Program Overview

	1 Togram overview
Room /Time	Ballroom South
SuA	PCSI-SuA: The Future of Computing
SuE	PCSI-SuE: III-V Growth
MoM	PCSI-1MoM: 2D Plasmonics PCSI-2MoM: Atomic Layer Deposition & Etching I PCSI-3MoM: Topological Materials PCSI-4MoM: Surface Characterization
МоА	PCSI-1MoA: Device Interface Characterization PCSI-2MoA: Spectroscopy of 2D Materials PCSI-3MoA: Magnetism in 2D Materials and Interfaces PCSI-4MoA: Oxide Growth and Properties
MoE	PCSI-MoE: 2D Materials Characterization and Devices
TuM	PCSI-1TuM: Quantum Emitters and Excitations PCSI-2TuM: Atomic Scale Characterization PCSI-3TuM: 2D Materials and Heterostructure Growth
TuE	PCSI-TuE: Quantum Materials?
WeM	PCSI-1WeM: Hybrid and Mixed-Dimensional Interfaces I PCSI-2WeM: Topological Materials II PCSI-3WeM: Exploiting Ions in Devices
WeA	PCSI-1WeA: Atomic Layer Deposition & Etching II PCSI-2WeA: Applications of 2D Defects and Interfaces
ThM	PCSI-ThM: Hybrid and Mixed-Dimensional Interfaces II

Program Overview

Special Events Sunday

Special Events Sunday

6:00 PM Welcome Reception/La Terraza

Special Events Sunday 2

Sunday Afternoon, January 13, 2019

	PCSI	
	Room Ballroom South - Session PCSI-SuA	
	The Future of Computing	
	Moderator: Christopher Palmstrøm, University of California,	
	Santa Barbara	
3:00pm	INVITED: PCSI-SuA-1 Chiraltronics: Chiral Domain Wall and Anti- skyrmion Data Storage Elements for High Performance Racetrack Memories, Stuart Parkin, Max Planck Institute, Germany	
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	Invited talk continues.	
3:35pm	Invited talk continues.	
3:40pm	INVITED: PCSI-SuA-9 Neuromorphic Computing, Angel Yanguas-Gil, Argonne National Laboratory	
3:45pm	Invited talk continues.	
3:50pm	Invited talk continues.	
3:55pm	Invited talk continues.	
4:00pm	Invited talk continues.	
4:05pm	Invited talk continues.	
4:10pm		
4:15pm		
4:20pm	PCSI-SuA-17 Panel Discussion I,	
4:25pm	Talk continues.	
4:30pm	Talk continues.	
4:35pm	Talk continues.	
4:40pm	Talk continues.	
4:45pm	Talk continues.	
4:50pm	Talk continues.	
4:55pm	Talk continues.	
5:00pm	Talk continues.	

