<table>
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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>10:00am</td>
<td>LI-MoM-1 Welcome from the AVS President, SUSAN BURKETT, University of Alabama</td>
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<tr>
<td>10:05am</td>
<td>LI-MoM-2 Welcome from the AVS 67 Program Chair, DAN KILLELEA, Loyola University Chicago</td>
</tr>
<tr>
<td>11:00am</td>
<td>INVITED: LI-MoM-13 2021 Dorothy M. and Earl S. Hoffman Award Scholarship Talk: Formation and Stability of Oxygen Structures on Ag(111) Surfaces, MARIE TURANO, Loyola University Chicago; L. Juurlink, Leiden University, The Netherlands; E. Jamka, M. Gillum, D. Killelea, Loyola University Chicago</td>
</tr>
<tr>
<td>11:15am</td>
<td>INVITED: LI-MoM-16 AVS 2021 Graduate Research Award Talk: Molecular Interactions with Frozen Ice Films: Adsorption, Oxidative Reactivity, and Isotopic Enrichment, MICHELLE BRANN, S. Sibener, University of Chicago</td>
</tr>
<tr>
<td>11:30am</td>
<td>INVITED: LI-MoM-19 2021 AVS Russell and Sigurd Varian Award Talk: Chemically Resolved Metal Supported Regioisomeric Assemblies at the Angstrom Scale using Ultrahigh Vacuum Tip-Enhanced Raman Spectroscopy: Conformations &amp; Interactions, SAYANTAN MAHAPATRA, J. Schultz, L. Li, N. Jiang, University of Illinois at Chicago</td>
</tr>
<tr>
<td>11:45am</td>
<td>INVITED: LI-MoM-22 2021 AVS Graduate Research Award Talk: Investigating Surfaces, Interfaces, and their Impact on Degradation of Polymer Electrolyte Membrane Water Electrolyzers, SARAH F. ZACCARINE, Colorado School of Mines; M. Shviro, Forschungszentrum Jülich GmbH, Germany; M. Dzara, Colorado School of Mines; M. Carmo, Forschungszentrum Jülich GmbH, Germany; S. Pylypenko, Colorado School of Mines</td>
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<td>12:00pm</td>
<td>BREAK</td>
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<tr>
<td>12:15pm</td>
<td>INVITED: LI-MoM-28 AVS 2021 Peter Mark Memorial Award Lecture: Novel MBE Approaches for Atomically Precise Synthesis of “Stubborn” Metal Oxides, BHARAT JALAN, Univ. of Minnesota, USA</td>
</tr>
<tr>
<td>1:00pm</td>
<td>INVITED: LI-MoM-37 AVS 2021 John Thornton Memorial Award Lecture: Oxide MBE Rocks! Reflections on 35+ Years of Oxide MBE, DARRELL SCHLOM, Cornell University</td>
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<td>1:30pm</td>
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<tr>
<td>1:45pm</td>
<td>INVITED: LI-MoM-46 2021 AVS Graduate Research Award Talk: Versatile Polymer Nanoparticle Synthesis Using Initiated Chemical Vapor Deposition (iCVD), TREVOR DONADT, D. Streerer, R. Yang, Cornell Univ.</td>
</tr>
<tr>
<td>2:00pm</td>
<td>INVITED: LI-MoM-49 2021 Dorothy M. and Earl S. Hoffman Award Scholarship Talk: Tunable Photonics Based on Thin-Film Vanadium Dioxide, CHENGHAO WAN, University of Wisconsin - Madison; Z. Zhang, Purdue Univ.; D. Woolf, Physical Sciences Inc.; J. Rensberg, M. Hafermann, Friedrich Schiller Univ. Jena, Germany; J. Salman, Y. Xiao, Univ. of Wisconsin - Madison; M. Park, Purdue Univ.; C. Ronning, Friedrich Schiller Univ. Jena, Germany; S. Ramanathan, Purdue University; M. Kats, Univ. of Wisconsin – Madison</td>
</tr>
<tr>
<td>2:30pm</td>
<td>INVITED: LI-MoM-55 AVS 2021 Medard W. Welch Award Lecture: Probing and Controlling Excitons in 2D Semiconductors, TONY HEINZ, Stanford University and SLAC National Accelerator Laboratory</td>
</tr>
<tr>
<td>3:00pm</td>
<td>LI-MoM-61 Closing Remarks and Thank You's, AMY V. WALKER, University of Texas at Dallas</td>
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* National Student Award Finalist
* Peter Mark Memorial Award Winner
* John A. Thornton Memorial Award Winner
* Medard W. Welch Award Winner
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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>10:00</td>
<td>LI-TuM1-1</td>
<td>Welcome and Opening Remarks, <em>Ashleigh Baber</em>, James Madison University</td>
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<tr>
<td>10:05</td>
<td>LI-TuM1-2</td>
<td>Electrochemical Surface Science of Platinum, <em>Marc Koper</em>, Leiden University, Netherlands</td>
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<tr>
