

Sunday Afternoon, January 19, 2020

Room Canyon/Sugarloaf		
2:30pm	PCSI-47 Opening Remarks	PCSI-1SuA - 2D Heterostructure Design Moderator: Edward Yu, The University of Texas at Austin
2:35pm	INVITED: PCSI-1SuA2 Optical Properties of Semiconducting Moiré Crystals, <i>Xiaoqin Elaine Li</i> , Univ of Texas at Austin	
2:40pm	Invited talk continues.	
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3:15pm	INVITED: PCSI-1SuA10 Berryogenesis: Spontaneous Out-of-Equilibrium Plasmonic Magnetism, <i>Justin Song</i> , Nanyang Technological University Singapore, Singapore	
3:20pm	Invited talk continues.	
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3:55pm	UPGRADED: PCSI-1SuA18 Investigation of Graphene/Ge(110) Interface, <i>Miriam Galbiati</i> , Technical University of Denmark, Denmark	
4:00pm	Upgraded talk continues.	
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4:15pm	Coffee Break and Poster Setup (Flagstaff/Trailridge Room)	
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4:30pm	UPGRADED: PCSI-2SuA25 Epitaxial Growth and Electronic Characterization of GdSb, <i>Hadass Inbar</i> , <i>S. Chatterjee</i> , <i>M. Pendharkar</i> , <i>Y. Chang</i> , <i>M. Bocheff</i> , <i>T. Guo</i> , <i>T. Brown-Heft</i> , University of California, Santa Barbara; <i>A. Fedorov</i> , Lawrence Livermore National Laboratory; <i>D. Read</i> , Cardiff University; <i>C.J. Palmstrom</i> , University of California, Santa Barbara	PCSI-2SuA - Epitaxial Growth of Quantum Materials and Structures Moderator: Seung Sae Hong, Stanford University
4:35pm	Upgraded talk continues.	
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4:50pm	PCSI-2SuA29 MBE Growth of Zn _x Cd _{1-x} Te on Cd ₃ As ₂ , <i>Anthony Rice</i> , <i>K. Alberi</i> , National Renewable Energy Laboratory	
4:55pm	PCSI-2SuA30 Interfaces and Growth of NbTiN-AlN Heterostructures on Sapphire as Epitaxial Josephson Junctions, <i>Chris Richardson</i> , <i>A. Thomas</i> , <i>A. Alexander</i> , <i>C. Weddle</i> , Laboratory for Physical Sciences; <i>B. Arey</i> , <i>M. Olszta</i> , PNNL	
5:00pm	PCSI-2SuA31 Growth of AlN Barriers in Al/AlN/Al SIS Josephson Junctions by Low Temperature Atomic Layer Epitaxy, <i>Charles R. Eddy, Jr.</i> , U.S. Naval Research Laboratory; <i>D.J. Pennachio</i> , <i>J.S. Lee</i> , <i>A. McFadden</i> , University of California, Santa Barbara; <i>S.G. Rosenberg</i> , U.S. Naval Research Laboratory; <i>Y. Chang</i> , <i>C.J. Palmstrom</i> , University of California, Santa Barbara	
5:05pm	Poster Setup (Flagstaff/Trailridge Room)	
6:00pm	Welcome Reception (Century Room)	

Sunday Evening, January 19, 2020

Room Canyon/Sugarloaf	
7:30pm	<p>INVITED: PSCI-SuE1 Theory of Single Photon Detection by a Photoreceptive Molecule and a Quantum Coherent Spin Center, <i>N. Harmon</i>, University of Evansville; <i>Michael Flatté</i>, University of Iowa</p>
7:35pm	Invited talk continues.
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8:10pm	<p>INVITED: PSCI-SuE9 From Dark Matter Detection to Artificial Intelligence: Uses for Superconducting Nanowire Single Photon Detectors, <i>Sae Woo Nam</i>, National Institute of Standards and Technology, USA</p>
8:15pm	Invited talk continues.
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PSCI-SuE - Single Photon Detectors

Moderator: Christopher Palmstrom, University of California, Santa Barbara

Monday Morning, January 20, 2020

Room Canyon/Sugarloaf	
8:30am	INVITED: PCSI-1MoM1 MOCVD Epitaxy and Doping for β -Ga ₂ O ₃ and (Al _x Ga _{1-x}) ₂ O ₃ , Hongping Zhao , The Ohio State University
8:35am	Invited talk continues.
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9:15am	PCSI-1MoM10 Growth and Structures of Metal Dopant-Ceria Mixed Oxide Interfaces, <i>E. Ginting, L. Du, Jing Zhou</i> , University of Wyoming
9:20am	INVITED: PCSI-1MoM11 Freestanding Crystalline Oxide Membranes and Heterostructures, Seung Sae Hong , Stanford University
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10:00am	PCSI-1MoM19 Effects of Annealing on Electronic Defects in β -Ga ₂ O ₃ Revealed by Linearly-Polarized Photoluminescence (LPPL), <i>R. Sun, Y.K. Ooi, P. Ranga</i> , University of Utah; <i>M. Saleh, K.G. Lynn</i> , Washington State University; <i>S. Krishnamoorthy, Mike A. Scarpulla</i> , University of Utah
10:05am	Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)
10:10am	
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11:00am	INVITED: PCSI-2MoM31 Hybrid Perovskite-Based High Energy Photon Detectors, Wanyi Nie , Los Alamos National Laboratory
11:05am	Invited talk continues.
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11:45am	PCSI-2MoM40 Arrangement and Electronic Properties of Cobalt Phthalocyanine Molecules on B-Si(111)- $\sqrt{3} \times \sqrt{3} R 30^\circ$, Susi Lindner, M. Franz, M. Kubicki, S. Appelfeller, M. Dähne, H. Eisele , Technische Universität Berlin, Germany
11:50am	PCSI-2MoM41 Amino-Acids Detection with Modulation Doped and Surface Nanoengineered GaAs Schottky Diodes, <i>T. Alkhidir, M. Abi Jaoude</i> , KUST, United Arab Emirates; <i>D. Gater</i> , University College London, United Kingdom; <i>C. Alpha</i> , Cornell University; Abdel Isakovic , Colgate University
11:55am	PCSI-2MoM42 Carrier Collection and Transport at Interface of Lead-Free Halide Perovskites (FA,MA)SnI ₃ Solar Cells, William Jo , Ewha Womans University, Republic of Korea
12:00pm	Lunch (Century/Millennium Room) and Poster Viewing (Flagstaff/Trailridge Room)