Sunday Evening, January 13, 2019

	PCSI	
	Room Ballroom South - Session PCSI-SuE	
	III-V Growth	
	Moderator: Lincoln J. Lauhon, Northwestern University	
7:30pm	INVITED: PCSI-SuE-1 Understanding the Kinetics of III-V Semiconductor	
7.30pm	Nanowire Growth using in-situ TEM, C Maliakkal, D Jacobsson, M Tornberg, A Persson, J Johansson, R Wallenberg, Kimberly Thelander, Lund University, Sweden	
7:35pm	Invited talk continues.	
7:40pm	Invited talk continues.	
7:45pm	Invited talk continues.	
7:50pm	Invited talk continues.	
7.5Enm	Invited talk continues.	
7.55piii	invited talk continues.	
8:00pm		
	Indium Nitride Growth by Atomic Layer Epitaxy, <i>Charles R. Eddy, Jr.</i> , <i>N</i> Nepal, U.S. Naval Research Laboratory; <i>S Rosenberg</i> , American Association for	
	Engineering Education; V Anderson, Sotera Defense Solutions; J Woodward,	
	American Society for Engineering Education; C Wagenbach, Boston University; A Kozen, Amerian Society for Engineering Education; Z Robinson, College at	
	Brockport SUNY; L Nyakiti, Texas A&M University; S Qadri, U.S. Naval Research	
	Laboratory; M Mehl, U.S. Naval Academy; K Ludwig, Boston University; J Hite, U.S.	
8:05pm	Naval Research Laboratory PCSI SuE 9 Crowth Strategies for Medibing Hotorovalent Interfaces	
8.030111	PCSI-SuE-8 Growth Strategies for Modifying Heterovalent Interfaces, Kirstin Alberi, K Park, National Renewable Energy Laboratory	
8:10pm	PCSI-SuE-9 InAs QD Formation on GaAs(110) by Bi-surfactants, W	
	Martyanov, Technische Universität Berlin, Germany; R Lewis, Paul-Drude-Institut für Festkörperelektronik, Germany; H Janssen, P Farin, R Zielinski, C Schulze, A	
	Lenz, Technische Universität Berlin, Germany; L Geelhaar, Paul-Drude-Institut für	
	Festkörperelektronik, Germany; <i>Holger Eisele,</i> Technische Universität Berlin, Germany	
8:15pm	PCSI-SuE-10 Total Tomography of Nonplanar III-As Heterostructures, L	
	Lähnemann, 1Paul-Drude-Institut fu" r Festko"rperelektronik, Leibniz-Institut im	
	Forschungsverbund Berlin e.V., Germany; M Hill, Northwestern University; J Herranz, 1Paul-Drude-Institut fu" r Festko"rperelektronik, Leibniz-Institut im	
	Forschungsverbund Berlin e.V., Germany; O Marquardt, Weierstraß-Institut fur	
	Angewandte Analysis und Stochastik, Germany; A Al Hassan, A Davtyan, Naturwissenschaftlich-Technische Fakultat der Universitat Siegen, Germany; O	
	Hruszkewycz, M Holt, Argonne National Laboratory; C Huang, Northwestern	
	University; <i>U Jahn</i> , Paul-Drude-Institut fur Festkoperelektronik, Leibniz-Institut im Forschungsverbund Berlin e.V., Germany; <i>U Pietsch</i> , Naturwissenschaftlich-	
	Technische Fakultat der Universitat Siegen, Germany; <i>Lincoln J. Lauhon</i> ,	
	Northwestern University; <i>L Geelhaar</i> , Paul-Drude-Institut für Festkörperelektronik, Germany	
8:20pm	INVITED: PCSI-SuE-11 Superconducting Proximity Effect in Two-	
·	Dimensional Semiconductor-Superconductor Structures, Javad Shabani,	
0.05	New York University	
8:25pm	Invited talk continues.	
8:30pm	Invited talk continues.	
0.2Enm	In the deally constitutes	
0.55µ111	Invited talk continues.	
8:40pm	Invited talk continues.	
Q-4Enm	Invited talk continues	
8:45pm	Invited talk continues.	

Special Events Monday

Special Events Monday

7:30 AM	Continental Breakfast/Ballroom North
10:00 AM	Coffee Break and Poster Viewing/Ballroom North
12:00 PM	Lunch and Poster Viewing/Ballroom North
3:30 PM	Coffee Break and Poster Viewing/Ballroom North
6:00 PM	Dinner/La Terraza

Monday Morning, January 14, 2019

	Room Ballroom South	
8:30am	INVITED: PCSI-1MoM-1 Controlling Light at the Atomic Scale with 2D Polaritons,	PCSI
	Javier García de Abajo, ICFO-Institut de Ciencies Fotoniques, Av. Carl F. Gauss 3, 08860 Castelldefels (Barcelona), Spain	Session PCSI-1MoM
8:35am	Invited talk continues.	2D Plasmonics
8:40am	Invited talk continues.	Moderator: Anders Mikkelsen, Lund University, Sweden
8:45am	Invited talk continues.	
8:50am	Invited talk continues.	
8:55am	Invited talk continues.	
9:00am	Invited talk continues.	
9:05am	PCSI-1MoM-8 An Optical transformer-based Campanile Near-field Probe on an AFM Cantilever, <i>K Le</i> , aBeam Technologies; <i>S Bilent</i> , Lawrence Berkeley National Lab; <i>C Pina-Hernandez</i> , aBeam Technologies; <i>S Cabrini</i> , Lawrence Berkeley National Lab; <i>Keiko Munechika</i> , aBeam Technologies	
9:10am	PCSI-1MoM-9 Localized Surface Curvature Artifacts in Gap-mode Tip-enhanced	
9:15am	Nanospectroscopy, <i>Darya Stepanichsheva</i> , Tomsk Polytechnic University, Russia INVITED: PCSI-2MoM-10 How Chemistry Drives Microstructure: Probing the	DOC
3.13um	Structure of sub-nm ALD Materials using in-situ FTIR and Synchrotron	PCSI Session PCSI-2MoM
	Techniques, Angel Yanguas-Gil, Argonne National Laboratory	Atomic Layer Deposition & Etching I
9:20am	Invited talk continues.	Moderator: Anders Mikkelsen, Lund University, Sweden
9:25am	Invited talk continues.	
9:30am	Invited talk continues.	
9:35am	Invited talk continues.	
9:40am	Invited talk continues.	
9:45am	PCSI-2MoM-16 Mechanism of Hydrogen Plasma Modified ALD Growth of Metalenriched Oxides Studied by <i>In-Situ</i> Mass Spectrometry, <i>Thomas Larrabee</i> , <i>S Prokes</i> , Naval Research Laboratory	
9:50am	PCSI-2MoM-17 In Situ Investigation of Doping of 2D Semiconductors During	
	Atomic Layer Deposition of Dielectrics, <i>Michael Moody</i> , <i>J Shang</i> , <i>J Chen</i> , A Henning, T Lohr, T Marks, L Lauhon, Northwestern University	
9:55am	PCSI-2MoM-18 The Impact of the Annealing Temperature of the Seed Layer on the Growth and the Electrical Properties of the Main Layer in Atomic Layer Deposition of SrTiO ₃ Films, <i>Sang Hyeon Kim</i> , Seoul National University, Republic of Korea; <i>W Lee</i> , Northwestern University; <i>C An</i> , <i>D Kwon</i> , <i>D Kim</i> , <i>S Cha</i> , <i>S Cho</i> , <i>C Hwang</i> , Seoul National University, Republic of Korea	
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 INVITED: BCSL 2MoM 21 Topological Hotoroctrustures by Molecular Ream	nocci.
11:00am	INVITED: PCSI-3MoM-31 Topological Heterostructures by Molecular Beam Epitaxy, Susanne Stemmer, University of California, Santa Barbara	PCSI Session PCSI-3MoM
11:05am	Invited talk continues.	Topological Materials
11:10am	Invited talk continues.	Moderator: Javad Shabani, New York University
11:15am	Invited talk continues.	
11:20am	Invited talk continues.	
11:25am	Invited talk continues.	