<td>10:25</td>
<td>LI-TuM1-6</td>
<td>Manipulating Electrochemical Reactions in Van Der Waals Heterostructures, <em>Kwabena Bediako</em>, University of California at Berkeley</td>
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<td>11:05</td>
<td>BREAK</td>
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<tr>
<td>11:15</td>
<td>LI-TuM1-16</td>
<td>Batteries at Work: Ambient Pressure Photoelectron Spectroscopy for Lithium Ion Batteries, <em>Julia Maibach</em>, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM), Germany, <em>I. Källquist</em>, <em>F. Lindgren</em>, <em>M. Hahlin</em>, Uppsala University, <em>Angstrom Laboratory</em>, <em>Sweden</em>;</td>
<td><em>Jon Tomasz Gudmundsson</em>, <em>H. Hajihoseini</em>, University of Iceland; <em>N. Brenning</em>, KTH Royal Institute of Technology, Sweden; <em>M. Rudolph</em>, Leibniz Institute of Surface Engineering (IOM), Germany; <em>M. Raadu</em>, KTH Royal Institute of Technology, Sweden; <em>D. Lundin</em>, Linkoping University, Sweden</td>
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<tr>
<td>11:35</td>
<td>LI-TuM1-20</td>
<td>In-Situ TEM Imaging of Nanoscale Reactions at Solid-Liquid-Gas Interfaces, <em>Haimei Zheng</em>, Lawrence Berkeley National Lab</td>
<td><em>Yu-Qian Zheng</em>, <em>P. Feng</em>, University of Florida</td>
</tr>
<tr>
<td>12:15</td>
<td>LI-TuM1-28</td>
<td>Closing Remarks and Thank You's, <em>Erin Iski</em>, University of Tulsa</td>
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**Tuesday Morning Live Session II:**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>10:00</td>
<td>LI-TuM2-1</td>
<td>Welcome and Opening Remarks, <em>Adriana Creatore</em>, Eindhoven University of Technology, The Netherlands</td>
<td></td>
</tr>
<tr>
<td>10:05</td>
<td>LI-TuM2-2</td>
<td>Aluminum Scandium Nitride Microdevices for Next Generation Nonvolatile Memory and Microelectromechanical Systems, <em>Troy Olsson</em>, University of Pennsylvania</td>
<td></td>
</tr>
<tr>
<td>10:25</td>
<td>LI-TuM2-6</td>
<td>Memristive Devices and Arrays as AI Hardware, <em>J. Joshua Yang</em>, University of Southern California</td>
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<td>11:05</td>
<td>BREAK</td>
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<tr>
<td>11:15</td>
<td>LI-TuM2-16</td>
<td>On the Low Deposition Rate and Ionized Flux Fraction in High Power Impulse Magnetron Sputtering, <em>Jon Tomasz Gudmundsson</em>, <em>H. Hajihoseini</em>, University of Iceland; <em>N. Brenning</em>, KTH Royal Institute of Technology, Sweden; <em>M. Rudolph</em>, Leibniz Institute of Surface Engineering (IOM), Germany; <em>M. Raadu</em>, KTH Royal Institute of Technology, Sweden; <em>D. Lundin</em>, Linkoping University, Sweden</td>
<td><em>Yu-Qian Zheng</em>, <em>P. Feng</em>, University of Florida</td>
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<tr>
<td>11:35</td>
<td>LI-TuM2-20</td>
<td>β-Ga$_2$O$_3$ Resonant Micro/Nanoelectromechanical Systems (M/NEMS), <em>Xu-Qian Zheng</em>, <em>P. Feng</em>, University of Florida</td>
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<tr>
<td>11:55</td>
<td>LI-TuM2-24</td>
<td>In-Depth Feasibility Study of Dual Damascene Extension: Patterning, Dielectric Etch and Metallization, <em>Xinghua Sun</em>, TEL Technology Center, America, LLC; <em>Y. Mignot</em>, IBM Research Division, Albany, NY; <em>C. Cole</em>, <em>E. Liu</em>, TEL Technology Center, America, LLC; <em>J. Church</em>, IBM Research Division, Albany, NY; <em>D. Santos</em>, <em>A. Raley</em>, TEL Technology Center, America, LLC; <em>S. Sieg</em>, IBM Research Division, Albany, NY; <em>P. Biolisi</em>, TEL Technology Center, America, LLC</td>
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<tr>
<td>12:15</td>
<td>LI-TuM2-28</td>
<td>Closing Remarks and Thank You's, <em>Sebastian Engelmann</em>, IBM T. J. Watson Research Center</td>
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<td>Time</td>
<td>Session 1</td>
<td>Session 2</td>
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<tr>
<td>12:50pm</td>
<td>LI-TuA1-1 Welcome and Opening Remarks, <strong>DONNA CHEN</strong>, University of South Carolina</td>
