PCSI-43 Schedule

Sunday Afternoon, January 17:			
Su1300	1:00 p.m.	Registration	
Su1425	2:25 p.m.	Welcome Remarks	
Magnetism			Session Chair: M. Flatte'
Su1430	2:30 p.m.	INVITED: Atomic Spin Chains as Testing Ground for Quantum Magnetism	S. Otte, Delft Univ. of Technology
Su1510	3:10 p.m.	Non-volatile, Strain-driven Switching of Magnetic Anisotropy in Rare Earth Free Composite Multiferroic Devices	C. Zollner, Cornell Univ.; L.Q. Chen, Penn State Univ.; D. Ralph, Cornell Univ.; R. Ramesh, Univ. of California, Berkeley; G. Stiehl, N. Dawley, R. Steinhardt, N. Reynolds, Cornell Univ.; J. Hu, Penn State Univ.; J. Heron, D.G. Schlom, Cornell Univ.
Su1515	3:15 p.m.	Influence of Cap Layers on Perpendicular Magnetic Anisotropy of Ultra-thin Fe/MgO(001) Films	T. Brown-Heft, M. Pendharkar, Univ. of California Santa Barbara; E. Lee, Harvey Mudd College; C.J. Palmstrøm, Univ. of California Santa Barbara
Su1520	3:20 p.m.	The Correlation Between the Magnetic Perpendicular Anisotropy and Orbital Magnetic Moment with Structural Order Parameter of the Epitaxial Fe/Pt Multilayers Under Annealing	Y-S. Chen, C-H. Lee, National Tsing Hua Univ.; J.C.A. Huang, National Cheng Kung Univ.; H.J. Lin, National Synchrotron Radaition Research Center
Su1525	3:25 p.m.	Magnetization Dynamics of Organic-based Magnetic Heterostructures	M. Chilcote, Y. Lu, H. Wang, F. Yang, E. Johnston-Halperin, The Ohio State Univ.
Nanostructures I			Session Chair: P.M. Koenraad
Su1530	3:30 p.m.	INVITED: Analysis of Composition and Strain in Semiconductor Nanostructures by Quantitative HAADF-STEM and Imaging STEM	A. Rosenauer, K. Müller-Caspary, M. Schowalter, T. Grieb, F.F. Krause, T. Mehrtens, Universität Bremen
Su1610	4:10 p.m.	Conductive Atomic Force Microscopy of Piezoelectric InGaN Nanorods	J. Colvin, A. Mikkelsen, R. Timm, Lund Univ.
Su1615	4:15 p.m.	Design Principles and Fabrication Processes of a New Microstripline Small-sized Inductor with Carbon Nanotube Bumps/Silicon MEMS Pillars for MMICs	N. Yuichi, N. Mistuki, A. Yuji, Keio Univ.
Su1620	4:20 p.m.	Incorporation of Sb into Erassb Containing Structures During MBE Growth	K. Eyink, Y. Zhang, J. Peoples, K. Mahalingam, M. Hill, L. Grazulis, Air Force Research Lab
Su1625	4:25 p.m.	Picosecond Thermoreflectance Measurements of High Density Vertically Aligned Carbon Nanotube Forests with a Height of 10 Um for High Performance Thermal Interface Materials	Y. Kurosu, Keio Univ.; T. Yagi, National Institute of Advanced Industrial Science and Technology; Y. Awano, Keio Univ.
Su1630	4:30p.m.	Poster Setup	
Su1800	6:00 p.m.	Welcome Reception	
Sunday Evening, January 17:			
Energy I			Session Chair: J. Redwing
Su1930	7:30 p.m.	INVITED: Bulk Direct Bandgap MoS_2 and Hot Electron Injection in Metal/MoS_2 and	S.B. Cronin, University of Southern California
Su2010	8:10 p.m.	INVITED: Structures, Devices, and Architectures for Nanoscale Solutions in Electrical Energy Storage	G.W. Rubloff, Univ. of Maryland

Su2050	8:50 p.m.	Surface/Interface Effects on Performance of Thin-film All-solid-state Li-ion Batteries with Al and Si Anodes		A.A. Talin, Sandia National Laboratories; C. Gong, Univ. of Maryland; D. Ruzmetov, Army Research Lab; A. Pearse, D. Ma, J.N. Munday, G. Rubloff, M.S. Leite, Univ. of Maryland
Su2055	8:55 p.m.	Synthesis of Chemically Activated $L_{i2}MnO_3$ Nanowires and Nanobelts with Improved Electrochemical Properties As Cathode Materials for Li-ion Batteries		X. Ma, College of Chemistry and Life Science, Hubei Univ. of Education, Wuhan, China
Monday Morning, January 18:				
Mo0745	7:45 a.m.	Registration and Continental Breakfast		
Nanostructures II				Session Chair: L. Lauhon
Mo0830	8:30 a.m.	INVITED: III-V Nanowires for Next Generation Solar Cells: Advantages and Challenges		A. Fontcuberta-Morral, EPFL
Mo0910	9:10 a.m.	Correlation of the Atomic Scale Surface Structure and the Electronic Properties of InAs and InAs/InSb Nanowires		J. Knutsson, M. Hjort, J. Webb, O. Persson, S. Gorji Ghalamenstani, S. Lehmann, L. Samuelson, K.A. Dick, R. Timm, A. Mikkelsen, Lund Univ.