Monday Morning, January 14, 2019

11:30am	PCSI-3MoM-37 Structural Distortions and Surface/Bulk Competition in Quasi-2D	
	SnSe-TiSe ₂ Nanolayered Heterostructures, <i>Sage Bauers</i> , National Renewable Energy Laboratory; <i>D Hamann, D Merrill, J Ditto, M Esters,</i> University of Oregon; <i>D Roberts,</i> University of Colorado at Boulder; <i>A Zakutayev,</i> National Renewable Energy Laboratory; <i>D Johnson,</i> University of Oregon	
11:35am	PCSI-3MoM-38 Gold-gold Dimer Buckling and Electronic Structure of Epitaxial LaAuSb Films., <i>Patrick Strohbeen</i> , <i>D Du</i> , <i>C Zhang</i> , <i>E Shourov</i> , University of Wisconsin-Madison; <i>F Rodolakis</i> , <i>J McChesney</i> , Argonne National Laboratory; <i>P Voyles</i> , <i>J Kawasaki</i> , University of Wisconsin-Madison	
11:40am	PCSI-3MoM-39 MBE Growth of Cd ₃ AS ₂ on GaAs(001) Substrates, <i>Anthony Rice, K Alberi</i> , National Renewable Energy Laboratory	
11:45am	PCSI-4MoM-40 The Direct Band Gap of α-Sn Investigated by Infrared Ellipsometry, <i>Rigo Carrasco</i> , <i>C Zamarripa</i> , <i>S Zollner</i> , New Mexico State University; <i>J Menendez</i> , Arizona State University	PCSI Session PCSI-4MoM
11:50am	PCSI-4MoM-41 Advanced ARPES Analyzer and Momentum Microscope KREIOS 150 – Concepts and First Results on Layered Materials and Topological Insulators, <i>Thomas Schulmeyer</i> , SPECS-TII, Inc.	Surface Characterization Moderator: Javad Shabani, New York University
11:55am	PCSI-4MoM-42 Investigating Relative Binding Strengths of Various Dye Attachment Chemistries at the Titania-Dye Interface in Dye-Sensitized Solar Cells, <i>Gregory Smith</i> , <i>B Harvey</i> , <i>J Placzek</i> , Angelo State University	