<td>LI-TuA2-1 Welcome and Opening Remarks, <strong>GINGER WHEELER</strong>, U.S. Naval Research</td>
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<td>1:55pm</td>
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<tr>
<td>2:05pm</td>
<td>INVITED: LI-TuA1-16 Electronic Structure and Dynamics of Single Atom Catalysts, <strong>NURIA LOPEZ</strong>, ICIQ, Spain</td>
<td>INVITED: LI-TuA2-16 Going Beyond Superficial Surface Analysis for Transforming Plants into Value-added Products, <strong>ROBYN GOACHER</strong>, Materion Corp.</td>
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<tr>
<td>2:25pm</td>
<td>INVITED: LI-TuA1-20 Methanol Synthesis Pathways for the Selective Conversion of C-H bonds, <strong>SANJAYA SENANAYAKE</strong>, Brookhaven National Laboratory</td>
<td>INVITED: LI-TuA2-20 Molecular Dynamics Study on Damage Formation in Atomic Layer Etching of Si With Halogen Radicals, <strong>ERIN JOY CAPDOS TINACBA</strong>, M. Isobe, S. Hamaguchi, Osaka University, Japan</td>
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<tr>
<td>2:45pm</td>
<td>INVITED: LI-TuA1-24 Building Bridges Between University, National Laboratory, and Industrial Research, <strong>ROBERT MCCABE</strong>, National Science Foundation</td>
<td>INVITED: LI-TuA2-24 Variable Polarization, External Magnetic Field, and Spin Resolution for Buried Magnetic Materials Studied by Hard X-Ray Photoemission, <strong>SHIGENORI UEDA</strong>, National Institute for Materials Science, Japan</td>
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<tr>
<td>3:05pm</td>
<td>LI-TuA1-28 Closing Remarks and Thank You’s, <strong>ZHENRONG ZHANG</strong>, Baylor University</td>
<td>LI-TuA2-28 Closing Remarks and Thank You’s, <strong>MOHAN SANKARAN</strong>, University of Illinois at Urbana-Champaign</td>
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<td>Time</td>
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<tr>
<td>10:00</td>
<td>Welcome and Opening Remarks, ANGEL YANGUAS-GIL, Argonne National Lab</td>
<td>Live Session LI-WeM1-1 Welcome and Opening Remarks, SIDNEY COHEN, Weizmann Institute of Science, Israel</td>
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<tr>
<td>10:05</td>
<td>INVITED: LI-WeM1-2 Metalorganic Vapor-Phase Epitaxy of Gallium (Aluminum) Oxide Thin Films and Heterostructures for High Frequency and Power Electronics, SRIRAM KRISHNAMOORTHY, University of California, Santa Barbara; P. Ranga, A. Bhattacharyya, S. Roy, Electrical and Computer Engineering, The University of Utah</td>
<td>Live Session LI-WeM2-1 Welcome and Opening Remarks, ASSD 2021 Peter M.A. Sherwood Mid-Career Professional Award Talk: Information from complexity - Making Sense of the Mess Created by ToF-SIMS, DANIEL GRAHAM, University of Washington, Seattle; M. Taylor, Pacific Northwest National Laboratory; L. Gamble, University of Washington, Seattle</td>
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<td>10:25</td>
<td>INVITED: LI-WeM1-6 Selection Criteria for Small Inhibitor Molecules in Area-Selective Atomic Layer Deposition, MARC MERKK, P. Yu, J. Li, Eindhoven Univ. of Technology, Netherlands; D. Hausmann, Lam Research Corp.; T. Sandoval, Univ. Técnica Federico Santa María, Chile; E. Kessels, A. Mackus, Eindhoven Univ. of Technology, Netherlands</td>
<td>Live Session LI-WeM2-6 High Throughput Discovery of Novel Antiviral Polymers for Reducing SARS-CoV-2 Surface Transmission and Improving PPE, XUAN XUE, J. Duncan, C. Coleman, J. Ball, C. Alexander, M. Alexander, University of Nottingham, UK</td>
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<td>10:45</td>
<td>INVITED: LI-WeM1-10 Ligand-Exchange Reactions Using Silane Precursors Containing Different Ligands: Pathways for Selective Thermal Atomic Layer Etching, ANN LII-ROSALES, V. Johnson, A. Cavanagh, S. Sharma, S. George, University of Colorado Boulder</td>
<td>Live Session LI-WeM2-10 Machine-Learning-Assisted Photonics, ALEXANDRA BOLTASSEVA, Z. Kudyshev, A. Kildishev, V. Shalaev, Purdue University, USA</td>
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<td>11:05</td>
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<td>11:15</td>
<td>INVITED: LI-WeM1-16 Superconformal Trench Filling With HfOₓ₋ₓVₓBₓ Using Two-Precursor Chemical Vapor Deposition, KINSEY CANOVA, Z. Zhang, G. Girolami, J. Abelson, University of Illinois at Urbana Champaign</td>