Mo0915	9:15 a.m.	UPGRADED: How Can Band Offsets in III-V Nanowires Be Determined Correctly by Scanning Tunneling Spectroscopy?		Ph. Ebert, Forschungszentrum Jülich GmbH; P. Capiod, T. Xu, IEMN; M.J. Wei, Shanghai Univ.; A. Dias Alvarez, X.L. Han, D. Troadec, J.P. Nys, M. Berthe, IEMN; G. Patriarche, CNRS-LPN; L. Lymperakis, J. Neugebauer, Max-Planck Institut für Eisenforschung GmbH; I. Lefebvre, IEMN; S.R. Plissard, Universite de Toulouse; P. Caroff, The Australian National Univ.; R.E. Dunin-Borkowski, Forschungszentrum Jülich GmbH
Mo0935	9:35 a.m.	Suppression of Non-radiative Surface Recombination by N Incorporation in GaAs-based Nanowires Grown by Molecular Beam Epitaxy		S.L. Chen, W.M. Chen, Linkoping Univ.; F. Ishikawa, Ehime Univ.; I.A. Buyanova, Linkoping Univ.
Mo0940	9:40 a.m.	Formation of One-dimensional Arrays of Magic In Clusters Using a Vicinal Si Surface As a Template		M. Franz, J. Schmermbeck, M. Dähne, Technische Universität Berlin
Mo0945	9:45 a.m.	InSb Quantum Nano-stripes by Molecular Beam Epitaxy		T. Poempool, Zon, Chulalongkorn Univ.; S. Kiravittaya, Naresuan Univ.; S. Sopitpan, National Science and Technology Agency; S. Thainoi, S. Kanjanachuchai, S. Ratanathammaphan, S. Panyakeow, Chulalongkorn Univ.
Mo0950	9:50 a.m.	Time-deterministic Control of Quantized Conductance of Au Nanowires Using Feedback-Controlled Electromigration with Real-time Operating System		S. Sato, Y. Kanamaru, Y. Katogi, J-I. Shirakashi, Tokyo Univ. of Agriculture and Technology
Mo0955	9:55 a.m.	Atomic Structure of III-V Layers Grown on GaP/Si(001)		C.S. Schulze, Technische Universität Berlin; X. Huang, Yale Univ.; C. Prohl, V. Füllertt, S. Rybank, Technische Universität Berlin; S. Maddox, S. March, S.R. Bank, The Univ. of Texas at Austin; A. Beyer, R. Straubinger, K. Volz, M.L. Lee, Philipps-Univ. Marburg; A. Lenz, Technische Universität Berlin
Mo1000	10:00 a.m.	Coffee Break and Poster Viewing		

Nanostructures II				Session Chair: L. Lauhon
Mo1100	11:00 a.m.	Atomic Structure of InAs(Sb)/GaAs Submonolayer Qunatum Dots for Strong Charge Carrier Localization		H. Eisele, A. Lenz, Z. Diemer, C. Prohl, D. Quandt, A. Trittmatter, U.W. Pohl, M. Dähne, Technische Universität Berlin
Mo1105	11:05 a.m.	Individual iso-electronic N and Bi Centers in Gaas Studied by Scanning Tunneling Microscopy		C.M. Krammel, R.C. Plantenga, Eindhoven Univ. of Technology; V. Kortan, M.E. Flatté, Univ. of Iowa; FJ. Tilly, M. Roy, P.A. Maksym, Univ. of Leicester; J.M. Ulloa, Universidad Politénica de Madrid; T. Kita, Kobe Univ.
Energy II				Session Chair: G. Rubloff
Mo1110	11:10 a.m.	INVITED: Advanced Research Projects Agency-Energy: Innovation for Impact		E.D. Williams, Advanced Research Projects Agency-Energy
Mo1150	11:50 a.m.	Interfacial and Photocatalytic Properties of Zinc Oxide/Gold Nanoparticle Heterostructures		I. Unlu, Y. Wang, J.E. Whitten, Univ. of Massachusetts, Lowell
Mo1155	11:55 a.m.	Magnesium Hydride Film Formation Using a Sub-atmospheric Hydrogen Pressure Plasma at Low Temperature		H. Ohmi, N. Masuya, T. Hori, H. Kakiuchi, K. Yasutake, Osaka Univ.