Monday Afternoon, January 14, 2019

	Room Ballroom South	,
2:00pm	INVITED: PCSI-1MoA-1 Sequential and In-Situ Atom Probe Tomography and Optical Spectroscopy on Single Luminescent Nanoscale Objects, <i>Lorenzo Rigutti</i> , University of Rouen Normandie, France	PCSI Session PCSI-1MoA
2:05pm	Invited talk continues.	Device Interface Characterization Moderator: Kimberly Thelander, Lund University
2:10pm	Invited talk continues.	meanach, cana ointeisit,
2:15pm	Invited talk continues.	
2:20pm	Invited talk continues.	
2:25pm	Invited talk continues.	
	PCSI-1MoA-7 The Three-dimensional Shape of Antiphase Domains in GaP on Si(001), <i>Pascal Farin</i> , Technische Universität Berlin, Germany	
	PCSI-1MoA-8 Atom Probe Tomography of GaN Vertical Power Diodes: Impurity Distribution near Regrowth Interfaces, <i>Alexander Chang</i> , Northwestern University; <i>M Nami, B Li, J Han</i> , Yale University; <i>L Lauhon</i> , Northwestern University	
	PCSI-1MoA-9 Surface/Subsurface Identification and Control of Ga ₂ O ₃ Native Point Defects, <i>Hantian Gao</i> , <i>S Muralidharan</i> , <i>N Pronin</i> , <i>M Karim</i> , <i>S White</i> , <i>T Asel</i> , <i>G Foster</i> , <i>S Krishnamoorthy</i> , <i>S Rajan</i> , <i>L Cao</i> , The Ohio State University; <i>M Higashiwaki</i> , National Institute of Information Communications Technology, Japan; <i>H Von Wenckstern</i> , <i>M Grundmann</i> , Universität Leipzig, Germany; <i>H Zhao</i> , The Ohio State University; <i>D Look</i> , Wright State University; <i>L Brillson</i> , The Ohio State University	
	PCSI-1MoA-10 Electrically Detected Magnetic Resonance Study of Leakage Currents in a-SiN:H, <i>Ryan Waskiewicz</i> , <i>P Lenahan</i> , Pennsylvania State University; <i>S King</i> , Intel Corp.	
	PCSI-1MoA-11 Internal Mechanical Stresses Relaxation in the Si-SiO ₂ System and its Influence on the Interface Properties, <i>Daniel Kropman</i> , <i>V Seeman</i> , Tartu University, Estonia; <i>A Medvids</i> , <i>P Onufrievs</i> , Riga Technical University, Latvia	
	INVITED: PCSI-2MoA-12 Light Matter Interaction in Tunable 2D Materials and Artificial van der Waals Solids, Ursula Wurstbauer, University of Münster, Germany	PCSI
	Invited talk continues.	Session PCSI-2MoA Spectroscopy of 2D Materials
3:05pm	Invited talk continues.	Moderator: Kimberly Thelander, Lund University
3:10pm	Invited talk continues.	
3:15pm	Invited talk continues.	
3:20pm	Invited talk continues.	
	PCSI-2MoA-18 Ultrafast Enhancement of Interfacial Exchange Coupling in Ferromagnetic Co ₂ FeAl/(Ga,Mn)As Bilayer, <i>Gunter Luepke</i> , College of William & Mary	
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	
	INVITED: PCSI-3MoA-31 Magnetism in Monolayer Transition Metal	PCSI
	Dichalcogenides, <i>Matthias Batzill</i> , University of South Florida	Session PCSI-3MoA
	Invited talk continues.	Magnetism in 2D Materials and Interferes
4:35pm	Invited talk continues. Invited talk continues.	Magnetism in 2D Materials and Interfaces Moderator: Anders Mikkelsen, Lund University, Sweden
4:35pm 4:40pm		
4:35pm 4:40pm 4:45pm	Invited talk continues.	

Monday Afternoon, January 14, 2019

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5:00pm	PCSI-3MoA-37 Epitaxial Growth and STM Characterization of 2D Magnet MnSe ₂ and VSe ₂ , <i>Tiancong Zhu</i> , The Ohio State University; <i>D O'Hara</i> , University of California, Riverside; <i>J Repicky</i> , <i>J Cobbert</i> , <i>J Gupta</i> , The Ohio State University; <i>R Kawakami</i> , Ohio State University-Columbus	
5:05pm	PCSI-3MoA-38 Investigation of Low-Energy Ion-Implanted Multilayer Epitaxial Graphene, <i>P Miceli, Alessandro Mazza</i> , University of Missouri	
5:10pm	PCSI-3MoA-39 Large Positive Linear Magnetoresistance in the Two-dimensional t_{2g} Electron Gas at the EuO/SrTiO ₃ Interface, <i>Alexander Demkov</i> , The University of Texas	
5:15pm	INVITED: PCSI-4MoA-40 Invited Speaker, Bharat Jalan, University of Minnesota	PCSI
5:20pm	Invited talk continues.	Session PCSI-4MoA
5:25pm	Invited talk continues.	Oxide Growth and Properties Moderator: Anders Mikkelsen, Lund University, Sweden
5:30pm	Invited talk continues.	
5:35pm	Invited talk continues.	
5:40pm	Invited talk continues.	
5:45pm	PCSI-4MoA-46 Strain Enhancement of the Electro-optical Response in Semiconductor-integrated Perovskites, <i>Alexander Demkov</i> , The University of Texas	
5:50pm	PCSI-4MoA-47 Synthesis of Large Area Single-crystalline Freestanding Oxide Membranes, <i>Prastuti Singh</i> , <i>A Swartz</i> , <i>D Lu</i> , <i>S Hong</i> , Stanford University; <i>K Nishio</i> , Geballe Laboratory for Advanced Materials; <i>Y Hikita</i> , Stanford Institute for Materials and Energy Sciences; <i>H Hwang</i> , Stanford University	