PCSI-1MoM - Oxides

Moderator: Tohru Honda, Kogakuin University

PCSI-2MoM - Hybrid Materials

Moderator: Joseph Berry, National Renewable Energy Laboratory

Monday Afternoon, January 20, 2020

Room Canyon/Sugarloaf		
2:00pm	INVITED: PCSI-1MoA1 Engineering Active and Stable Semiconductor Photoelectrodes by Atomic Layer Deposition, <i>Ian Sharp</i> , Walter Schottky Institut/Technische Universität München, Germany Invited talk continues.	PCSI-1MoA - Catalysis/Nanowires Moderators: Charles R. Eddy, Jr., U.S. Naval Research Laboratory, Hongping Zhao, The Ohio State University
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2:40pm	PCSI-1MoA9 Surface States Induced Catalyst-free CO Sensing at GaN and AlGa _N /Ga _N Heterostructures, <i>Monu Mishra</i> , Indian Institute of Technology Delhi; <i>G. Gupta</i> , National Physical Laboratory, India	
2:45pm	PCSI-1MoA10 Cu ₂ O Nanoparticles for Enhancing Gas Phase Photocatalysis over Metal Oxide Semiconductor Nanostructures, <i>Hikaru Masegi</i> , Keio University, Japan	
2:50pm	PCSI-1MoA11 UPGRADED: Self-Selective Formation of 1D and 2D GaBi Structures on GaAs, <i>Y. Liu</i> , Lund University, Sweden; <i>S. Benter, J. Knutsson, S. Lehmann</i> , Lund University; <i>E. Young, N. Wilson, C.J. Palmstrom</i> , University of California, Santa Barbara; <i>A. Mikkelsen, Rainer Timm</i> , Lund University, Sweden	
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3:05pm	Upgraded talk continues.	
3:10pm	PCSI-1MoA15 Iuliacumite: A Novel Two-Dimensional Chemical Short Range Order in a Wurtzite Single Monolayer InAs _{1-x} Sb _x Shell on InAs Nanowires, <i>Michael Schnedler</i> , Forschungszentrum Jülich, Germany; <i>T. Xu, I. Lefebvre, J.-P. Nys</i> , Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France; <i>S. Plissard</i> , Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, Germany; <i>M. Berthe</i> , Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France; <i>H. Eisele</i> , Technische Universität Berlin, Germany; <i>R. Dunin-Borkowski, P. Ebert</i> , Forschungszentrum Jülich, Germany; <i>B. Grandidier</i> , Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France	
3:15pm	Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)	
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4:20pm	INVITED: PCSI-2MoA29 Control of Spin-Orbit Coupling in Single Acceptor States in Silicon, <i>Sven Rogge</i> , University of New South Wales, Australia	PCSI-2MoA - Dopants in Semiconductors Moderator: John Robertson, University of Cambridge
4:25pm		
4:30pm	Invited talk continues.	
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Monday Afternoon, January 20, 2020

5:00pm	<p>PCSI-2MoA37 UPGRADED: Low-Temperature Epitaxial Silicon Growth and Confinement of Delta Doped Si:P Nanostructures, Scott Schmucker, E. Anderson, J. Lucero, E. Bussmann, P. Lu, A. Katzenmeyer, T. Luk, T. Beechem, L. Tracy, T.-M. Lu, A. Grine, D. Ward, D. Campbell, P. Gamache, M. Gunter, S. Misra, Sandia National Laboratories</p> <p>Upgraded talk continues.</p>
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5:50pm	<p>INVITED: PCSI-2MoA41 The Electronic Bandstructure of Atomically Sharp Dopant Structures in Silicon, Justin Wells, Norwegian University of Science and Technology, Norway</p> <p>Invited talk continues.</p>
5:55pm	
6:00pm	
	<p>Dinner (Century/Millennium Room)</p>

Monday Evening, January 20, 2020

Room Canyon/Sugarloaf	
7:30pm	INVITED: PCSI-MoE1 Fluctuating High Temperature Superconductivity in Monolayer FeSe / SrTiO ₃ , <i>Kyle Shen, B. Faeth, S. Yang, D. Schlom</i> , Cornell University
7:35pm	Invited talk continues.
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8:10pm	PCSI-MoE9 Advances and Possibilities of the Materials Innovation Platform with Examples from Spin-ARPES, <i>Daniel Beaton</i> , Scienta Omicron Inc.
8:15pm	INVITED: PCSI-MoE10 Superconductivity at Surfaces Studied by Scanning Tunneling Microscopy, <i>Yukio Hasegawa</i> , The University of Tokyo, Japan
8:20pm	Invited talk continues.
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PCSI-MoE - Superconductivity I

Moderator: David Pappas, NIST

Tuesday Morning, January 21, 2020

Room Canyon/Sugarloaf	
8:30am	INVITED: PCSI-1TuM1 Quantum Microscopy of Nanoscale Materials and Devices, <i>Christian Degen</i> , ETH Zurich, Switzerland
8:35am	Invited talk continues.
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9:15am	Upgraded talk continues.
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9:30am	PCSI-1TuM13 Room Temperature Ferromagnetic Monolayer MnGaN-2D Investigated by Spin-polarized Scanning Tunneling Microscopy/ Spectroscopy and First-principles Density Functional Theory, <i>Y. Ma, T. Erickson</i> , Nanoscale & Quantum Phenomena Institute; <i>K.Y. Meng, F.-Y. Yang</i> , The Ohio State University; <i>D. Hunt, A. Barral, V. Ferrari</i> , CAC-CNEA, Argentina; <i>A.R. Smith</i> , Nanoscale & Quantum Phenomena Institute
9:35am	UPGRADED: PCSI-1TuM14 Local Exchange Resonance in DC Magnetoresistance of Spin-Polarized Current Through a Dopant, <i>Stephen McMillan</i> , University of Iowa; <i>N. Harmon</i> , University of Evansville; <i>M. Flatté</i> , University of Iowa
9:40am	Upgraded talk continues.
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9:55am	PCSI-1TuM18 Room Temperature Ferromagnetism in GaSb Thin Films Doped with Mn, <i>A.O. Pulzara Mora, Camilo Andres Pulzara Mora</i> , Universidad Nacional de Colombia, Colombia
10:00am	PCSI-1TuM19 Magnetotransport Studies in Hybrid 2D/0D Nanostructures, <i>Ethel Perez-Hoyos, Y. Luo, A. Dehankar, J. Xu, D. Pharis, J. Winter, R. Kawakami, E. Johnston-Halperin</i> , The Ohio State University
10:05am	Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)
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11:05am	Invited talk continues.
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11:45am	Upgraded talk continues.
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12:00pm	Free Afternoon