Mo1200	12:00 p.m.	Ultrafast Multipass Transient Absorption Spectroscopy of Interfacial Excitonic Dynamics of Organic-Inorganic Heterojunctions: Harnessing Triplet Excitons in Organic Semiconductors via Colloidal Quantum Dots		L.R. Weiss, Cambridge Univ.
Mo1205	12:05 p.m.	Lunch and Poster Viewing		
Monday Afternoon, January 18:				
Oxides I				Session Chair: M. Allen
Mo1400	2:00 p.m.	INVITED: Bipolar Oxide Diodes: Role of the Interface for Type-I, -II and -III Heterostructures		M. Grundmann, Universität Leipzig, Institut für Experimentelle Physik II
Mo1440	2:40 p.m.	INVITED: Electrical Properties of ZnO:Ga/Substrate Interfaces: Bad, Good, and Fantastic		D.C. Look, Wright State Univ.
Mo1520	3:20 p.m.	Defect Redistribution and Mobility Enhancement at Highly Doped/Intrinsic-ZnO Interfaces		G.M. Foster, The Ohio State Univ.; G. Faber, Columbus School for Girls; E. Heller, D. Look, Air Force Research Lab; Y.F. Yao, C.C. Yang, National Taiwan Univ.; L.J. Brillson, The Ohio State Univ.
Mo1525	3:25 p.m.	Effect of Ti Sub-oxide Layers on the Switching Properties of ZnO-based ReRAM Cells		J.H. Park, K.R. Son, T.G. Kim, Korea Univ.
Mo1530	3:30 p.m.	Coffee Break and Poster Viewing		
Spintronics I				Session Chair: F. Yang
Mo1630	4:30 p.m.	INVITED: A Study of the Topological Effect in Artificial Magnetic Skyrmions		Z.Q. Qiu, Univ. of California at Berkeley, Berkeley
Mo1710	5:10 p.m.	Theory for the Coherent Detection of Interfacial Defects		N.J. Harmon, M.E. Flatté, Univ. of Iowa
Mo1715	5:15 p.m.	Long-lived Spin Relaxation and Spin Coherence of Electrons in Monolayer MoS_2		L. Yang, N.A. Sinitsyn, Los Alamos National Lab; W. Chen, J. Yuan, J. Zhang, Rice Univ.; K.M. McCreary, B.T. Jonker, U.S. Naval Research Lab; J. Lou, S.A. Crooker, Los Alamos National Lab

Mo1720	5:20 p.m.	INVITED: Co_2MnSi Half-Metal Magnetic Character Studied by Spin-Resolved PhotoEmission Spectroscopy and FerroMagnetic Resonance		T. Hauet, Universite de Lorraine; T. Devolder, Universite Paris-Saclay; A. Hallal, M. Chshiev, CEA-CNRS-Universite J. Fourier; A. Bataille, CEA-SacLay; P. Le Fevre, Synchrotron SOLEIL; S. Andrieu, A. Neggache, Universite de Lorraine
Mo1800	6:00 p.m.	Ultrafast Study of Dynamic Interfacial Exchange Coupling in Ferromagnet/ Oxide/Semiconductor Heterostructures		Y-S. Ou, Y-H. Chiu, The Ohio State Univ.; N.J. Harmon, The Univ. of Iowa; P. Odenthal, Univ. of California, Riverside; M. Sheffield, M. Chilcote, R. Kawakami, The Ohio State Univ.; M.E. Flatté, The Univ. of Iowa; E. Johnston-Halperin, The Ohio State Univ.
Mo1805	6:05 p.m.	Dinner on Own		
Monday Evening:				
Complex Oxides				Session Chair: C.J. Palmstrøm
Mo1930	7:30 p.m.	INVITED: Noncentrosymmetric Metals: A New Materials Class for Artificial Multiferroic Design		J. Rondinelli, Northwestern Univ.
Mo2010	8:10 p.m.	Frustrated Domain Formation and Charged Domain Walls in $PbTiO_3/LaNiO_3$/sub> Heterostructures with Preferential (111) Growth		H-J. Jin, S.H. Oh, W. Jo, Ewha Womans Univ.