<td>Live Session LI-WeM2-16 STM Measurements of Spin-Polarized Currents Carried by the Topological Surfaces States of SmB₆ Nanowires, VIDYA MADHAVAN, University of Illinois at Urbana Champaign</td>
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<td>12:15</td>
<td>LI-WeM1-28 Closing Remarks and Thank You’s, SVITLANA PYLYPENKO, Colorado School of Mines</td>
<td>LI-WeM2-28 Closing Remarks and Thank You’s, CAITLIN HOWELL, University of Maine</td>
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<td>Time</td>
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<td>Title</td>
<td>Speaker(s)</td>
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<td>12:50pm</td>
<td>LI-WeA1-1</td>
<td>Welcome and Opening Remarks, ERIC JOSEPH, IBM T.J. Watson Research Center</td>
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<tr>
<td>12:55pm</td>
<td>INVITED: LI-WeA1-2</td>
<td>The Development of Atomic Layer Processes for Scaling &amp; Future Device Architectures, RUDY WOJTECKI, International Business Machines (IBM) - Almaden Research Center</td>
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<tr>
<td>1:15pm</td>
<td>INVITED: LI-WeA1-6</td>
<td>Recent Innovations in ToF-Sims and Their Industrial Applications, JULIA ZAKEL, IONTOF GmbH, Germany</td>
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<tr>
<td>1:35pm</td>
<td>INVITED: LI-WeA1-10</td>
<td>Microscopic Visualization of Electron Correlations in TMD Moiré Superlattices, SHAOWEI LI, University of California at San Diego</td>
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<tr>
<td>2:05pm</td>
<td>INVITED: LI-WeA1-16</td>
<td>Characterizing Unconventional Strain and Bending in 2D Materials and Heterostructures with Aberration-Corrected STEM, PINSHANE HUANG, E. Han, J. Yu, C. Lee, D. Luo, A. Khan, T. Santos, S. Kang, W. Zhu, N. Sobh, A. Schleife, B. Clark, E. Ertekin, A. van der Zande, University of Illinois at Urbana-Champaign, USA</td>
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<td>2:25pm</td>
<td>INVITED: LI-WeA1-20</td>
<td>Chemistry in Confined Spaces: 2D-Porous Silicates on Metal Supports, J. ANIBAL BOSCOBONIK, Brookhaven National Laboratory</td>
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<td>3:05pm</td>
<td>LI-WeA1-28</td>
<td>Closing Remarks and Thank You's, ART UTZ, Tufts University</td>
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<tr>
<td>12:50pm</td>
<td>LI-WeA2-1</td>
<td>Welcome and Opening Remarks, CHARLES R. EDDY, JR., Office of Naval Research Lab</td>
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<tr>
<td>12:55pm</td>
<td>INVITED: LI-WeA2-2</td>
<td>X-Rays Approaching Neutrons: RIXS with Ultrahigh Resolution and Applied Magnetic Field to Study a Magon-spinon dichotomy in β-Li₂IrO₃, ALEX FRANO, University of California, San Diego</td>
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<td>1:15pm</td>
<td>INVITED: LI-WeA2-6</td>
<td>X-Ray Spectroscopies With Increased Resolution: Principles and Perspectives, LUCIA AMIDANI, ESRF, France</td>
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<td>2:05pm</td>
<td>INVITED: LI-WeA2-16</td>
<td>Engineering Superconducting Quantum Systems, DONNA RUTH YOST, J. Yoder, MIT Lincoln Laboratory</td>
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<tr>
<td>2:25pm</td>
<td>INVITED: LI-WeA2-20</td>
<td>Micro-Scale Fusion and Neutron Generation from Nanowire Arrays Irradiated With Ultrashort Laser Pulses of Relativistic Intensity, JORGE ROCCA, A. Curtis, C. Calvi, Colorado State University; J. Tinsley, Mission Support and Test Services; S. Wang, R. Hollinger, H. Song, Colorado State University; M. Capeluto, Colorado State University, USA, Universidad de Buenos Aires, Buenos Aires, Argentina; Y. Wang, V. Shlyaptsev, Colorado State University; V. Kaymak, A. Pukhov, Heinrich-Heine-Universität Düsseldorf, Germany</td>
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<td>3:05pm</td>
<td>LI-WeA2-28</td>
<td>Closing Remarks and Thank You’s, RACHAEL MYERS-WARD, U.S. Naval Research Laboratory</td>
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2D Materials Contributed On Demand Session

