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, ***Xiaoqin Elaine Li,*** 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, ***Justin Song,*** Nanyang Technological University Singapore, Singapore
3:20pm	Invited talk continues.
3:25pm	
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3:55pm	**UPGRADED: PCSI-1SuA18** Investigation of Graphene/Ge(110) Interface, ***Miriam Galbiati,*** Technical University of Denmark, Denmark
4:00pm	Upgraded talk continues.
4:05pm	
4:10pm	
4:15pm	**Coffee Break and Poster Setup (Flagstaff/Trailridge Room)**
4:20pm	
4:25pm	
4:30pm	**UPGRADED**: **PCSI-2SuA25** Epitaxial Growth and Electronic Characterization of GdSb, ***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	**PCSI-2SuA - Epitaxial Growth of Quantum Materials and Structures** **Moderator:** Seung Sae Hong, Stanford University
4:35pm	Upgraded talk continues.	
4:40pm		
4:45pm		
4:50pm	**PCSI-2SuA29** MBE Growth of $Zn_xCd_{1-x}Te$ on Cd_3As_2, ***Anthony Rice,*** *K. Alberi,* National Renewable Energy Laboratory	
4:55pm	**PCSI-2SuA30** Interfaces and Growth of NbTiN-AlN Heterostructures on Sapphire as Epitaxial Josephson Junctions, ***Chris Richardson,*** *A. Thomas, A. Alexander, C. Weddle,* Laboratory for Physical Sciences*; B. Arey, M. Olszta,* PNNL	
5:00pm	**PCSI-2SuA31** Growth of AlN Barriers in Al/AlN/Al SIS Josephson Junctions by Low Temperature Atomic Layer Epitaxy, ***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	
5:05pm	**Poster Setup (Flagstaff/Trailridge Room)**	
6:00pm	**Welcome Reception (Century Room)**	

Sunday Evening, January 19, 2020

	Room Canyon/Sugarloaf	
7:30pm	**INVITED: PSCI-SuE1** Theory of Single Photon Detection by a Photoreceptive Molecule and a Quantum Coherent Spin Center, *N. Harmon,* University of Evansville*; **Michael Flatté**,* University of Iowa Invited talk continues.	**PSCI-SuE - Single Photon Detectors** **Moderator:** Christopher Palmstrom, University of California, Santa Barbara
7:35pm		
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8:10pm	**INVITED: PSCI-SuE9** From Dark Matter Detection to Artificial Intelligence: Uses for Superconducting Nanowire Single Photon Detectors*, **Sae Woo Nam**,* National Institute of Standards and Technology, USA Invited talk continues.	
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8:45pm		

Monday Morning, January 20, 2020

	Room Canyon/Sugarloaf	
8:30am	**INVITED: PCSI-1MoM1** MOCVD Epitaxy and Doping for β-Ga_2O_3 and $(Al_xGa_{1-x})_2O_3$, ***Hongping Zhao***, The Ohio State University	**PCSI-1MoM - Oxides** **Moderator:** Tohru Honda, Kogakuin University
8:35am	Invited talk continues.	
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9:10am	**PCSI-1MoM9** Atomic Structure and Electronic Properties of the Non-Polar In_2O_3 and β-Ga_2O_3(100) Surfaces, *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	
9:15am	**PCSI-1MoM10** Growth and Structures of Metal Dopant-Ceria Mixed Oxide Interfaces, *E. Ginting, L. Du,* ***Jing Zhou***, University of Wyoming	
9:20am	**INVITED: PCSI-1MoM11** Freestanding Crystalline Oxide Membranes and Heterostructures, ***Seung Sae Hong***, Stanford University	
9:25am	Invited talk continues.	
9:30am		
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10:00am	**PCSI-1MoM19** Effects of Annealing on Electronic Defects in β-Ga_2O_3 Revealed by Linearly-Polarized Photoluminescence (LPPL), *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	
10:05am	**Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)**	
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11:00am	**INVITED: PCSI-2MoM31** Hybrid Perovskite-Based High Energy Photon Detectors, ***Wanyi Nie***, Los Alamos National Laboratory	**PCSI-2MoM - Hybrid Materials** **Moderator:** Joseph Berry, National Renewable Energy Laboratory
11:05am	Invited talk continues.	
11:10am		
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11:40am	**PCSI-2MoM39** Pb-based Metal-Organic Frameworks for Efficient Perovskites Light-emitting Diodes Applications, ***Hsinhan Tsai***, *W. Nie,* Los Alamos National Laboratory	
11:45am	**PCSI-2MoM40** Arrangement and Electronic Properties of Cobalt Phthalocyanine Molecules on B-Si(111)-√3 × √3 *R* 30°, ***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, *T. Alkhidir, M. Abi Jaoude,* KUST, United Arab Emirates; *D. Gater,* University College London, United Kingdom; *C. Alpha,* Cornell University; ***Abdel Isakovic***, Colgate University	
11:55am	**PCSI-2MoM42** Carrier Collection and Transport at Interface of Lead-FreeHalide 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)**	