Mo2015	8:15 p.m.	Built-in Potential in Fe_2O_3-Cr_2O_3 Superlattices for Improved Photoexcited Carrier Separation		T.C. Kaspar, D.K. Schreiber, S.R. Spurgeon, M.E. McBriarty, S.A. Chambers, Pacific Northwest National Lab; G.M. Carroll, D.R. Gamelin, Univ. of Washington
Mo2020	8:20 p.m.	Hybrid Molecular Beam Epitaxy for the Growth of Stoichiometric $BaSnO_3$		A. Prakash, J. Dewey, B. Jalan, Univ. of Minnesota
Mo2025	8:25 p.m.	Structural and Optical Properties of $SrTiO_3$ Thin Films on Semiconductors		S. Zollner, N. Samarasingha, C. Rodriguez, J. Moya, N. Fernando, New Mexico State Univ.; S. Chattopadhyay, Indian Institute of Technology Indore; P. Ponath, Univ. of Texas - Austin
Mo2030	8:30 p.m.	UPGRADED: Tunneling Spectroscopy in Interface Engineered Metal/$SrTiO_3$ Junctions		H. Inoue, A.G. Swartz, T. Merz, Stanford Univ.; Y. Hikita, SLAC National Accelerator Lab; H.Y. Hwang, Stanford Univ./SLAC National Accelerator Lab
Mo2050	8:50 p.m.	Understanding the Origin of Surface Depletion in δ-doped $SrTiO_3$		H. Yoon, H. Inoue, A.G. Swartz, Stanford Univ.; Y. Hikita, SLAC National Accelerator Lab; H.Y. Hwang, Stanford Univ. / SLAC National Accelerator Lab
Mo2055	8:55 p.m.	Iodine Dimerization at Methylammonium Lead Iodide Perovskite Surfaces		L. She, M. Liu, D. Zhong, Sun Yat-sen Univ.
Tuesday Morning, January 19:				
Tu0745	7:45 a.m.	Registration and Continental Breakfast		
Semiconductor Interfaces and Devices I				Session Chair: C.R. Eddy
Tu0830	8:30 a.m.	INVITED: Interfaces in GaN-diamond Integrated Electronics - Thermal and Mechanical Considerations		M. Kuball, J.W. Pomeroy, J. Anaya, H. Sun, R. Baranyai, D. Spiteri, D. Liu, Univ. of Bristol
Tu0910	9:10 a.m.	Reduced Output Power Drop in AlGaN/GaN HFETs on Si(111) by Controlling the Passivation /AlGaN Barrier Interface		S.K. Oh, Sunchon National Univ.; T. Jang, Chonbuk National Univ.; Y.J.Jo, H-Y. Ko, LG Electronics; J.S. Kwak, Sunchon National Univ.
Tu0915	9:15 a.m.	Suppression and Recovery of Nitrogen Dissociation from Surface of Gallium Nitride During High-temperature Annealing by Using New Nitrogen Heat-beam Method		N.S.N.B. Johari, Y. Awano, Keio Univ.

Tu0920	9:20 a.m.	INVITED: Polarization-Engineered Tunneling in III-Nitride Heterostructures		D. Jena, Cornell Univ. and Univ. of Notre Dame; X. Yan, W. Li, K. Pourang, J. EncomenderoRisco, M. Islam, V. Protasenko, Univ. of Notre Dame; S. Keller, Univ. of California Santa Barbara; P. Fay, Univ. of Notre Dame; and H.G. Xing, Cornell Univ. and Univ. of Notre Dame
Tu1000	10:00 a.m.	Coffee Break and Poster Viewing		
2D Materials I				Session Chair: R.K. Kawakami
Tu1100	11:00 a.m.	INVITED: Excitons in 2D Semiconductors and Heterostructures		X. Xu, Univ. of Washington
Tu1140	11:40 a.m.	Exciton Diamagnetic Shifts and Valley Zeeman Effect in Monolayer WS_2 and MoS_2 to 65 Tesla		A.V. Stier, Los Alamos National Lab; K.M. McCreary, B.T. Jonker, U.S. Naval Research Lab; J. Kono, Rice Univ.; S.A. Crooker, Los Alamos National Lab
Tu1145	11:45 a.m.	Hybrid, Gate-tunable, Van Der Waals P-n Heterojunctions from Pentacene and MoS_2		D. Jariwala, S. Howell, K-S. Chen, J. Kang, V. Sangwan, S. Filippone, R. Turrisi, T.J. Marks, L.J. Lauhon, M.C. Hersam, Northwestern Univ.
Tu1150	11:50 a.m.	Nanoscale Chemical and Electronic Properties of Methyl-terminated Germanane		T.J. Asel, X. Yang, S. Jiang, K. Krymowski, O. Restrepo, W. Windl, J. Goldberger, L.J. Brillson, The Ohio State Univ.