Monday Evening, January 14, 2019

	PCSI	
	Room Ballroom South - Session PCSI-MoE	
	2D Materials Characterization and Devices	
	Moderator: Ursula Wurstbauer, University of Münster	
7:45pm	PCSI-MoE-1 Determining Chirality of Non-Centrosymmetric FeGe and	
	MnGe with Spin-polarized Imaging of MnGe Spin Spirals via STM, J. P.	
	Corbett, J Repicky, T Zhu, A Ahmed, R Bennet, The Ohio State University; J	
	Guerrero-Sanchez, Universidad Nacional Autonoma de Mexico, Mexico; R Kawakami, Ohio State University-Columbus; J Gupta, The Ohio State University	
7:50pm		
7.50p	Talk continues.	
7:55nm	Talk continues.	
7.55pm	Talk continues.	
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8:00pm	PCSI-MoE-4 Ultrafast Spin and Charge Transfer in Monolayer WSe ₂ -Graphene Heterostructure Devices, <i>Michael Newburger</i> , <i>K Luo</i> , Ohio State	
	University-Columbus; K McCreary, Naval Research Laboratory; I Martin, E	
	McCormick, Ohio State University-Columbus; B Jonker, Naval Research Laboratory;	
0.05	R Kawakami, Ohio State University-Columbus	
8:05pm	PCSI-MoE-5 Probing Quantum Hall and Quantum Valley Hall Effect in Bilayer Graphene Nanostructures, <i>Jing Li</i> , Los Alamos National Laboratory; <i>J</i>	
	Zhu, The Pennsylvania State University	
0.40		
8:10pm	PCSI-MoE-6 Optoelectronic Modulation in 2D Mo _{1-x} W _x Te ₂ Monolayers, Zakaria Al Balushi, UC Berkeley	
	Zakana Ai Balashi, Ge Belikeley	
0.45		
8:15pm	PCSI-MoE-7 Pressure-controlled Photoluminescence and Identification of an Electronic State in Hydrated Methyl-Terminated Germanane, B.A.	
	Noesges, T Asel, W Huey, S Jiang, K Krymowski, Y Wang, W Windl, J Goldberger, L	
	Brillson, The Ohio State University	
8:20pm	PCSI-MoE-8 Ultrafast Hot Electron Dynamics in InAs Nanowires with	
	Variable Crystal Phases Investigated by Time-resolved Photoelectron Emission Microscopy, L Wittenbecher, J Vogelsang, S Lehmann, K Thelander, D	
	Zigmantas, Anders Mikkelsen, Lund University, Sweden	
8:25pm	INVITED: PCSI-MoE-9 Van der Waals Integration beyond 2D Materials,	
	Xiangfeng Duan, UCLA	
8:30pm	Invited talk continues.	
8:35pm	Invited talk continues.	
8:40pm	Invited talk continues.	
8:45pm	Invited talk continues.	
8:50pm	Invited talk continues.	