Monday Afternoon, January 20, 2020

	Room Canyon/Sugarloaf	
2:00pm 2:05pm 2:10pm 2:15pm 2:20pm 2:25pm 2:30pm 2:35pm	**INVITED: PCSI-1MoA1** Engineering Active and Stable Semiconductor Photoelectrodes by Atomic Layer Deposition, ***Ian Sharp,*** 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
2:40pm	**PCSI-1MoA9** Surface States Induced Catalyst-free CO Sensing at GaN and AlGaN/GaN Heterostructures, ***Monu Mishra,*** Indian Institute of Technology Delhi; *G. Gupta,* National Physical Laboratory, India	
2:45pm	**PCSI-1MoA10** Cu_2O Nanoparticles for Ennhancing Gas Phase Photocatalysis over Metal Oxide Semiconductor Nanostructures, ***Hikaru Masegi,*** Keio University, Japan	
2:50pm 2:55pm 3:00pm 3:05pm	**PCSI-1MoA11** UPGRADED: Self-Selective Formation of 1D and 2D GaBi Structures on GaAs, *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 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, ***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. Grandidier,* Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France	
3:15pm 3:20pm 3:25pm 3:30pm 3:35pm 3:40pm 3:45pm 3:50pm 3:55pm 4:00pm 4:05pm 4:10pm 4:15pm	**Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)**	
4:20pm 4:25pm 4:30pm 4:35pm 4:40pm 4:45pm 4:50pm 4:55pm	**INVITED: PCSI-2MoA29** Control of Spin-Orbit Coupling in Single Acceptor States in Silicon, ***Sven Rogge,*** University of New South Wales, Australia Invited talk continues.	**PCSI-2MoA - Dopants in Semiconductors** **Moderator:** John Robertson, University of Cambridge

5:00pm 5:05pm 5:10pm 5:15pm	**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 Upgraded talk continues.	
5:20pm 5:25pm 5:30pm 5:35pm 5:40pm 5:45pm 5:50pm 5:55pm	**INVITED: PCSI-2MoA41** The Electronic Bandstructure of Atomically Sharp Dopant Structures in Silicon, ***Justin Wells***, Norwegian University of Science and Technology, Norway Invited talk continues.	
6:00pm	**Dinner (Century/Millennium Room)**	

Monday Evening, January 20, 2020

	Room Canyon/Sugarloaf	
7:30pm	**INVITED: PCSI-MoE1** Fluctuating High Temperature Superconductivity in Monolayer FeSe / $SrTiO_3$, ***Kyle Shen***, *B. Faeth, S. Yang, D. Schlom,* Cornell University	**PCSI-MoE - Superconductivity I** **Moderator:** David Pappas, NIST
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, ***Daniel Beaton***, Scienta Omicron Inc.	
8:15pm	**INVITED: PCSI-MoE10** Superconductivity at Surfaces Studied by Scanning Tunneling Microscopy, ***Yukio Hasegawa***, The University of Tokyo, Japan	
8:20pm	Invited talk continues.	
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Tuesday Morning, January 21, 2020