Tu1155	11:55 a.m.	In Situ Studies of Thermal Behavior of Exfoliated Black Phosphorus		M. Fortin-Deschênes, Polytechnique Montréal Pierre Levesque, Richard Martel, Université de Montréal; O. Moutanabbir, Polytechnique Montréal
Tu1200	12:00 p.m.	Free Afternoon		
Tuesday Evening, January 19:				
Rump Session: Novel Energy Materials				Session Chair: A.A. Talin
Tu1900	7:00 p.m.	INVITED: Using Nanostructured Assemblies to Control the Physics of Energy Harvesting and Storage		S.H. Tolbert, Univ. of California, Los Angeles
Tu1940	7:40 p.m.	INVITED: Modulating Charge Transport Mechanisms by Tuning the Architectures of Supramolecular Assemblies		J. Batteas, Texas A&M Univ.
Tu2020	8:20 p.m.	INVITED: Additive Printing of Flexible Electronics		T. Ng, Univ. of California, San Diego; D. Schwartz, P. Mei, G. Whiting, J. Veres, Palo Alto Research Center
Wednesday Morning, January 20:				
We0745	7:45a.m.	Registration and Continental Breakfast		
Oxides II				Session Chair: M. Grundmann
We0830	8:30 a.m.	INVITED: Effect of Oxygen Incorporation on the performance of Noble Metal Oxide Schottky Contacts to ZnO		A.M. Hyland, Univ. of Canterbury; R. Makin, S.M. Durbin, Western Michigan Univ.; M.W. Allen, Univ. of Canterbury
We0910	9:10 a.m.	Laser Curing and Ink-jet Processes for Fabricating SiOx RRAM Structures		K. Byun, Univ. of Texas at Austin; Y. Wang, B. Adams, Applied Materials Inc.; J. Lee, Univ. of Texas at Austin
We0915	9:15 a.m.	Second Derivative X=ray Absorption Spectroscopy Study of Ti oxides, TItanate Perovskite Alloys, and HfO_2, and nc-HfSiON334: A New Fourier Transformation Approach for Obtaining Band-Edge Excitons, Conduction Band States, and Electron Transport Dressed Masses		G. Lucovsky, C. Cheng, NC State Univ.
We0920	9:20 a.m.	Initial Nucleation and Bi-axial Texturing of Mgo Thin-films Assisted by Ion-beam Irradiation on Amorphous Y_2O_3 Layers		H-J. Jin, W. Jo, Ewha Womans Univ.; J. Jo, M. Kim, Seoul National Univ.; B.M. Kang, G-T. Kim, R-K. Ko, Y-S. Jo, D-W. Ha, Korea Electrotechnology Research Institute

High-K				Session Chair: J. Hilton
We0925	9:25 a.m.	Solution Processed Organic - Inorganic Hybrid Gate Dielectric For Flexible Thin Film Transistors		M.G. Syamala Rao, CINVESTAV
We0930	9:30 a.m.	Self-cleaning and Unexpected Surface Chemistry During Atomic Layer Deposition Revealed by Time-resolved XPS		S. McKibbin, S. Yngman, A. Head, J. Knutsson, J. Schnadt, A. Mikkelsen, R. Timm, Lund Univ.
We0935	9:35 a.m.	Impact of D_2 High-pressure Annealing Onto Ingaas Moscaps with Al_2O_3/HfO_2		J.S. Kim, Kyungpook National Univ.; S.-H. Shin, Univ. of Texas at Austin; D.-K. Kim, Kyungpook National Univ.; Y.D. Cho, C.-S. Shin, W.-K. Park, KANC; E. Chiu, M. Rivera, J.I. Lew, PoongSan Inc.; J.-H. Lee, Kyungpook National Univ.; S.K. Banerjee, Univ. of Texas at Austin; T-W. Kim, SEMATECH; D.-H. Kim, Kyungpook National Univ.
We0940	9:40 a.m.	Impact of Surface Treatments on High-k Dielectric Integration with Ga-polar and N-polar GaN		C.R. English, Univ. of Wisconsin; V.D. Wheeler, U.S. Naval Research Lab; N.Y. Garces, U.S. Patent and Trademark Office; N. Nepal, Sotera Defense Solutions; A. Nath, American Association for Engineering Education; J.K. Hite, M.A. Mastro, C.R. Eddy, Jr., U.S. Naval Research Lab
We0945	9:45 a.m..	Sigmodial Behavior of Binary and Pseudo Binary Alloy Properties as a Function of Alloy Composition: Inflection Point Compositions (16 and 84%)Indicative of Bond Percolation Alloy Species		C. Cheng, G. Lucovsky, NC State University
We0950	9:50 a.m.	LATE NEWS: Film-substrate Interfacial Engineering for Accurate Determination of the Near-bandgap Optical Properties Using Spectroscopic Ellipsometry		S. Choi, Univ. of California, Santa Barbara, J. Li, Univ. of Toledo; I.L. Repins, National Renewable Energy Lab
We0955	9:55 a.m.	LATE NEWS		TBD
We1000	10:00 a.m.	Coffee Break and Poster Viewing		
Novel Semiconductors				Session Chair: J.M. Woodall
We1100	11:00 a.m.	Temperature-dependent Photoluminescence Studies of $Ge_{1-y}Sn_y$ Direct Bandgap Semiconductors		M-Y. Ryu, Kangwon National Univ.; T.R. Harris, B. Wang, Y.K. Yeo, Air Force Institute of Technology; J. Kouvetakis, Arizona State Univ.