PCSI-1TuM - Magnetism

Moderator: Michael Flatté, University of Iowa

PCSI-2TuM - Superconductivity II

Moderator: Kyle Shen, Cornell University

Tuesday Evening, January 21, 2020

Room Canyon/Sugarloaf	
7:00pm	<p>INVITED: PCSI-TuE1 Progress in Hybrid Perovskite Photovoltaics and Optoelectronics, <i>Joseph Berry</i>, National Renewable Energy Laboratory</p> <p>Invited talk continues.</p>
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7:40pm	<p>INVITED: PCSI-TuE9 On the Path Towards Tandem Junction Nanowire Based Solar Cells, <i>Magnus Borgström</i>, Lund University, Sweden</p> <p>Invited talk continues.</p>
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PCSI-TuE - The Future of PV

Moderator: Kirstin Alberi, National Renewable Energy Laboratory

Wednesday Morning, January 22, 2020

Room Canyon/Sugarloaf		
8:30am	INVITED: PCSI-1WeM1 Metals at the Atomic Limit, <i>Joshua Robinson</i> , Penn State University	PCSI-1WeM - Optical Properties of 2D Materials Moderator: Wanyi Nie, Los Alamos National Laboratory
8:35am	Invited talk continues.	
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9:10am	PCSI-1WeM9 Tuning the Spontaneous Emission of Monolayer Wse ₂ by Optical Environment Control – Cavity Coupling and Substrate Manipulation, <i>Hyunseung Lee</i> , Ajou University, Republic of Korea	
9:15am	PCSI-1WeM10 First Principles Study on Optical Properties of Monolayer Bismuthene under an Electric Field, <i>Wei-Chieh Liu, L.L. Xu, M.C. Lin</i> , Hanyang University, South Korea; <i>T.C. Leung, H.Y. Hsu</i> , National Taipei University of Technology, Republic of China	
9:20am	PCSI-1WeM11 Formation of Coherent Phase Domain Heterojunctions in Single Layer MoS ₂ on Au(111), <i>Fanglue Wu, Z. Liu</i> , Texas A&M University; <i>M. Chandross</i> , Sandia National Laboratories; <i>Q. Moore</i> , Texas A&M University; <i>N. Argibay, J. Curry</i> , Sandia National Laboratories; <i>J. Batteas</i> , Texas A&M University	
9:25am	UPGRADED: PCSI-1WeM12 Effects of Electromechanical Coupling in Locally Strained Monolayer MoS ₂ , <i>Alex De Palma, G. Cossio, K. Jones, J. Quan</i> , The University of Texas at Austin; <i>X.E. Li</i> , Univ of Texas at Austin; <i>E. Yu</i> , The University of Texas at Austin	
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9:35am		Upgraded talk continues.
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9:45am	Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)	
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11:00am	INVITED: PCSI-2WeM31 Neuromorphic Computing with the Redox Transistor, <i>Alec Talin</i> , Sandia National Laboratories	PCSI-2WeM - Material Modification and Self Assembly Moderator: Sven Rogge, UNSW
11:05am	Invited talk continues.	
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Wednesday Morning, January 22, 2020

11:40am	PCSI-2WeM39 Kinetically-Driven Assembly of TaS ₂ -SnS Heterostructures with Flexible Stacking Architectures, Dennice Roberts , National Renewable Energy Laboratory; <i>D. Bardgett</i> , University of Oregon; <i>B. Gorman</i> , Colorado School of Mines; <i>J. Perkins</i> , <i>A. Zakutayev</i> , <i>S. Bauers</i> , National Renewable Energy Laboratory	
11:45am	PCSI-2WeM40 Globally Aligned Single-Wall Carbon Nanotube Films through Electrostatic Ordering, Joshua Walker , University of Wyoming; <i>J. Fagan</i> , <i>A. Biacchi</i> , National Institute of Standards and Technology; <i>V. Kuehl</i> , University of Wyoming; <i>T. Searles</i> , Howard University; <i>A. Hight Walker</i> , National Institute of Standards and Technology; <i>W. Rice</i> , University of Wyoming	
11:50am	PCSI-2WeM41 Defining Insulating Regions on TiO ₂ Thin Films by Laser Heating, <i>S. Ahmed</i> , <i>J. Ritter</i> , Matt McCluskey , Washington State University	
11:55am	PCSI-2WeM42 Towards Mask Free Direct Write fabrication of Micro- and Nanoscale Architectures on Different Substrates via Aqueous Ink Precursors and CVD Synthesis, Irma Kuljanishvili , <i>D. Alameri</i> , <i>D. Karbach</i> , <i>R. Dong</i> , <i>L. Moore</i> , Saint Louis University; <i>R. Divan</i> , <i>Y. Liu</i> , Argonne National Laboratory	
12:00pm	Lunch (Century/Millennium Room) and Poster Viewing (Flagstaff/Trailridge Room)	