Special Events Tuesday

Special Events Tuesday

7:30 AM Continental Breakfast/Ballroom North

9:55 AM Coffee Break and Poster Viewing/Ballroom North

Tuesday Morning, January 15, 2019

	Room Ballroom South	
8:30am	INVITED: PCSI-1TuM-1 The NV Center in Diamond: A Versatile Quantum	PCSI
	Technology, Ania Bleszynski Jayich, University of California, Santa Barabara; A Jenkins, D	Session PCSI-1TuM
0.25	Bluvstein, S Meynell, S Baumann, Z Zhang, University of California, Santa Barbara	Quantum Emitters and Excitations
8:35am	minted talk continues.	Moderator: Javier García de Abajo, ICFO-Institut de
	Invited talk continues.	Ciencies Fotoniques
	Invited talk continues.	
8:50am		
8:55am		
9:00am		
9:05am	PCSI-1TuM-8 Stark Tuning of Single Photon Emitters in Hexagonal Boron Nitride, <i>G Noh, D Choi</i> , Ajou University, Korea; <i>J Kim, D Im, Y Kim,</i> POSTECH, Korea; <i>H Seo, Jieun Lee,</i> Ajou University, Korea	
9:10am	Talk continues.	
9:15am	Talk continues.	
9:20am	PCSI-1TuM-11 Quantum Magnonics in V[TCNE] ₂ , Ezekiel Johnston-Halperin, The Ohio State University	
9:25am	PCSI-2TuM-12 Surface Potential and Hydrophilicity Measurements on Titanium	PCSI
	Dioxide before and after Ultraviolet Irradiation, <i>Takuya Furukawa</i> , <i>K Noda</i> , Keio	Session PCSI-2TuM
0.20	University, Japan	Atomic Scale Characterization
9:30am	PCSI-2TuM-13 Atomic-scale Observations of Reduced Graphene Oxide Nanosheets Dispersed on HOPG Substrates, Shaoxian Li, T Hirano, K Kawai, K	Moderator: Javier García de Abajo, ICFO-Institut de
	Yamamura, K Arima, Osaka University, Japan	Ciencies Fotoniques
9:35am	PCSI-2TuM-14 Diamond Coated Tips for Scanning Tunneling Microscopy, J Owen, Zyvex Labs; Ben Stein, O Auciello, University of Texas at Dallas	
9:40am	PCSI-2TuM-15 Surface Physical and Chemical Processes with an Optical Scanning Tunneling Microscope, <i>Shaowei Li</i> , University of California, Irvine; <i>W Ho</i> , Northwestern University	
9:45am	Talk continues.	
	Talk continues.	
	Coffee Break & Poster Viewing	
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10:35am	†	
10:40am	Coffee Break & Poster Viewing	
10:45am	ļ	
10:50am		
10:55am	Coffee Break & Poster Viewing	
	INVITED: PCSI-3TuM-31 Chemically and Atomically Ordered States in 2D Crystal	DOST
11.000111	Alloys, Nasim Alem, Penn State University	PCSI Session PCSI 2TuM
11:05am	Invited talk continues.	Session PCSI-3TuM
11:10am	Invited talk continues.	2D Materials and Heterostructure Growth
11:15am	1	Moderator: Susanne Stemmer, University of California, Santa Barbara
	Invited talk continues.	Janua Darvara
	PCSI-3TuM-37 Defect-Assisted Heteroepitaxial Growth of Monolayer Tungsten	-
	Diselenide Films with Preferential Orientation on Hexagonal Boron Nitride, Xiaotian Zhang, F Zhang, Y Wang, D Schulman, T Zhang, A Bansal, N Alem, S Das, V Crespi, M Terrones, J Redwing, The Pennsylvania State University	
11:35am	PCSI-3TuM-38 Novel Sulfide Heterostructures from Designed Precursors, D Roberts, University of Colorado at Boulder; Sage Bauers, J Perkins, National Renewable Energy Laboratory; C Stoldt, University of Colorado at Boulder; A Zakutayev, National Renewable Energy Laboratory	
11:40am	PCSI-3TuM-39 Rotational Alignment of Epitaxially-grown hBN on Macrostepped Graphene/SiC(0001) Single-Crystal Substrates, <i>Daniel Pennachio</i> , University of California, Santa Barbara; <i>C Ornelas-Skarin</i> , University of California, Irvine; <i>N Wilson</i> , <i>E Young</i> , <i>A McFadden</i> , <i>T Brown-Heft</i> , University of California, Santa Barbara; <i>K Daniels</i> , <i>R Myers-Ward</i> , <i>K Gaskill</i> , <i>C Eddy</i> , <i>Jr.</i> , U.S. Naval Research Laboratory; <i>C Palmstrom</i> , University of California, Santa Barbara	

Tuesday Evening, January 15, 2019

	PCSI	
	Room Ballroom South - Session PCSI-TuE Quantum Materials?	
	Moderator: Debdeep Jena, Cornell University	
7:00pm	INVITED: PCSI-TuE-1 Magnetic Weyl Semimetals!, Claudia Felser, J Gooth, K Manna, E Lui, Y Sun, Max Planck Institute, Germany	
7:05pm	Invited talk continues.	
7.05p	invited talk continues.	
7:10pm	Invited talk continues.	
7:15pm	Invited talk continues.	
7:20pm	Invited talk continues.	
7:25pm	Invited talk continues.	
7:30pm	INVITED: PCSI-TuE-7 Status of Purity for Bulk Samples and Implications for Quantum States, <i>Arthur Ramirez</i> , University of California Santa Cruz	
7:35pm	Invited talk continues.	
7.40		
7:40pm	Invited talk continues.	
7:45pm	Invited talk continues.	
7:50pm	Invited talk continues.	
7:55pm	Invited talk continues.	
8:00pm	PCSI-TuE-13 Rump Session,	

Special Events Wednesday

Special Events Wednesday

7:30 AM	Continental Breakfast/Ballroom North
9:50 AM	Coffee Break and Poster Viewing/Ballroom North
11:55 AM	Lunch and Poster Viewing/Ballroom North
3:05 PM	Coffee Break and Poster Viewing/Ballroom North
6:00 PM	Conference Banquet Dinner/La Terraza