We1105	11:05 a.m.	Silicon-Germanium-TiN Semiconductors: Growth and Properties		O. Moutanabbir, J.-H. Fournier, S. Mukherjee, B. Meynard, M. Fortin-Deschênes, Ecole Polytechnique de Montreal; S. Wirths, Forschungszentrum Juelich; J. M. Hartmann, LETI; P. Desjardins, Ecole Polytechnique de Montreal; D. Buca, Forschungszentrum Juelich
We1110	11:10 a.m.	Investigation of the Half-Heusler CoTiSb/III-V Heterointerfaces		S.D. Harrington, A. Rice, T. McFadden, J. K. Kawasaki, C.J. Palmstrøm, Univ. of California, Santa Barbara
We1115	11:15 a.m.	Half-Heusler/Heusler Interfaces:Stability and Electronic Properties		A. Rice, S.D. Harrington, J.K. Kawasaki, N. Verma, B.D. Schultz, C.J. Palmstrøm, Univ. of California, Santa Barbara

2D Materials II				Session Chair: T.F. Heinz
We1120	11:20 a.m.	UPGRADED: 2D Nitrides Beyond hBN: The Case of 2D GaN		Z.Y. Al Balushi, The Pennsylvania State Univ.; K. Wang, Materials Research Institute; R.K. Ghosh, R.A. Vilá, The Pennsylvania State Univ; S.M. Eichfeld, The Pennsylvania State Univ. and Materials Research Institute; J.D. Caldwell, P.A. DeSario, U.S. Naval Research Lab; D.F. Paul, Physical Electronics USA; S. Datta, J.M. Redwing, J.A. Robinson, The Pennsylvania State Univ. and Materials Research Institute
We1140	11:40 a.m.	Observation of Friction Between Gold Nanocrystals and Graphene Using Quartz Crystal Microbalance		M. Lodge, B. Blue, Univ. of Central Florida; B.D. Dawson, Western Digital; M. Ishigami, Univ. of Central Florida
We1145	11:45 a.m.	Development of Water Soluble Polyvinyl Alcohol Assisted Transfer Technique for 2-dimensional Materials for High-performance Graphene Field Effect Transistors		H.V. Ngoc, D.J. Kang, Sungkyunkwan Univ.
We1150	11:50 a.m.	Defect-controlled Addition of Nitrogen into Aromatic Configurations in CVD-grown Graphene by Microwave Flowing Afterglow Plasma Exposure		G. Robert-Bigras, L. Vandsburger, L. Stafford, Universite de Montreal; A. Sarkissian, Plasmionique, Inc.
We1155	11:55 a.m.	Etching-free Transfer of Highly-aligned Bottom-up Graphene Nanoribbon Arrays on Au(788) Template		M. Ohtomo, Y. Sekine, NTT Basic Research Lab; H. Hibino, Kwansei Gakuin Univ.; H. Yamamoto, NTT Basic Research Lab
We1200	12:00 p.m.	Lunch and Poster Viewing		
Wednesday Afternoon, July 20				
Semiconductor Interfaces and Devices II				Session Chair: A. Mikkelsen
We1400	2:00 p.m.	INVITED: Phosphorene as a New 2D Material for Device Applications		P.D. Ye, Purdue Univ.
We1440	2:40 p.m.	Interface Improvement in AlGaN GaN Hfets Using TMAH Pre Treatment		D.K Kim, W.S. Park, Y.I. Jang, J.S. Kim, Y.J. Yun, I.M. Kang, D.H. Kim, J.H. Lee, Kyungpook National Univ.
We1445	2:45 p.m.	Assessment of Substrate Surface Pretreatment for Epitaxial Growth of III-nitrides at Low Temperatures		N. Nepal, V.R. Anderson, V.D. Wheeler, J.K. Hite, S.D. Johnson, D.J. Meyer, B.P. Downey, U.S. Naval Research Lab; A. DeMasi, K.F. Ludwig, Boston Univ.; C.R. Eddy, Jr, U.S. Naval Research Lab
We1450	2:50 p.m.	Direct Ohmic Contact to P-AlGaN and Its Application to 365 Nm AlGaInN/InGaN Light-emitting Diodes		T. Lee, T.G. Kim, D.Y. Kang, Korea Univ.