2D Materials Contributed On Demand Session
8:00am

2D-Contributed On Demand-1 Direct Imaging and Interaction Spectroscopy of Atomic-Scale Ripples on MoS2 via Atomic Force Microscopy, O. Dagdeviren, McGill University, Canada; O. Aciqgoz, University of California Merced; P. Grütter, McGill University, Canada; Mehmet Z. Baykara, University of California Merced

2D-Contributed On Demand-4 CVD Growth and Characterization of Ferromagnetic Manganese (IV) Selenide Epitaxial Graphene Heterostructures, Ihteyaz Aqeed Avash, M. Pedewitz, G. Cassuto, K. Daniels, University of Maryland, College Park

2D-Contributed On Demand-7 Room Temperature Chemical Sensors Based on Molybdenum Disulphide Nanoflakes/Epitaxial Graphene Heterostructure, Sooram Kim, University of Maryland College Park; J. Park, Korea Research Institute of Standards and Science, Korea (Republic of); M. Pedewitz, D. Lewis, University of Maryland College Park; S. Lee, The Ohio State University; B. Uppalpati, D. Khan, F. Bayram, G. Kolev, Clemson University; S. Kang, Korea Research Institute of Standards and Science, Korea (Republic of); K. Daniels, University of Maryland College Park

2D-Contributed On Demand-10 Structural Characterization of Cobalt Sulphide Sheets Supported on Au(111), Mahesh Krishna Prabhu, J. Groot, Leiden University, Netherlands

2D-Contributed On Demand-13 Edge Channels of Broken Symmetry Quantum Hall States in Graphene probed by Atomic Force Microscopy, Sungmin Kim, J. Schweik, National Institute of Standards and Technology (NIST)/University of Maryland, College Park; D. Wolkup, National Institute for Science and Technology (NIST); Y. Zeng, Columbia University; F. Ghahari, National Institute of Standards and Technology (NIST)/University of Maryland, College Park; S. Le, National Institute of Standards and Technology (NIST); M. Slot, National Institute for Science and Technology (NIST); J. Berwanger, University of Regensburg, Germany; S. Blankenship, National Institute for Science and Technology (NIST); F. Giessibl, University of Regensburg, Germany; N. Zhitelev, National Institute for Science and Technology (NIST); C. Dean, Columbia University; J. Stroscio, National Institute for Science and Technology (NIST)

2D-Contributed On Demand-16 Band Gap Tuning in Lateral Heterostructures of MoSe2, WSe2, WSe2, Ternary Alloys, Florence Ann Nugera, P. Saoah, University of South Florida; Y. Xin, National High Magnetic Field Laboratory, Florida State University; H. Gutierrez, University of South Florida

2D-Contributed On Demand-19 Nonuniform Debye Temperatures in Quasi-One-Dimensional TiS2 and ZrS2, Archit Dhingra, P. Dohben, University of Nebraska-Lincoln, USA