Wednesday Morning, January 16, 2019

	Room Ballroom South		
8:30am	INVITED: PCSI-1WeM-1 Nanoimaging and Spectroscopy of Emerging Photovoltaic, Marina Leite, University of Maryland	PCSI	
8:35am	Invited talk continues.	Session PCSI-1WeM Hybrid and Mixed-Dimensional Interfaces I	
8:40am	Invited talk continues.	Moderator: A. Alec Talin, Sandia National Laboratories	
8:45am	Invited talk continues.		
8:50am	Invited talk continues.		
8:55am	Invited talk continues.		
9:00am	Invited talk continues.		
9:05am	PCSI-1WeM-8 Electronic Charge Transport in Solution-processed Vertically Stacked 2D Perovskite Quantum Wells, H Tsai, Rice University; R Asadpour, Purdue University; M Kanatzidis, Northwestern University; M Alam, Purdue University; A Mohite, Rice University; Wanyi Nie, Los Alamos National Laboratory		
9:10am	PCSI-1WeM-9 N-type Doping in Organic Semiconductor Thin Films by using a Dendritic Oligoarylamine-substituted Benzimidazole Dopant, <i>Yuji Yoshihashi</i> , Keio University, Japan		
9:15am	INVITED: PCSI-1WeM-10 Multi-scale Modeling of Molecule-Surface Interactions for Improved Charge Transfer across Photoelectrochemical Interfaces, <i>A Iyer, K Kearney</i> , University of Illinois at Urbana-Champaign; <i>A Rockett</i> , Colorado School of Mines; <i>Elif Ertekin</i> , University of Illinois at Urbana-Champaign		
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-1WeM-16 Scanning Electrochemical Microscopy of Graphene-based Hybrids: Insights into Physicochemical Interfacial Processes and Electroactive Site Density Distribution, <i>Sanju Gupta</i> , Western Kentucky University		
9:50am	Coffee Break & Poster Viewing		
9:55am	Coffee Break & Poster Viewing		
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-2WeM-31 Epitaxial Nitride Semiconductor/Superconductor Heterostructures, Debdeep Jena, Cornell University	PCSI	
11:05am	Invited talk continues.	Session PCSI-2WeM Topological Materials II	
11:10am	Invited talk continues.	Moderator: Lincoln J. Lauhon, Northwestern University	
11:15am	Invited talk continues.		
11:20am	Invited talk continues.		
11:25am	Invited talk continues.		

Wednesday Morning, January 16, 2019

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11:30am	PCSI-2WeM-37 Wafer Bonding Approach for Epitaxial Al/GaAs(001)/Al Trilayers, Anthony McFadden, M Seas, University of California, Santa Barbara; C McRae, R Lake, National Institute of Standards and Technology; J Wen, J Wang, I Arslan, Argonne National Laboratory; D Pappas, National Institute of Standards and Technology; C Palmstrøm, University of California, Santa Barbara	
11:35am	PCSI-2WeM-38 Growth and Nucleation of Low-Loss Titanium Nitride Superconductors on Silicon (111) using Plasma Assisted MBE, Chris Richardson, A Alexander, C Weddle, University of Maryland; B Arey, M Olszta, Pacific Northwest National Laboratory	
11:40am	PCSI-3WeM-39 Non-volatile Redox Memory for Brain Inspired Computing, Elliot Fuller, Sandia National Laboratories; S Keene, A Melianas, Stanford University; Z Wang, University of Massachusetts Amherst; S Agarwal, Y Li, Sandia National Laboratories; Y Tuchman, Stanford University; C James, M Marinella, Sandia National Laboratories; J Yang, University of Massachusetts Amherst; A Salleo, Stanford University; A Talin, Sandia National Laboratories	PCSI Session PCSI-3WeM Exploiting Ions in Devices Moderator: Lincoln J. Lauhon, Northwestern University
11:45am	PCSI-3WeM-40 Non-volatile Electrochemical Memory Operating near the Thermal Voltage Limit, <i>Yiyang Li, E Fuller, S Agarwal, A Talin,</i> Sandia National Laboratories	
11:50am	PCSI-3WeM-41 Simultaneous Topographical and Electrochemical Mapping using Scanning Ion Conductance Microscopy – Scanning Electrochemical Miscrosocpy (SICM-SECM), <i>W Shi, Byong Kim, K Lee,</i> Park Systems; <i>G Mendoza</i> , Park Systems, Mexico	