We1455	2:55 p.m.	Epitaxial Lateral Overgrowth of ZnTe on Sapphire Substrates Using SiO_2 Mask		S. Hattori, T. Nakasu, T. Kizu, Y. Hashimoto, W. Sun, F. Kazami, Waseda Univ.; M. Kobayashi, Waseda Univ. and Research Institute for Materials Science & Technology; T. Asahi , JX Nippon Mining & Metals Corporation
New Techniques and Devices				Session Chair: P. Ye
We1500	3:00 p.m.	Nanoscale Imaging of Local Few-femtosecond Near-field Dynamics Within Individual Nanostructures		E. Marsell, A. Losquin, R. Swaerd, M. Miranda, C. Guo, A. Harth, E. Lorek, J. Mauritsson, C.L. Arnold, Lund Univ.; H. Xu, Wuhan Univ.; A. L'Huillier, A. Mikkelsen, Lund Univ.
We1505	3:05 p.m.	Time of Flight Backscattering Spectrometry and Secondary Ion Mass Spectrometry in a Helium Ion Microscope Enabling Chemical Analysis on the Nm Scale		N. Klingner, R. Heller, G. Hlawacek, Helmholtz-Zentrum Dresden-Rossendorf; P. Gnauck, Carl-Zeiss-Microscopy GmbH; S. Facsko, J. von Borany, Helmholtz-Zentrum Dresden-Rossendorf

We1510	3:10 p.m.	Nanoscale Imaging of Defects in Cdte Photovoltaic Devices Using Two Novel Optical Spectroscopies		Y. Yoon, J. Chae, A. Katzenmeyer, H.P. Yoon, Univ. of Maryland, National Institute of Standards and Technology; J. Schumacher, National Institute of Standards and Technology; S. An, Univ. of Maryland, National Institute of Standards and Technology; A. Centrone, National Institute of Standards and Technology
We1515	3:15 p.m.	Overcoming Interface Oxidation Via Melt Mixing During LPE of AlGaAs Multi-layer Structures		J.M. Woodall, Univ. of California, Davis
We1520	3:20 p.m.	Application of Metal-insulator-metal Single Electron Transistors for Characterization of Ultrathin Dielectrics Grown by Atomic Layer Deposition		G. Karbasian, M. McConnell, A. Orlov, A. Mukasyan, S. Rouvimov, G. Snider, Univ. of Notre Dame
We1525	3:25 p.m.	Coffee Break and Poster Viewing		
Semiconductor Interfaces				Session Chair: M. Kuball
We1625	4:25 p.m.	INVITED: Engineering Interfaces for Memristive Devices		J.J. Yang, Univ. of Massachusetts, Amherst
We1715	5:15 p.m.	UPGRADED: Epitaxial Al-InAs Two-dimensional Systems: a Platform for Gate-able Topological Superconductivity		J. Shabani, Univ. of California, Santa Barbara; C.M. Marcus, Univ. of Copenhagen; M. Troyer, ETH Zurich; C. Nayak, S. Kraemer, Univ. of California, Santa Barbara; P. Krogstrup, Univ. of Copenhagen; R. Lutchyn, Microsoft Research; T. Stankevic, Univ. of Copenhagen; K. Pakrouski, ETH Zurich; F. Nichele, Univ. of Copenhagen; Y. Kim, Univ. of California, Santa Barbara; H.J. Sumominen, M. Kjaergaard, Univ. of Copenhagen; C.J. Palmstrøm, Univ. of California, Santa Barbara
We1735	5:35 p.m.	Schottky Barrier Diodes with In-situ Grown Single Crystal Aluminum on GaN by Plasma-assisted Molecular Beam Epitaxy		H.Y. Tseng, W.C. Yang, P.Y. Lee, C.W. Lin, K.C. Hsieh, K.Y. Cheng, National Tsing Hua Univ.