2D-Contributed On Demand-22 3D Spin Polarized – Angle Resolved Photoemission Spectroscopy (SP-ARPES) setup at IMDEA Nanoscience, Beatriz Muñiz Cano, M. Valbuena Martinez, IMDEA Nanoscience, Spain

2D-Contributed On Demand-25 Tuning Ferromagnetic Properties of Monolayer CrI3 via Molecular Adsorption, Jho Yang, B. Shong, Hongik University, Korea (Republic of)

2D-Contributed On Demand-28 Electron Emission from Quasi-free-standing Bilayer Epitaxial Graphene Microstructures, Daniel Lewis, K. Daniels, University of Maryland, College Park

2D-Contributed On Demand-31 From Energy Dissipation on Dirac Materials to Intermediate Stages of Hexagonal Boron Nitride Growth, Anton Tantawi Ö, A. Ruckhofer, Graz University of Technology, Austria; N. Aivdas, University of Cambridge, UK; M. Zacchi, University of Surrey, UK; M. Brehmholz, Hofmann, Aarhus University, Denmark; G. Benedek, University of Milano-Bicocca, Italy; W. Allison, University of Cambridge, UK

2D-Contributed On Demand-34 Observation of Intra-Unit-Cell Nematic Order in Epitaxial Bilayer FeSe Films on SrTiO3(001), Lian Li, H. Zhang, West Virginia University, USA; M. Weinert, University of Wisconsin, Milwaukee

2D-Contributed On Demand-37 Phase Dependent Nanoscale Friction on Two Dimensional Layers, Dooho Lee, H. Lee, J. Park, Korea Advanced Institute of Science and Technology (KAIST) & Institute for Basic Science (IBS), Korea (Republic of)

2D-Contributed On Demand-40 A Full Gap Above the Fermi Level: The Charge Density Wave of Monolayer VS2, C. van Efferen, II. Physikalisches Institut, University of Cologne, Germany; J. Berges, Institut für Theoretische Physik, University Bremen, Germany; J. Hall, II. Physikalisches Institut, University of Cologne, Germany; E. van Loon, Institut für Theoretische Physik, University Bremen, Germany; S. Kraus, II. Physikalisches Institut, University of Cologne, Germany; A. Schubert, Institut für Theoretische Physik, University Bremen, Germany; T. Wekking, F. Hutmans, E. Ploeg, II. Physikalisches Institut, University of Cologne, Germany; N. Rotenberg, Fakultät für Physik und Center for Nanointegration, University Duisburg-Essen, Germany; K. Ollens, Fakultät für Physik und Center für Nanointegration, University Duisburg-Essen, Germany; L. Machado-Arruda, Institut für Experimentalphysik, FU Berlin, Germany; N. Brookes, European Synchrotron Research Facility, France; G. Schönhoff, Institut für Theoretische Physik, University Bremen, Germany; K. Kummer, European Synchrotron Research Facility, France; H. Wende, Fakultät für Physik und Center für Nanointegration, University Duisburg-Essen, Germany; T. Wehling, Institut für Theoretische Physik, University Bremen, Germany; Thomas Michely, II. Physikalisches Institut, University of Cologne, Germany

2D-Contributed On Demand-43 Ferroelectric Meet Ions in the Land of van der Waals, Petro Maksymovych, S. Neumayer, Oak Ridge National Laboratory; A. Ohara, S. Ponterlides, Vanderbilt University; N. Bulke, Oak Ridge National Laboratory

2D-Contributed On Demand-46 Multicomponent Monolayer Manipulation Through Successive Ultraviolet Irradiation, Cynthia Gerber, University of Connecticut

2D-Contributed On Demand-49 Thermally Induced Complex Reactions Pathways between WS2 and Au-Substrates, A. Costine, University of Virginia, USA; J. Fonseca Vega, J. Robinson, C. Cress, Naval Research Laboratory, USA; Petra Reinke, University of Virginia, USA

2D-Contributed On Demand-52 The (Mostly) Unwelcome Guest in 2D Chalcogenides: Native oxidation rates and the effects of oxygen during processing MoS2, TiS2, and ZrS2, Rafael Jaramillo, Massachusetts Institute of Technology

2D-Contributed On Demand-55 Correlational Analysis Strategies for Transition Metal Dichalcogenides, Umberto Celano, IMEC, Belgium


2D-Contributed On Demand-61 Measuring Surface Phonon Dispersion, Timo Watjen, Scienta Omicron, Sweden