	Room Canyon/Sugarloaf	
8:30am	**INVITED: PCSI-1TuM1** Quantum Microscopy of Nanoscale Materials and Devices, ***Christian Degen,*** ETH Zurich, Switzerland	**PCSI-1TuM - Magnetism** **Moderator:** Michael Flatté, University of Iowa
8:35am	Invited talk continues.	
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9:10am	**UPGRADED: PCSI-1TuM9** Mechanical Control of Valley Magnetization and Berry Curvature Dipole in Monolayer MoS_2, ***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	
9:15am	Upgraded talk continues.	
9:20am		
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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, *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	
9:35am	**UPGRADED: PCSI-1TuM14** Local Exchange Resonance in DC Magnetoresistance of Spin-Polarized Current Through a Dopant, ***Stephen McMillan,*** University of Iowa; *N. Harmon,* University of Evansville; *M. Flatté,* University of Iowa	
9:40am	Upgraded talk continues.	
9:45am		
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9:55am	**PCSI-1TuM18** Room Temperature Ferromagnetism in GaSb Thin Films Doped with Mn, *A.O. Pulzara Mora,* ***Camilo Andres Pulzara Mora,*** Universidad Nacional de Colombia, Colombia	
10:00am	**PCSI-1TuM19** Magnetotransport Studies in Hybrid 2D/0D Nanostructures, ***Ethel Perez-Hoyos,*** *Y. Luo, A. Dehankar, J. Xu, D. Pharis, J. Winter, R. Kawakami, E. Johnston-Halperin,* The Ohio State University	
10:05am	**Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)**	
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11:00am	**INVITED: PCSI-2TuM31** Fabrication of High Coherence Superconducting Qubits, *J. Long, H.S. Ku, X. Wu,* NIST; *R. Lake,* BlueFors; ***David Pappas,*** NIST	**PCSI-2TuM - Superconductivity II** **Moderator:** Kyle Shen, Cornell University
11:05am	Invited talk continues.	
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11:40am	**UPGRADED: PCSI-2TuM39** Interface Chemistry and Decoherence Processes in Superconducting Quantum Circuits, ***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. Kriekebaum, I. Siddiqi,* University of California, Berkeley	
11:45am	Upgraded talk continues.	
11:55am		
12:00pm	**Free Afternoon**	

Tuesday Evening, January 21, 2020

	Room Canyon/Sugarloaf	
7:00pm	**INVITED: PCSI-TuE1** Progress in Hybrid Perovskite Photovoltaics and Optoelectronics, ***Joseph Berry,*** National Renewable Energy Laboratory Invited talk continues.	**PCSI-TuE - The Future of PV** **Moderator:** Kirstin Alberi, National Renewable Energy Laboratory
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7:40pm	**INVITED: PCSI-TuE9** On the Path Towards Tandem Junction Nanowire Based Solar Cells, ***Magnus Borgström,*** Lund University, Sweden Invited talk continues.	
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Wednesday Morning, January 22, 2020

	Room Canyon/Sugarloaf	
8:30am 8:35am 8:40am 8:45am 8:50am 8:55am 9:00am 9:05am	**INVITED: PCSI-1WeM1** Metals at the Atomic Limit, ***Joshua Robinson,*** Penn State University Invited talk continues.	**PCSI-1WeM - Optical Properties of 2D Materials** **Moderator:** Wanyi Nie, Los Alamos National Laboratory
9:10am	**PCSI-1WeM9** Tuning the Spontaneous Emission of Monolayer Wse_2 by Optical Environment Control – Cavity Coupling and Substrate Manipulation, ***Hyunseung Lee,*** Ajou University, Republic of Korea	
9:15am	**PCSI-1WeM10** First Principles Study on Optical Properties of Monolayer Bismuthene under an Electric Field, ***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	
9:20am	**PCSI-1WeM11** Formation of Coherent Phase Domain Heterojunctions in Single Layer MoS_2 on Au(111), ***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	
9:25am 9:30am 9:35am 9:40am	**UPGRADED: PCSI-1WeM12** Effects of Electromechanical Coupling in Locally Strained Monolayer MoS_2, ***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 Upgraded talk continues.	
9:45am 9:50am 9:55am 10:00am 10:05am 10:10am 10:15am 10:20am 10:25am 10:30am 10:35am 10:40am 10:45am 10:50am 10:55am	**Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)**	
11:00am 11:05am 11:10am 11:15am 11:20am 11:25am 11:30am 11:35am	**INVITED: PCSI-2WeM31** Neuromorphic Computing with the Redox Transistor, ***Alec Talin,*** Sandia National Laboratories Invited talk continues.	**PCSI-2WeM - Material Modification and Self Assembly** **Moderator:** Sven Rogge, UNSW