Wednesday Afternoon, January 22, 2020

Room Canyon/Sugarloaf		
2:00pm	<p>INVITED: PCSI-1WeA1 Towards Fermi Level De-pinning at Contacts, <i>John Robertson</i>, Cambridge University, UK; <i>Y. Guo</i>, Wuhan University, China; <i>Z. Zhang</i>, Cambridge University, UK</p> <p>Invited talk continues.</p>	<p>PCSI-1WeA - Devices and Contacts</p> <p>Moderator: Alex Demkov, The University of Texas</p>
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2:40pm	<p>PCSI-1WeA9 Observation, Characterization, and Mitigation of the Internal p-n Junction in Pyrite FeS₂, a Potential Low-cost Solar Absorber, <i>Bryan Voigt, W. Moore, J. Walter, B. Das, M. Maiti, M. Manno</i>, University of Minnesota; <i>E. Aydil</i>, New York University; <i>C. Leighton</i>, University of Minnesota</p>	
2:45pm	<p>UPGRADED: PCSI-1WeA10 Photo-Driven Dipole Reordering: Key to Carrier Separation in Metalorganic Halide Perovskites, <i>Philipp Ebert</i>, Forschungszentrum Jülich, Germany; <i>H.-C. Hsu</i>, National Taiwan University, Republic of China; <i>B.-C. Huang</i>, Academia Sinica, Republic of China; <i>S.-C. Chin</i>, National Taiwan University, Republic of China; <i>C.-R. Hsing, D.-L. Nguyen</i>, Academia Sinica, Republic of China; <i>M. Schnedler</i>, Forschungszentrum Jülich, Germany; <i>R. Sankar</i>, Academia Sinica, Republic of China; <i>R. Dunin-Borkowski</i>, Forschungszentrum Jülich, Germany; <i>C.-M. Wei</i>, Academia Sinica, Republic of China; <i>C.-W. Chen, Y.-P. Chiu</i>, National Taiwan University, Republic of China</p> <p>Upgraded talk continues.</p>	
2:50pm		
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3:05pm	<p>PCSI-1WeA14 First Principles Study on Electronic Properties of Graphene Nanostructures for High Current Density Cathode, <i>Nan Zhao, L.L. Xu, M.C. Lin</i>, Hanyang University, South Korea; <i>T.C. Leung</i>, National Chung Cheng University, Republic of China; <i>H.Y. Hsu</i>, National Taipei University of Technology, Republic of China</p>	
3:10pm	<p>PCSI-1WeA15 Band Offset Modulation in Si-EuO Heterostructures via Controlled Interface Formation, <i>W. Li, A. Posadas</i>, The University of Texas at Austin; <i>Alex Demkov</i>, The University of Texas</p>	
3:15pm	<p>PCSI-1WeA16 First Principles Study on Electronic Properties of Magnetite for Spin Polarized Emission under an Electric Field, <i>Liang liang Xu, N. Zhao, M.C. Lin</i>, Hanyang University, South Korea; <i>T.C. Leung</i>, National Chung Cheng University, Republic of China; <i>H.Y. Hsu</i>, National Taipei University of Technology, Republic of China</p>	
3:20pm	<p>PCSI-1WeA17 Work Functions of Alkali and Alkaline Earth Metal Surfaces under Electric Fields based on First-Principles Calculations, <i>Y. Wang, L.L. Xu, Ming-Chieh Lin</i>, Hanyang University, South Korea; <i>T.C. Leung</i>, National Chung Cheng University, Republic of China; <i>H.Y. Hsu</i>, National Taipei University of Technology, Republic of China</p>	
3:25pm	<p>Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)</p>	
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Wednesday Afternoon, January 22, 2020

4:30pm	INVITED: PCSI-2WeA31 Nitrogen Doping of Gallium Oxide by Ion Implantation and its Application to Vertical Transistors, Masataka Higashiwaki , National Institute of Information and Communications Technology, Japan; M.H. Wong , National Institute of Information and Communications Technology; K. Goto , H. Murakami , Y. Kumagai , Tokyo University of Agriculture and Technology, Japan Invited talk continues.	PCSI-2WeA - Synthesis of Materials for Devices Moderator: Alec Talin, Sandia National Laboratories
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5:10pm	PCSI-2WeA39 Studying the Nucleation of GaP on v-Grooved Si for III-V/Si Device Integration, Emily Warren , National Renewable Energy Laboratory; T. Saenz , Colorado School of Mines; A. Norman , National Renewable Energy Laboratory; J. Zimmerman , Colorado School of Mines	
5:15pm	PCSI-2WeA40 Improving Heterointerfaces in Rapidly Grown III-V Electronic Devices using Dynamic Hydride Vapor Phase Epitaxy (D-HVPE), Dennice Roberts , J. Simon , K. Schulte , A. Ptak , National Renewable Energy Laboratory	
5:20pm	PCSI-2WeA41 Real-Time Optical Monitoring of the Epitaxial Growth of Zincblende Semiconductors, Alfonso Lastras-Martinez , Universidad Autónoma de San Luis Potosí, México	
5:25pm	PCSI-2WeA42 Pulsed Laser Deposition of Epitaxial Sr ₃ Al ₂ O ₆ as a Water-Soluble Sacrificial Layer for GaAs Deposition, Imran Khan , B. McMahan , A. Norman , A. Zakutayev , National Renewable Energy Laboratory	
5:30pm	PCSI-2WeA43 On the Theory of the Energetic Spectrum of Vicinal Superlattices: The Role of Crystal Potential, Victor Petrov , Russian Academy of Sciences, Russian Federation	
5:35pm	PCSI-2WeA44 Epitaxial Relationship of Cu ₃ N Grown on YSZ(001) Substrate by Mist CVD Method, Nao Wakabayashi , Kogakuin University, Japan	
5:40pm	UPGRADED: PCSI-2WeA45 Halogen Surface Chemistries for Atomically Precise Manufacturing on Si(100), Kevin Dwyer , M. Dreyer , K. Gaskell , University of Maryland; R. Butera , Laboratory for Physical Sciences Upgraded talk continues.	
5:45pm		
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6:00pm	PCSI-2WeA49 Novel Growth Mechanisms in van der Waals Epitaxy: 3D Morphologies of Bi ₂ Se ₃ , Theresa Ginley , S. Law , University of Delaware	
6:30pm	Conference Banquet (Century/Millennium Room)	

