37** Defect Distribution and Electronic Properties of the IrO_x/ZnO Interface, ***Geoffrey Foster,*** The Ohio State University; *G Mackessy,* Columbus School for Girls; *A Hyland, M Allen,* University of Canterbury, New Zealand; *L Brillson,* The Ohio State University

5:05pm	**PCSI-WeA-38** Ultrasound Treatment Influece on the Si-SiO_2 Interface Defects Structure, ***Daniel Kropman***, *T Laas,* Tallinn University, Estonia*; A Medvids,* Riga Technical University
5:10pm	**PCSI-WeA-39** The Effects of B and Ga Co-doped ZnO Electron Transporting Layer on the Properties of n-ZnO /p- GaN UV Photodetector, *J Huang,* ***Linjun Wang***, *K Tang, Y Shen, F Gu,* Shanghai University, China
5:15pm	**PCSI-WeA-40** 2D Silica and Aluminosilicate Bilayers on Pd(111): From Incommensurate to Commensurate Crystalline, ***Jin-Hao Jhang***, *C Zhou, G Hutchings, E Altman,* Yale University
5:20pm	**PCSI-WeA-41** Electron-phonon Coupling Dynamics for Tunable Bandgap of Transition Metal Dichalcogenide Atomic Layers, ***Quinton Rice***, *T Neupane, D Jayakodige, B Tabibi, F Seo,* Hampton University
5:25pm	**PCSI-WeA-42** Nonlinear Absorption Characteristics of Monolayer and Bilayer/Multilayer of TMDC, ***Tikaram Neupane***, *Q Rice, D Jayakodige, B Tabibi, F Seo,* Hampton University
5:30pm	**PCSI-WeA-43** Graphene Moiré Pattern Ultra-High Resolution Atomic Force Microscopy, *B Kim,* ***Gerald Pascual***, *K Lee,* Park Systems Corporation
5:35pm	**PCSI-WeA-44** Nucleation of Cu_2Te Layer by a Closed Space Sublimation Method Toward the Growth of Te Based Chalcopyrite, ***Youhei Sakurakawa***, *A Uruno, M Kobayashi,* Waseda University, Japan
5:40pm	**PCSI-WeA-45** Gallium Nanoparticles Based Heterostructures for Full Color Thermally Stable Plasmonic and Photonic Platforms, ***Maria Losurdo***, Cnr-Nanotec, Institute of Nanotechnology, Italy*; A Suvorova,* The University of Western Australia*; K Hingerl,* Johannes Kepler University Linz*; J Humlicek,* Masaryk University, CEITEC, Brno,*; A Brown,* Duke University

PCSI
Room Ballroom South - Session PCSI-ThM
Grande Finale
Moderator: Chris Palmstrom, University of California, Santa Barbara

8:30am	**INVITED: PCSI-ThM-1** Spin-Dependent Processes in Organic Solar Cells: Recombination at Bulk Heterojunctions, ***Martin Brandt***, Walter Schottky Institut, Technische Universität München, Germany; *A Kupijai,* Walter Schottky Institute/Technische Universität München, Germany; *K Behringer, F Schaeble, N Galfe, M Stutzmann,* Walter Schottky Institut, Technische Universität München, Germany
8:35am	Invited talk continues.
8:40am	Invited talk continues.
8:45am	Invited talk continues.
8:50am	Invited talk continues.
8:55am	Invited talk continues.
9:00am	**INVITED: PCSI-ThM-7** Exciton Spin Dynamics in Hybrid Organic-inorganic Perovskites, *P Odenthal, W Talmadge, N Gundlach, R Wang, C Zhang, D Sun,* University of Utah; *Z Yu,* Washington State University; *Z Vardeny,* ***Yan Li,*** University of Utah
9:05am	Invited talk continues.
9:10am	Invited talk continues.
9:15am	Invited talk continues.
9:20am	Invited talk continues.
9:25am	Invited talk continues.
9:30am	**INVITED: PCSI-ThM-13** Group IV-SiGeSn Core/Shell Nanowires, ***Simone Assali,*** *A Attiaoui, O Moutanabbir,* École Polytechnique de Montréal, Canada
9:35am	Invited talk continues.
9:40am	Invited talk continues.
9:45am	Invited talk continues.
9:50am	Invited talk continues.
9:55am	Invited talk continues.

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