11:40am	**PCSI-2WeM39** Kinetically-Driven Assembly of TaS_2-SnS Heterostructures with Flexible Stacking Architectures, ***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	
11:45am	**PCSI-2WeM40** Globally Aligned Single-Wall Carbon Nanotube Films through Electrostatic Ordering, ***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	
11:50am	**PCSI-2WeM41** Defining Insulating Regions on TiO_2 Thin Films by Laser Heating, *S. Ahmed, J. Ritter,* ***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,*** *D. Alameri, D. Karbach, R. Dong, L. Moore,* Saint Louis University*; R. Divan, Y. Liu,* 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 2:05pm 2:10pm 2:15pm 2:20pm 2:25pm 2:30pm 2:35pm	**INVITED: PCSI-1WeA1** Towards Fermi Level De-pinning at Contacts, ***John Robertson,*** Cambridge University, UK*; Y. Guo,* Wuhan University, China*; Z. Zhang,* Cambridge University, UK Invited talk continues.	**PCSI-1WeA - Devices and Contacts** **Moderator:** Alex Demkov, The University of Texas
2:40pm	**PCSI-1WeA9** Observation, Characterization, and Mitigation of the Internal *p-n* Junction in Pyrite FeS_2, a Potential Low-cost Solar Absorber, ***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	
2:45pm 2:50pm 2:55pm 3:00pm	**UPGRADED: PCSI-1WeA10** Photo-Driven Dipole Reordering: Key to Carrier Separation in Metalorganic Halide Provskites, ***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 Upgraded talk continues.	
3:05pm	**PCSI-1WeA14** First Principles Study on Electronic Properties of Graphene Nanostructures for High Current Density Cathode, ***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	
3:10pm	**PCSI-1WeA15** Band Offset Modulation in Si-EuO Heterostructures *via* Controlled Interface Formation, *W. Li, A. Posadas,* The University of Texas at Austin*;* ***Alex Demkov,*** The University of Texas	
3:15pm	**PCSI-1WeA16** First Principles Study on Electronic Properties of Magnetite for Spin Polarized Emission under an Electric Field, ***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	
3:20pm	**PCSI-1WeA17** Work Functions of Alkali and Alkaline Earth Metal Surfaces under Electric Fields based on First-Principles Calculations, *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	
3:25pm 3:30pm 3:35pm 3:40pm 3:45pm 3:50pm 3:55pm 4:00pm 4:05pm 4:10pm 4:15pm 4:20pm 4:25pm	**Coffee Break & Poster Viewing (Flagstaff/Trailridge Room)**	