Thursday Morning, January 23, 2020

Room Canyon/Sugarloaf	
8:30am	INVITED: PCSI-1ThM1 Electron Transport in Strain-Engineered Graphene, <i>Nadya Mason</i> , University of Illinois at Urbana Champaign
8:35am	Invited talk continues.
8:40am	
8:45am	
8:50am	
8:55am	
9:00am	
9:05am	
9:10am	UPGRADED: PCSI-1ThM9 Revealing Exciton Masses and Dielectric Properties of Monolayer Semiconductors with High Magnetic Fields, <i>Mateusz Goryca, J. Li, A.V. Stier</i> , Los Alamos National Laboratory; <i>T. Taniguchi, K. Watanabe</i> , National Institute for Materials Science, Japan; <i>E. Courtade, S. Shree, C. Robert, B. Urbaszek, X. Marie</i> , Universite de Toulouse, INSA-CNRS-UPS, LPCNO, France; <i>S.A. Crooker</i> , Los Alamos National Laboratory
9:15am	Upgraded talk continues.
9:20am	
9:25am	
9:30am	PCSI-1ThM13 Optical Determination of Ice-Induced Interfacial Strain on Single-Layer Graphene, <i>Subash Kattel, J. Murphy, S. Pasco, J. Ackerman, V. Alvarado, W.D. Rice</i> , University of Wyoming
9:35am	UPGRADED: PCSI-1ThM14 Electron Pairing by Remote-Phonon Scattering in Oxide-Supported Graphene, <i>D. Shin</i> , The University of Texas; <i>M. Fischetti</i> , The University of Texas at Dallas; <i>Alex Demkov</i> , The University of Texas
9:40am	Upgraded talk continues.
9:45am	
9:50am	
9:55am	
10:00am	INVITED: PCSI-2ThM31 Modeling of Interfaces in All-Solid-State Li-ion Batteries, <i>Yue Qi</i> , Michigan State University
10:05am	Invited talk continues.
10:10am	
10:15am	
10:20am	
10:25am	
10:30am	
10:35am	
10:40am	Conference Ends

PCSI-1ThM - 2D Materials - Strain and Heterostructures

Moderator: Joshua Robinson, Penn State University

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Paper PCSI-1SuA2, Room Canyon/Sugarloaf, 2:35 PM

Authors: *Xiaoqin Elaine Li*, Univ of Texas at Austin

Supplemental Documents

Supplemental Document placeholder for Abstract 299, Paper PCSI-1SuA10 (page 1 of 1)

Paper PCSI-1SuA10, Room Canyon/Sugarloaf, 3:15 PM

Authors: *Justin Song*, Nanyang Technological University Singapore, Singapore

Supplemental Documents

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Paper PCSI-1SuA18, Room Canyon/Sugarloaf, 3:55 PM

Authors: *Miriam Galbiati*, Technical University of Denmark, Denmark

Supplemental Documents

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Paper PCSI-2SuA25, Room Canyon/Sugarloaf, 4:30 PM

Authors: **Hadass Inbar**, S. Chatterjee, M. Pendharkar, Y. Chang, M. Bocheff, T. Guo, T. Brown-Heft, University of California, Santa Barbara; A. Fedorov, Lawrence Livermore National Laboratory; D. Read, Cardiff University; C.J. Palmstrom, University of California, Santa Barbara

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Paper PCSI-2SuA29, Room Canyon/Sugarloaf, 4:50 PM

Authors: **Anthony Rice**, *K. Alberi*, National Renewable Energy Laboratory

Supplemental Documents

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Paper PCSI-2SuA30, Room Canyon/Sugarloaf, 4:55 PM

Authors: *Chris Richardson*, *A. Thomas*, *A. Alexander*, *C. Weddle*, Laboratory for Physical Sciences; *B. Arey*, *M. Olszta*, PNNL

Supplemental Documents

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Paper PCSI-2SuA31, Room Canyon/Sugarloaf, 5:00 PM

Authors: **Charles R. Eddy, Jr.**, U.S. Naval Research Laboratory; *D.J. Pennachio, J.S. Lee, A. McFadden*, University of California, Santa Barbara; *S.G. Rosenberg*, U.S. Naval Research Laboratory; *Y. Chang, C.J. Palmstrom*, University of California, Santa Barbara

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Paper PSCI-SuE1, Room Canyon/Sugarloaf, 7:30 PM

Authors: *N. Harmon*, University of Evansville; ***Michael Flatté***, University of Iowa

Supplemental Documents

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Paper PSCI-SuE9, Room Canyon/Sugarloaf, 8:10 PM

Authors: **Sae Woo Nam**, National Institute of Standards and Technology, UUSA

Supplemental Documents

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Paper PCSI-1MoM1, Room Canyon/Sugarloaf, 8:30 AM

Authors: *Hongping Zhao*, The Ohio State University

Supplemental Documents

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Paper PCSI-1MoM9, Room Canyon/Sugarloaf, 9:10 AM

Authors: *C. Schulze, R. Zielinski, J. Hofmann, C. Bruckmann*, Technische Universität Berlin, Germany; *Z. Galazka*, Leibniz-Institut für Kristallzüchtung Berlin, Germany; **Holger Eisele**, Technische Universität Berlin, Germany

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Paper PCSI-1MoM10, Room Canyon/Sugarloaf, 9:15 AM

Authors: *E. Ginting, L. Du, Jing Zhou*, University of Wyoming

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Paper PCSI-1MoM11, Room Canyon/Sugarloaf, 9:20 AM

Authors: *Seung Sae Hong*, Stanford University

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Paper PCSI-1MoM19, Room Canyon/Sugarloaf, 10:00 AM

Authors: *R. Sun*, *Y.K. Ooi*, *P. Ranga*, University of Utah; *M. Saleh*, *K.G. Lynn*, Washington State University; *S. Krishnamoorthy*, ***Mike A. Scarpulla***, University of Utah

Supplemental Documents

Supplemental Document placeholder for Abstract 311, Paper PCSI-2MoM31 (page 1 of 1)

Paper PCSI-2MoM31, Room Canyon/Sugarloaf, 11:00 AM

Authors: **Wanyi Nie**, Los Alamos National Laboratory

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Paper PCSI-2MoM39, Room Canyon/Sugarloaf, 11:40 AM

Authors: *Hsinhan Tsai*, *W. Nie*, Los Alamos National Laboratory

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Paper PCSI-2MoM40, Room Canyon/Sugarloaf, 11:45 AM

Authors: *Susi Lindner, M. Franz, M. Kubicki, S. Appelfeller, M. Dähne, H. Eisele*, Technische Universität Berlin, Germany

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Paper PCSI-2MoM41, Room Canyon/Sugarloaf, 11:50 AM

Authors: *T. Alkhidir*, *M. Abi Jaoude*, KUST, United Arab Emirates; *D. Gater*, University College London, United Kingdom; *C. Alpha*, Cornell University; ***Abdel Isakovic***, Colgate University