We1740	5:40 p.m.	How Surface Leakage and Dislocations Affect Diode Behavior in Micrometer-sized SiGe/Si Heterostructures		A. Jung, F. Isa, T. Kreiliger, ETH Zurich; Y. Arroyo Rojas Dasilva, R. Erni, Empa-Swiss Federal Laboratories for Materials Science and Technology; P. Niedermann, CSEM; G. Isella, Politecnico di Milano; H. von Kaenel, ETH Zurich
We1745	5:45 p.m.	Hot Electron Transport Studies of W/Si and Cr/Si Diodes Using		C. Durcan, W. Nolting, SUNY Albany; V. LaBella, SUNY Polytechnic
We1750	5:50 p.m.	Charge Transport Mechanisms in P-i-n Anisotype GaSb/GaAs Hetrojunctions		A. Sellai, Sultan Qaboos Univ.; M. Aziz, M. Henini, Nottingham Univ.; A. Mesli, Aix-Univ., Marseille
We1755	5:55 p.m.	Structural Properties of β-$fesi_2$ Thin Films on Si(111) Substrate and Electrical Transport Properties of N-type β-$fesi_2$/P-type Si Heterojunctions Prepared by Radio Frequency Magnetron Sputtering		N. Promros, King Mongkut's Institute of Technology Ladkrabang; R. Baba, H. Kishimoto, Kyushu Univ.; P. Sittimart, W.Kaenrai, King Mongkut's Institute of Technology Ladkrabang; T.Hanada, A. Zkria, Kyushu Univ.; M.Shaban, Aswan Univ.; T.Yoshitake, Kyushu Univ.
We1800	6:00 p.m.	Lead Telluride Through Transformation of Plumbonacrite in CVD Process and Its Behavior As Part of PbTe-Si Diode		I.R. Chávez-Urbiola, Y.V. Vorobiev, R. Ramírez-Bon, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional
We1830	6:30 p.m.	Conference Banquet		

Thursday Morning, January 21 :			
Th0745	7:45 a.m.	Registration and Continental Breakfast	
2D Materials III			Session Chair: C. Varanasi
Th0830	8:30 a.m.	INVITED: Excitonic Effects in 2D Semiconductor Layers	T.F. Heinz, Stanford Univ.
Th0910	9:10 a.m.	INVITED: Optical Spectroscopy in Monolayer Transition Metal dichalcogenides: Excitonic Properties and Valley Dynamics	B. Urbaszek, Université de Toulouse
Th0950	9:50 a.m.	Imaging Spin Dynamics in Monolayer WS_2 by Time-Resolved Kerr Rotation Microscopy	E. Bushong, Y. Luo, The Ohio State Univ.; K.M. McCreary, Naval Research Lab; M. Newburger, S. Singh, The Ohio State Univ.; B. Jonker, U.S. Naval Research Lab; R.K. Kawakami, The Ohio State Univ.
Th0955	9:55 a.m.	Measuring Band Alignment of Transition Metal Dichalcogenides and Graphene Using Low-energy Electron Microscopy	S.C. de la Barrera, P.C. Mende, J. Li, Carnegie Mellon Univ.; Y-C. Lin, The Pennsylvania State Univ.; S. Vishwanath, Cornell Univ.; J. Robinson, The Pennsylvania State Univ.; H. Xing, Cornell Univ.; R.M. Feenstra, Carnegie Mellon Univ.
Th1000	10:00 a.m.	Coffee Break and Poster Viewing	
Spintronics II			Session Chair: S. Crooker
Th1100	11:00 a.m.	INVITED: FMR-Drive Pure Spin Transport in Metals and Antiferromagnetic Insulators	F. Yang, The Ohio State Univ.
Th1140	11:40 a.m.	Spin Injection in Self-assembled InAs/GaAs Quantum-dot Molecular Structures	Y.Q. Huang, Y. Puttisong, I.A. Buyanova, W. Chen, Linköping Univ.
Th1145	11:45 a.m.	The Role of Interface Dipole for Switching Spin State of Spin Crossover Molecules	X. Zhang, Y. Liu, Univ. of Nebraska, Lincoln; A. N'Diaye, Lawrence Berkeley National Lab; J-F. Létard, Université de Bordeaux; B. Doudin, Université de Strasbourg; P.A. Dowben, Univ. of Nebraska, Lincoln
Th1150	11:50 a.m.	Frequency-dependent Current Hysteresis Measurements for Alternating Current (AC) Characterization of Organic/Carbon Nanotube Thin-film Transistors by Applying Sinusoidal Wave Drain Voltage Signals	K. Watanabe, K. Tanoue, Y. Taki, K. Noda, Y. Awano, Keio Univ.
Th1155	11:55 a.m.	Surface Composition and Atomic Structure of Single Crystal Bi_2Se_3 Investigated by Low Energy Ion Scattering	W. Zhou, H. Zhu, J.A. Yarmoff, Univ. of California, Riverside
Th1200	12:00 p.m.	Topological Surface States in Sb Quantum Wells on Gasb(111)A Substrates	K.S. Wickramasinghe, C.K. Gaspe, S. Cairns, N.D. Teasdale, T.D. Mishima, J.C. Keay, M.B. Johnson, S.Q. Murphy, M.B. Santos, Univ. of Oklahoma
Th1205	12:05 p.m.	Conference Ends	