2D-Contributed On Demand-64 Two Dimensional TMDs Based Thermo-Electric Devices for Energy Harvesting from Waste Heat, Sangram Pradhan, M. B moye, M. Behera, M. Bahoua, Norfolk State University

2D-Contributed On Demand-67 Behind the Scenes of Electron Induced Deposition of Amorphous-BN on Graphene - A Surface Science Study, Virginia Boix, Lund University, Sweden; C. Struzzi, MaxIV laboratory, Sweden; T. Gallo, N. Johansson, G. D’Acunto, Z. Yong, Lund University, Sweden; A. Zakharyev, MaxIV laboratory, Sweden; L. L. Aarhus University, Denmark; J. Schmidt, A. Mikkelsen, J. Knudsen, Lund University, Sweden

2D-Contributed On Demand-70 Formation, Structure and Properties of 2D Silica and Transition Metal Silicates on Gold, N. Doudin, K. Sarris, S. Ismail-Beigi, Eric Altman, Yale University

2D-Contributed On Demand-73 Transition Metal -Silicates at the 2-D Limit, Nassar Doudin, K. Sarris, S. Ismail-Beigi, E. Altman, Yale University

2D-Contributed On Demand-76 Designing Transition Metal Dichalcogenide Alloys for Photonic Integrated Circuit Applications, Yifei Li, R. Jaramillo, Massachusetts Institute of Technology


2D-Contributed On Demand-82 Two-Dimensional High-Entropy Transition Metal Dichalcogenide Alloys, Atilya Deshpande, University of California Los Angeles; C. Ratsch, Institute for Pure and Applied Mathematics, UCLA; C. Ciobanu, Colorado School of Mines, USA; S. Kodambaka, University of California Los Angeles

2D-Contributed On Demand-85 Doping of MoTe2 via Surface Charge Transfer in Air, Cristian Ciobanu, Colorado School of Mines, G. Stan, NIST, S. Likith, Colorado School of Mines; A. Rani, S. Zhang, C. Hacker, S. Krylyuk, A. Davydov, NIST
2D-Contributed On Demand-88 Stacking-Dependent Optical Properties in Bilayer WS$_2$, **Kathleen McCreary**, M. Phillips, Naval Research Laboratory; H. Chuang, NOVA Research; D. Wickramaratne, Naval Research Laboratory; M. Rosenberger, University of Notre Dame; C. Hellberg, B. Jonker, Naval Research Laboratory


2D-Contributed On Demand-94 Electrical Transport Properties of N- and P-Doped InSe: Bulk Crystals Versus Exfoliated Layers, **Zheng Sun**, The George Washington University; S. Krylyuk, National Institute of Standards and Technology; P. Vora, George Mason University; M. Zaghloul, The George Washington University; A. Dasydov, National Institute of Standards and Technology

2D-Contributed On Demand-97 Electronic Characterization Using Scanning Tunneling Microscopy and Spectroscopy of Solution-Synthesized Graphene Nanoribbons With Functional Groups, **Abigail Berg**, University of Illinois at Urbana-Champaign; G. Li, A. Smitiuk, University of Nebraska - Lincoln; J. Lyding, University of Illinois at Urbana-Champaign

2D-Contributed On Demand-100 Observation of Electrically Tunable van Hove Singularities in Twisted Bilayer Graphene from NanoARPES, **Ryan Muzzio**, Carnegie Mellon University; A. Jones, P. Majchrzak, S. Pakdel, Aarhus University, Denmark; D. Curcio, aarhus University, Denmark; K. Volkaert, D. Biswas, Aarhus University, Denmark; J. Gobbo, S. Singh, Carnegie Mellon University; J. Robinson, Naval Research Laboratory; K. Watanebe, T. Taniguchi, National Institute for Materials Science, Japan; T. Kim, C. Cacho, Diamond Light Source, UK; N. Lonata, J. Miwa, P. Hofmann, S. Ulstrup, aarhus University, Denmark; J. Katcoh, Carnegie Mellon University

2D-Contributed On Demand-103 2020 AVS Graduate Research Awards: Scanning Tunneling Microscopy Studies of Carbon-Based Nanostructures Grown Through Competing On-Surface Interactions and Chemistry, **Jeremy Schultz**, N. Jiang, University of Illinois at Chicago

2D-Contributed On Demand-106 Band Structure and Electronic Properties of Edge-Functionalized Germanene Nanoribbons, **Alexander Goldstone**, Q. Li, George Mason University