Supplemental Documents

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Paper PCSI-2MoM42, Room Canyon/Sugarloaf, 11:55 AM

Authors: *William Jo*, Ewha Womans University, Republic of Korea

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Paper PCSI-1MoA1, Room Canyon/Sugarloaf, 2:00 PM

Authors: *Ian Sharp*, Walter Schottky Institut/Technische Universität München, Germany

Supplemental Documents

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Paper PCSI-1MoA9, Room Canyon/Sugarloaf, 2:40 PM

Authors: **Monu Mishra**, Indian Institute of Technology Delhi; *G. Gupta*, National Physical Laboratory, India

Supplemental Documents

Supplemental Document placeholder for Abstract 296, Paper PCSI-1MoA10 (page 1 of 1)
Paper PCSI-1MoA10, Room Canyon/Sugarloaf, 2:45 PM
Authors: *Hikaru Masegi*, Keio University, Japan

Supplemental Documents

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Paper PCSI-1MoA12, Room Canyon/Sugarloaf, 2:55 PM

Authors: *Y. Liu*, Lund University, Sweden; *S. Benter*, *J. Knutsson*, *S. Lehmann*, Lund University; *E. Young*, *N. Wilson*, *C.J. Palmstrom*, University of California, Santa Barbara; *A. Mikkelsen*, ***Rainer Timm***, Lund University, Sweden

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Paper PCSI-1MoA16, Room Canyon/Sugarloaf, 3:15 PM

Authors: *Michael Schnedler*, Forschungszentrum Jülich, Germany; *T. Xu, I. Lefebvre, J.-P. Nys*, Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France; *S. Plissard*, Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, Germany; *M. Berthe*, Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France; *H. Eisele*, Technische Universität Berlin, Germany; *R. Dunin-Borkowski, P. Ebert*, Forschungszentrum Jülich, Germany; *B. Grandier*, Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France

Supplemental Documents

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Paper PCSI-2MoA29, Room Canyon/Sugarloaf, 4:20 PM

Authors: *Sven Rogge*, University of New South Wales, Australia

Supplemental Documents

Supplemental Document placeholder for Abstract 306, Paper PCSI-2MoA37 (page 1 of 1)
Paper PCSI-2MoA37, Room Canyon/Sugarloaf, 5:00 PM

Authors: **Scott Schmucker**, E. Anderson, J. Lucero, E. Bussmann, P. Lu, A. Katzenmeyer, T. Luk, T. Beechem, L. Tracy, T.-M. Lu, A. Grine, D. Ward, D. Campbell, P. Gamache, M. Gunter, S. Misra, Sandia National Laboratories

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Supplemental Document placeholder for Abstract 302, Paper PCSI-2MoA41 (page 1 of 1)

Paper PCSI-2MoA41, Room Canyon/Sugarloaf, 5:20 PM

Authors: *Justin Wells*, Norwegian University of Science and Technology, Norway

Supplemental Documents

Supplemental Document placeholder for Abstract 292, Paper PCSI-MoE1 (page 1 of 1)

Paper PCSI-MoE1, Room Canyon/Sugarloaf, 7:30 PM

Authors: *Kyle Shen*, *B. Faeth*, *S. Yang*, *D. Schlom*, Cornell University

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Supplemental Document placeholder for Abstract 349, Paper PCSI-MoE9 (page 1 of 1)

Paper PCSI-MoE9, Room Canyon/Sugarloaf, 8:10 PM

Authors: **Daniel Beaton**, Scienta Omicron Inc.

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Supplemental Document placeholder for Abstract 321, Paper PCSI-MoE10 (page 1 of 1)

Paper PCSI-MoE10, Room Canyon/Sugarloaf, 8:15 PM

Authors: *Yukio Hasegawa*, The University of Tokyo, Japan

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Supplemental Document placeholder for Abstract 303, Paper PCSI-1TuM9 (page 1 of 1)

Paper PCSI-1TuM9, Room Canyon/Sugarloaf, 9:10 AM

Authors: *Joolee Son*, Ajou University, Republic of Korea; *K.H. Kim*, Pohang University of Science and Technology, Republic of Korea; *Y.H. Ahn*, Ajou University, Republic of Korea; *H.W. Lee*, Pohang University of Science and Technology, Republic of Korea; *J. Lee*, Ajou University, Republic of Korea

Supplemental Documents

Supplemental Document placeholder for Abstract 357, Paper PCSI-1TuM13 (page 1 of 3)

Paper PCSI-1TuM13, Room Canyon/Sugarloaf, 9:30 AM

Authors: *Y. Ma, T. Erickson*, Nanoscale & Quantum Phenomena Institute; *K.Y. Meng, F.-Y. Yang*, The Ohio State University; *D. Hunt, A. Barral, V. Ferrari*, CAC-CNEA, Argentina; **A.R. Smith**, Nanoscale & Quantum Phenomena Institute

Supplemental Documents

Supplemental Document placeholder for Abstract 340, Paper PCSI-1TuM14 (page 1 of 1)

Paper PCSI-1TuM14, Room Canyon/Sugarloaf, 9:35 AM

Authors: **Stephen McMillan**, University of Iowa; *N. Harmon*, University of Evansville; *M. Flatté*, University of Iowa

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Supplemental Document placeholder for Abstract 320, Paper PCSI-1TuM18 (page 1 of 2)

Paper PCSI-1TuM18, Room Canyon/Sugarloaf, 9:55 AM

Authors: *A.O. Pulzara Mora*, **Camilo Andres Pulzara Mora**, Universidad Nacional de Colombia, Colombia

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Supplemental Document placeholder for Abstract 293, Paper PCSI-1TuM19 (page 1 of 1)

Paper PCSI-1TuM19, Room Canyon/Sugarloaf, 10:00 AM

Authors: *Ethel Perez-Hoyos*, *Y. Luo*, *A. Dehankar*, *J. Xu*, *D. Pharis*, *J. Winter*, *R. Kawakami*, *E. Johnston-Halperin*, The Ohio State University

Supplemental Documents

Supplemental Document placeholder for Abstract 330, Paper PCSI-2TuM31 (page 1 of 1)