Wednesday Afternoon, January 22, 2020

4:30pm 4:35pm 4:40pm 4:45pm 4:50pm 4:55pm 5:00pm 5:05pm	**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
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 Potosi, México	
5:25pm	**PCSI-2WeA42** Pulsed Laser Deposition of Epitaxial $Sr_3Al_2O_6$ as a Water-Soluble Sacrificial Layer for GaAs Deposition, ***Imran Khan,*** *B. McMahon, 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 Cu3N Grown on YSZ(001) Substrate by Mist CVD Method, ***Nao Wakabayashi,*** Kogakuin University, Japan	
5:40pm 5:45pm 5:50pm 5:55pm	**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.	
6:00pm	**PCSI-2WeA49** Novel Growth Mechanisms in van der Waals Epitaxy: 3D Morphologies of Bi_2Se_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, ***Nadya Mason,*** University of Illinois at Urbana Champaign	**PCSI-1ThM - 2D Materials - Strain and Heterostructures** **Moderator:** Joshua Robinson, Penn State University
8:35am	Invited talk continues.	
8:40am		
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9:10am	**UPGRADED: PCSI-1ThM9** Revealing Exciton Masses and Dielectric Properties of Monolayer Semiconductors with High Magnetic Fields, ***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	
9:15am	Upgraded talk continues.	
9:20am		
9:25am		
9:30am	**PCSI-1ThM13** Optical Determination of Ice-Induced Interfacial Strain on Single-Layer Graphene, ***Subash Kattel,*** *J. Murphy, S. Pasco, J. Ackerman, V. Alvarado, W.D. Rice,* University of Wyoming	
9:35am	**UPGRADED: PCSI-1ThM14** Electron Pairing by Remote-Phonon Scattering in Oxide-Supported Graphene, *D. Shin,* The University of Texas*; M. Fischetti,* The University of Texas at Dallas*; **Alex Demkov,*** 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, ***Yue Qi,*** Michigan State University	
10:05am		
10:10am	**Invited talk continues.**	
10:15am		
10:20am		
10:25am		
10:30am		
10:35am		
10:40am	**Conference Ends**	

Author Index

Bold page numbers indicate presenter

Author Index

Supplemental Documents

Supplemental Document placeholder for Abstract 307, Paper PCSI-1SuA2 (page 1 of 1)
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

Supplemental Document placeholder for Abstract 294, Paper PCSI-1SuA18 (page 1 of 2)
Paper PCSI-1SuA18, Room Canyon/Sugarloaf, 3:55 PM
Authors:, ***Miriam Galbiati,*** Technical University of Denmark, Denmark

Supplemental Documents

Supplemental Document placeholder for Abstract 351, Paper PCSI-2SuA25 (page 1 of 3)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 304, Paper PCSI-2SuA29 (page 1 of 1)
Paper PCSI-2SuA29, Room Canyon/Sugarloaf, 4:50 PM
Authors:, ***Anthony Rice**, K. Alberi,* National Renewable Energy Laboratory

Supplemental Documents

Supplemental Document placeholder for Abstract 315, Paper PCSI-2SuA30 (page 1 of 2)
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

Supplemental Document placeholder for Abstract 356, Paper PCSI-2SuA31 (page 1 of 2)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 338, Paper PSCI-SuE1 (page 1 of 1)
Paper PSCI-SuE1, Room Canyon/Sugarloaf, 7:30 PM
Authors:, *N. Harmon,* University of Evansville*; **Michael Flatté,*** University of Iowa

Supplemental Documents

Supplemental Document placeholder for Abstract 335, Paper PSCI-SuE9 (page 1 of 1)
Paper PSCI-SuE9, Room Canyon/Sugarloaf, 8:10 PM
Authors:, ***Sae Woo Nam,*** National Institute of Standards and Technology, UUSA

Supplemental Documents

Supplemental Document placeholder for Abstract 287, Paper PCSI-1MoM1 (page 1 of 1)
Paper PCSI-1MoM1, Room Canyon/Sugarloaf, 8:30 AM
Authors:, ***Hongping Zhao***, The Ohio State University

Supplemental Documents

Supplemental Document placeholder for Abstract 336, Paper PCSI-1MoM9 (page 1 of 1)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 354, Paper PCSI-1MoM10 (page 1 of 1)
Paper PCSI-1MoM10, Room Canyon/Sugarloaf, 9:15 AM
Authors:, *E. Ginting, L. Du,* ***Jing Zhou****,* University of Wyoming

Supplemental Documents

Supplemental Document placeholder for Abstract 343, Paper PCSI-1MoM11 (page 1 of 1)
Paper PCSI-1MoM11, Room Canyon/Sugarloaf, 9:20 AM
Authors:, ***Seung Sae Hong***, Stanford University