Wednesday Afternoon, January 16, 2019

	Room Ballroom South	
2:00pm	INVITED: PCSI-1WeA-1 Thermal Atomic Layer Etching of Silicon Using an	PCSI
	Oxidation and "Conversion-Etch" Mechanism, <i>Steven M. George</i> , A Abdulagatov, University of Colorado at Boulder	Session PCSI-1WeA
2:05pm	·	Atomic Layer Deposition & Etching II
2:10pm	Invited talk continues. Invited talk continues.	Moderator: Angel Yanguas-Gil, Argonne National Lab
2:15pm	Invited talk continues.	
2:20pm	Invited talk continues.	
2:25pm	Invited talk continues.	
2:30pm	PCSI-1WeA-7 Fundamental Properties for Enhanced Etching of Ge Surfaces in	
	Water Assisted by Single Sheets of Reduced Graphene Oxide, <i>Tomoki Hirano</i> , <i>Y Nakata, H Yamashita, S Li, K Kawai, K Yamamura, K Arima</i> , Osaka University, Japan	
2:35pm	PCSI-1WeA-8 Laser-patterning of Graphene Oxide Beyond the Diffraction Limit, Maksim Fatkullin, Tomsk Polytechnic University, Russia	
2:40pm	PCSI-1WeA-9 Maskless Si Nano-wall Formation by Wet-etching Process using a	
- 1	Femtosecond Laser Irradiation, <i>S Lee</i> , Pusan National University, South Korea; <i>Hyun Hwi Lee</i> , Pohang Accelerator Laboratory, South Korea; <i>H Kim</i> , Pusan National University, South Korea	
2:45pm	PCSI-1WeA-10 Epitaxial (Bi,Sb) ₂ Te ₃ /Graphene/2D-Ga Heterostructures Towards	
	Topological Superconductivity, <i>Brian Bersch</i> , <i>N Briggs</i> , <i>J Jiang</i> , <i>Y Zhao</i> , <i>Y Chuang</i> , <i>C Li</i> , <i>Y</i>	
	Wang, The Pennsylvania State University; M Fu, Q Zou, Z Gai, A Li, Oak Ridge National Laboratory; M Chan, C Chang, V Crespi, J Zhu, J Robinson, The Pennsylvania State University	
2:50pm	Talk continues.	
2:55pm	Talk continues.	
3:00pm	PCSI-1WeA-13 Tracking Defects through Ultra-Thin Layered Complex Oxides,	
	B.A. Noesges, The Ohio State University; J Lee, C Eom, University of Wisconsin-Madison; L Brillson, The Ohio State University	
3:05pm	Coffee Break & Poster Viewing	
3:10pm	Coffee Break & Poster Viewing	
3:15pm	Coffee Break & Poster Viewing	
3:20pm	Coffee Break & Poster Viewing	
3:25pm	Coffee Break & Poster Viewing	
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	INVITED: PCSI-2WeA-28 Hexagonal Boron Nitride for Quantum and Nonlinear	PCSI
	Optics, Alexander Solntsev, I Aharonovich, University of Technology Sydney, Australia	Session PCSI-2WeA
4:20pm	Invited talk continues.	Applications of 2D Defects and Interfaces
4:25pm	Invited talk continues.	Moderator: Ania Bleszynski Jayich, University of
4:30pm	Invited talk continues.	California, Santa Barabara
4:35pm	Invited talk continues.	
4:40pm	Invited talk continues.	
4:45pm	PCSI-2WeA-34 Detection of Thermodynamic "Valley Noise" in Monolayer Semiconductors: Access to Intrinsic Valley Relaxation Timescales, <i>Mateusz Goryca</i> , National High Magnetic Field Laboratory; <i>N Wilson</i> , University of Washington; <i>P Dey</i> , National High Magnetic Field Laboratory; <i>X Xu</i> , University of Washington; <i>S Crooker</i> , National High Magnetic Field Laboratory	
4:50pm	Talk continues.	
4:55pm	Talk continues.	
5:00pm	INVITED: PCSI-2WeA-37 The Electronic Structure of 2D Materials, <i>Justin Wells</i> , Norwegian University of Science and Technology, Norway	
5:05pm	Invited talk continues.	
5:10pm	Invited talk continues.	
5:15pm	Invited talk continues.	
5:20pm	Invited talk continues.	
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Special Events Thursday

Special Events Thursday

7:30 AM Continental Breakfast/Ballroom North

9:55 AM Coffee Break and Poster Viewing/Ballroom North

Thursday Morning, January 17, 2019

	PCSI Room Ballroom South - Session PCSI-ThM		
	Hybrid and Mixed-Dimensional Interfaces II Moderator: Marina Leite, University of Maryland		
8:30am	INVITED: PCSI-ThM-1 Excitons and Exciton Confinement in Organic Heterojunctions, Stephen Forrest, University of Michigan		
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 talk continues.		
9:05am	Invited talk continues.		
9:10am	PCSI-ThM-9 Panel Discussion II - Forrest, Leite, Ertekin,		
	Test mini 51 direct bisedssion in Forrest, Erick, Erickin,		
9:15am	Talk continues.		
9:20am	Talk continues.		
9:25am	Talk continues.		
9:30am	Talk continues.		
9:35am	Talk continues.		
9:40am	Talk continues.		
9:45am	Talk continues.		
9:50am	Talk continues.		
9:55am	Talk continues.		

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