Paper PCSI-2TuM31, Room Canyon/Sugarloaf, 11:00 AM

Authors: *J. Long*, *H.S. Ku*, *X. Wu*, NIST; *R. Lake*, BlueFors; **David Pappas**, NIST

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Supplemental Document placeholder for Abstract 325, Paper PCSI-2TuM39 (page 1 of 1)

Paper PCSI-2TuM39, Room Canyon/Sugarloaf, 11:40 AM

Authors: **D. Frank Ogletree**, Lawrence Berkeley National Lab; *V. Altoe, X. Liu, A. Minor, S. Cabrini, S. Griffin*, Molecular Foundry, LBNL; *A. Bannerjee*, Lawrence Berkeley National Lab; *J.M. Kiekebaum, I. Siddiqi*, University of California, Berkeley

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Supplemental Document placeholder for Abstract 334, Paper PCSI-TuE1 (page 1 of 1)

Paper PCSI-TuE1, Room Canyon/Sugarloaf, 7:00 PM

Authors: *Joseph Berry*, National Renewable Energy Laboratory

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Supplemental Document placeholder for Abstract 309, Paper PCSI-TuE9 (page 1 of 1)

Paper PCSI-TuE9, Room Canyon/Sugarloaf, 7:40 PM

Authors: *Magnus Borgström*, Lund University, Sweden

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Supplemental Document placeholder for Abstract 285, Paper PCSI-1WeM1 (page 1 of 1)

Paper PCSI-1WeM1, Room Canyon/Sugarloaf, 8:30 AM

Authors: *Joshua Robinson*, Penn State University

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Supplemental Document placeholder for Abstract 308, Paper PCSI-1WeM9 (page 1 of 1)

Paper PCSI-1WeM9, Room Canyon/Sugarloaf, 9:10 AM

Authors: *Hyunseung Lee*, Ajou University, Republic of Korea

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Supplemental Document placeholder for Abstract 326, Paper PCSI-1WeM10 (page 1 of 1)

Paper PCSI-1WeM10, Room Canyon/Sugarloaf, 9:15 AM

Authors: **Wei-Chieh Liu**, L.L. Xu, M.C. Lin, Hanyang University, South Korea; T.C. Leung, H.Y. Hsu, National Taipei University of Technology, Republic of China

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Supplemental Document placeholder for Abstract 352, Paper PCSI-1WeM11 (page 1 of 1)

Paper PCSI-1WeM11, Room Canyon/Sugarloaf, 9:20 AM

Authors: **Fanglue Wu**, Z. Liu, Texas A&M University; M. Chandross, Sandia National Laboratories; Q. Moore, Texas A&M University; N. Argibay, J. Curry, Sandia National Laboratories; J. Batteas, Texas A&M University

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Supplemental Document placeholder for Abstract 332, Paper PCSI-1WeM12 (page 1 of 3)

Paper PCSI-1WeM12, Room Canyon/Sugarloaf, 9:25 AM

Authors: **Alex De Palma**, *G. Cossio*, *K. Jones*, *J. Quan*, The University of Texas at Austin; *X.E. Li*, Univ of Texas at Austin; *E. Yu*, The University of Texas at Austin

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Supplemental Document placeholder for Abstract 305, Paper PCSI-2WeM31 (page 1 of 1)

Paper PCSI-2WeM31, Room Canyon/Sugarloaf, 11:00 AM

Authors: *Alec Talin*, Sandia National Laboratories

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Supplemental Document placeholder for Abstract 318, Paper PCSI-2WeM39 (page 1 of 1)
Paper PCSI-2WeM39, Room Canyon/Sugarloaf, 11:40 AM

Authors: **Dennice Roberts**, National Renewable Energy Laboratory; *D. Bardgett*, University of Oregon; *B. Gorman*, Colorado School of Mines; *J. Perkins*, *A. Zakutayev*, *S. Bauers*, National Renewable Energy Laboratory

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Paper PCSI-2WeM40, Room Canyon/Sugarloaf, 11:45 AM

Authors: **Joshua Walker**, University of Wyoming; *J. Fagan*, *A. Biacchi*, National Institute of Standards and Technology; *V. Kuehl*, University of Wyoming; *T. Searles*, Howard University; *A. Hight Walker*, National Institute of Standards and Technology; *W. Rice*, University of Wyoming

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Supplemental Document placeholder for Abstract 295, Paper PCSI-2WeM41 (page 1 of 1)

Paper PCSI-2WeM41, Room Canyon/Sugarloaf, 11:50 AM

Authors: *S. Ahmed, J. Ritter, **Matt McCluskey***, Washington State University

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Supplemental Document placeholder for Abstract 362, Paper PCSI-2WeM42 (page 1 of 2)

Paper PCSI-2WeM42, Room Canyon/Sugarloaf, 11:55 AM

Authors: *Irma Kuljanishvili*, *D. Alameri*, *D. Karbach*, *R. Dong*, *L. Moore*, Saint Louis University; *R. Divan*, *Y. Liu*, Argonne National Laboratory

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Paper PCSI-1WeA1, Room Canyon/Sugarloaf, 2:00 PM

Authors: *John Robertson*, Cambridge University, UK; *Y. Guo*, Wuhan University, China; *Z. Zhang*, Cambridge University, UK

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Paper PCSI-1WeA9, Room Canyon/Sugarloaf, 2:40 PM

Authors: **Bryan Voigt**, *W. Moore, J. Walter, B. Das, M. Maiti, M. Manno*, University of Minnesota; *E. Aydil*, New York University; *C. Leighton*, University of Minnesota

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Paper PCSI-1WeA10, Room Canyon/Sugarloaf, 2:45 PM

Authors: *Philipp Ebert*, Forschungszentrum Jülich, Germany; *H.-C. Hsu*, National Taiwan University, Republic of China; *B.-C. Huang*, Academia Sinica, Republic of China; *S.-C. Chin*, National Taiwan University, Republic of China; *C.-R. Hsing*, *D.-L. Nguyen*, Academia Sinica, Republic of China; *M. Schnedler*, Forschungszentrum Jülich, Germany; *R. Sankar*, Academia Sinica, Republic of China; *R. Dunin-Borkowski*, Forschungszentrum Jülich, Germany; *C.-M. Wei*, Academia Sinica, Republic of China; *C.-W. Chen*, *Y.-P. Chiu*, National Taiwan University, Republic of China