Supplemental Documents

Supplemental Document placeholder for Abstract 361, Paper PCSI-1MoM19 (page 1 of 1)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 312, Paper PCSI-2MoM39 (page 1 of 1)
Paper PCSI-2MoM39, Room Canyon/Sugarloaf, 11:40 AM
Authors:, ***Hsinhan Tsai,*** *W. Nie,* Los Alamos National Laboratory

Supplemental Documents

Supplemental Document placeholder for Abstract 344, Paper PCSI-2MoM40 (page 1 of 2)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 324, Paper PCSI-2MoM41 (page 1 of 2)
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

Supplemental Document placeholder for Abstract 286, Paper PCSI-2MoM42 (page 1 of 2)
Paper PCSI-2MoM42, Room Canyon/Sugarloaf, 11:55 AM
Authors:, ***William Jo,*** Ewha Womans University, Republic of Korea

Supplemental Documents

Supplemental Document placeholder for Abstract 310, Paper PCSI-1MoA1 (page 1 of 1)
Paper PCSI-1MoA1, Room Canyon/Sugarloaf, 2:00 PM
Authors:, ***Ian Sharp***, Walter Schottky Institut/Technische Universität München, Germany

Supplemental Documents

Supplemental Document placeholder for Abstract 289, Paper PCSI-1MoA9 (page 1 of 1)
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

Supplemental Document placeholder for Abstract 350, Paper PCSI-1MoA12 (page 1 of 2)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 342, Paper PCSI-1MoA16 (page 1 of 1)
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. Grandidier,* Université Lille, CNRS, Centrale Lille, ISEN, Université Valenciennes, France

Supplemental Documents

Supplemental Document placeholder for Abstract 298, Paper PCSI-2MoA29 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

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.

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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. Kriekebaum, I. Siddiqi,* University of California, Berkeley

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 331, Paper PCSI-2WeM40 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 288, Paper PCSI-1WeA1 (page 1 of 1)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 317, Paper PCSI-1WeA9 (page 1 of 3)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 341, Paper PCSI-1WeA10 (page 1 of 1)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 329, Paper PCSI-1WeA15 (page 1 of 1)
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

Supplemental Documents

Supplemental Document placeholder for Abstract 346, Paper PCSI-1WeA16 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 300, Paper PCSI-2WeA31 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 358, Paper PCSI-2WeA40 (page 1 of 1)
Paper PCSI-2WeA40, Room Canyon/Sugarloaf, 5:15 PM
Authors:, ***Dennice Roberts****, J. Simon, K. Schulte, A. Ptak,* National Renewable Energy Laboratory

Supplemental Documents

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 Potosi, México

Supplemental Documents

Supplemental Document placeholder for Abstract 322, Paper PCSI-2WeA42 (page 1 of 2)
Paper PCSI-2WeA42, Room Canyon/Sugarloaf, 5:25 PM
Authors:, ***Imran Khan***, *B. McMahon, A. Norman, A. Zakutayev,* National Renewable Energy Laboratory

Supplemental Documents

Supplemental Document placeholder for Abstract 333, Paper PCSI-2WeA43 (page 1 of 1)
Paper PCSI-2WeA43, Room Canyon/Sugarloaf, 5:30 PM
Authors:, ***Victor Petrov***, Russian Academy of Sciences, Russian Federation

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 313, Paper PCSI-2WeA45 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 319, Paper PCSI-1ThM1 (page 1 of 1)
Paper PCSI-1ThM1, Room Canyon/Sugarloaf, 8:30 AM
Authors:, ***Nadya Mason,*** University of Illinois at Urbana Champaign

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 316, Paper PCSI-1ThM13 (page 1 of 1)
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

Supplemental Documents

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

Supplemental Documents

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

Supplemental Documents

Supplemental Document placeholder for Abstract 291, Paper PCSI-2ThM40 (page 1 of 1)
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

Supplemental Document Author Index

Bold page numbers indicate presenter

Supplemental Document Author Index