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Paper PCSI-1WeA15, Room Canyon/Sugarloaf, 3:10 PM

Authors: **Nan Zhao**, *L.L. Xu*, *M.C. Lin*, Hanyang University, South Korea; *T.C. Leung*, National Chung Cheng University, Republic of China; *H.Y. Hsu*, National Taipei University of Technology, Republic of China

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Paper PCSI-1WeA16, Room Canyon/Sugarloaf, 3:15 PM

Authors: *W. Li, A. Posadas*, The University of Texas at Austin; **Alex Demkov**, The University of Texas

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Supplemental Document placeholder for Abstract 301, Paper PCSI-1WeA17 (page 1 of 1)
Paper PCSI-1WeA17, Room Canyon/Sugarloaf, 3:20 PM

Authors: *Liang liang Xu*, *N. Zhao*, *M.C. Lin*, Hanyang University, South Korea; *T.C. Leung*, National Chung Cheng University, Republic of China; *H.Y. Hsu*, National Taipei University of Technology, Republic of China

Supplemental Documents

Supplemental Document placeholder for Abstract 327, Paper PCSI-1WeA18 (page 1 of 1)

Paper PCSI-1WeA18, Room Canyon/Sugarloaf, 3:25 PM

Authors: *Y. Wang*, *L.L. Xu*, ***Ming-Chieh Lin***, Hanyang University, South Korea; *T.C. Leung*, National Chung Cheng University, Republic of China; *H.Y. Hsu*, National Taipei University of Technology, Republic of China

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Paper PCSI-2WeA31, Room Canyon/Sugarloaf, 4:30 PM

Authors: **Masataka Higashiwaki**, National Institute of Information and Communications Technology, Japan; *M.H. Wong*, National Institute of Information and Communications Technology; *K. Goto, H. Murakami, Y. Kumagai*, Tokyo University of Agriculture and Technology, Japan

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Supplemental Document placeholder for Abstract 347, Paper PCSI-2WeA39 (page 1 of 1)
Paper PCSI-2WeA39, Room Canyon/Sugarloaf, 5:10 PM

Authors: *Emily Warren*, National Renewable Energy Laboratory; *T. Saenz*, Colorado School of Mines; *A. Norman*, National Renewable Energy Laboratory; *J. Zimmerman*, Colorado School of Mines

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Paper PCSI-2WeA40, Room Canyon/Sugarloaf, 5:15 PM

Authors: *Dennice Roberts, J. Simon, K. Schulte, A. Ptak*, National Renewable Energy Laboratory

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Supplemental Document placeholder for Abstract 353, Paper PCSI-2WeA41 (page 1 of 3)

Paper PCSI-2WeA41, Room Canyon/Sugarloaf, 5:20 PM

Authors: *Alfonso Lastras-Martinez*, Universidad Autónoma de San Luis Potosí, México

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Paper PCSI-2WeA42, Room Canyon/Sugarloaf, 5:25 PM

Authors: *Imran Khan, B. McMahon, A. Norman, A. Zakutayev*, National Renewable Energy Laboratory

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Paper PCSI-2WeA43, Room Canyon/Sugarloaf, 5:30 PM

Authors: **Victor Petrov**, Russian Academy of Sciences, Russian Federation

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Supplemental Document placeholder for Abstract 337, Paper PCSI-2WeA44 (page 1 of 1)

Paper PCSI-2WeA44, Room Canyon/Sugarloaf, 5:35 PM

Authors: *Nao Wakabayashi*, Kogakuin University, Japan

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Paper PCSI-2WeA45, Room Canyon/Sugarloaf, 5:40 PM

Authors: *Kevin Dwyer*, *M. Dreyer*, *K. Gaskell*, University of Maryland; *R. Butera*, Laboratory for Physical Sciences

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Supplemental Document placeholder for Abstract 314, Paper PCSI-2WeA49 (page 1 of 2)

Paper PCSI-2WeA49, Room Canyon/Sugarloaf, 6:00 PM

Authors: *Theresa Ginley*, *S. Law*, University of Delaware

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Paper PCSI-1ThM1, Room Canyon/Sugarloaf, 8:30 AM

Authors: *Nadya Mason*, University of Illinois at Urbana Champaign

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Supplemental Document placeholder for Abstract 339, Paper PCSI-1ThM9 (page 1 of 1)

Paper PCSI-1ThM9, Room Canyon/Sugarloaf, 9:10 AM

Authors: **Mateusz Goryca**, *J. Li*, *A.V. Stier*, Los Alamos National Laboratory; *T. Taniguchi*, *K. Watanabe*, National Institute for Materials Science, Japan; *E. Courtade*, *S. Shree*, *C. Robert*, *B. Urbaszek*, *X. Marie*, Universite de Toulouse, INSA-CNRS-UPS, LPCNO, France; *S.A. Crooker*, Los Alamos National Laboratory

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Paper PCSI-1ThM13, Room Canyon/Sugarloaf, 9:30 AM

Authors: **Subash Kattel**, J. Murphy, S. Pasco, J. Ackerman, V. Alvarado, W.D. Rice, University of Wyoming

Supplemental Documents

Supplemental Document placeholder for Abstract 345, Paper PCSI-1ThM14 (page 1 of 1)

Paper PCSI-1ThM14, Room Canyon/Sugarloaf, 9:35 AM

Authors: *D. Shin*, The University of Texas; *M. Fischetti*, The University of Texas at Dallas; *Alex Demkov*, The University of Texas

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Supplemental Document placeholder for Abstract 348, Paper PCSI-2ThM31 (page 1 of 1)

Paper PCSI-2ThM31, Room Canyon/Sugarloaf, 11:00 AM

Authors: *Yue Qi*, Michigan State University

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Supplemental Document placeholder for Abstract 290, Paper PCSI-2ThM39 (page 1 of 1)

Paper PCSI-2ThM39, Room Canyon/Sugarloaf, 11:40 AM

Authors: *Sanju Gupta*, Western Kentucky University; *N. Dimakis*, The University of Texas-Rio Grande Valley

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Paper PCSI-2ThM40, Room Canyon/Sugarloaf, 11:45 AM

Authors: *Sanju Gupta*, *W. Ringo*, Western Kentucky University; *M. Hu*, *X. Wang*, Chinese Academy of Sciences, China

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