2D-Contributed On Demand-109 Non-Enzymatic Electrochemical Sensing of H$_2$O$_2$ Based on 2d Tellurene, **sa Dennis**, F. Yan, M. Garcia Cervantes, B. Chitara, North Carolina Central University

2D Materials Room On Demand - Session 2D-Invited On Demand

2D Materials Invited On Demand Session 8:00am

**INVITED: 2D-Invited On Demand-7** Tuning Energy Levels and Energy Flow in Nanomaterials Using the External Environment, **Archana Raja**, Lawrence Berkeley National Laboratory

**INVITED: 2D-Invited On Demand-13** Atomic-Scale Study and Engineering of Low-Dimensional Materials, **Jani Kotakoski**, University of Vienna, Austria

**INVITED: 2D-Invited On Demand-19** Electronic Structures of Two-Dimensional Topological Materials, **Sung-Kwan Mo**, Lawrence Berkeley National Laboratory

**INVITED: 2D-Invited On Demand-25** 2020 AVS Medard W. Welch Award Lecture: Chemically Tailoring Interfaces in Two-Dimensional Heterostructures, **Mark Hersam**¹, Northwestern University

**INVITED: 2D-Invited On Demand-31** First-Principles Calculations of 2D Materials for Gas Sensing Applications, **Udo Schwingenschlogl**, KAUST, Saudi Arabia

**INVITED: 2D-Invited On Demand-37** Modeling the Growth of 2D Crystals: Analytical, Phase-Field and Machine Learning Methods, **Vivek Shemy**, University of Pennsylvania

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**Actinides and Rare Earths Focus Topic**

**Room On Demand - Session AC-Contributed On Demand Actinides and Rare Earths Contributed On Demand Session 8:00am**

**AC-Contributed On Demand-1** Characterization of Uranium Oxide Corrosion Using a Microfluidic Electrochemical Cell, **Jennifer Yao**, E. Buck, S. Tripathi, N. Lahiri, E. Ilton, S. Riechers, D. Reilly, Pacific Northwest National Laboratory; S. Chatterjee, TerraPower LLC; X. Yu, Pacific Northwest National Laboratory

**AC-Contributed On Demand-4** Observation of Multiple Dirac States in a Magnetic Topological Material EuMg$_2$Bi, **Firoza Kabir**, University of Central Florida; M. Hasen, University of Central Florida; F. Cheenicide-Kabeer, A. Aperis, Uppsala University, Sweden; X. Ding, Idaho National Laboratory; G. Dhalak, K. Dimitri, C. Sims, S. Regni, L. Persaud, University of Central Florida; K. Gofyryk, Idaho National Laboratory; P. M. Oppeneer, Uppsala University, Sweden; D. Kozorowski, Polish Academy of Sciences, Poland; M. Neupane, University of Central Florida

**AC-Contributed On Demand-10** Tuning Formation of Large Uranium Oxide Cluster Ions from the Surface of Depleted Uranium Under Static Bombardment Using Ga+ During ToF-SIMS, **Shohini Sen-Britain**, A. Nelson, Lawrence Livermore National Laboratory

**AC-Contributed On Demand-13** Hybridization Effect on the X-Ray Absorption Spectra for Actinide Materials, W. Chiu, University of California at Davis; R. Tutchton, Los Alamos National Laboratory; G. Resta, University of California at Davis; T. Lin, Rutgers University; E. Bauer, F. Ronning, Los Alamos National Laboratory; R. Scalettar, University of California at Davis; **Jian-Xin Zhu**, Los Alamos National Laboratory

**AC-Contributed On Demand-16** EXAFS as a Probe of Actinide Oxide Formation in the Tender X-Ray Regime, **James Tobin**, University of Wisconsin- Oshkosh; S. Nowak, SLAC National Accelerator Laboratory; S. Yu, Lawrence Livermore National Lab; R. Alonso-Mori, T. Kroll, D. Nordlund, T. Weng, D. Sorkar, SLAC National Accelerator Laboratory

**AC-Contributed On Demand-19** Detection of Covalency in Pu(IV) Materials: Spectroscopic and Computational Tools, **Bianca Schacherl**, Karlsruhe Institute of Technology (KIT), Institute for Nuclear Waste Disposal (INE), Germany; P. Bagus, Center for Advanced Scientific Computing and Modeling (CASCaM) Department of Chemistry University of North Texas; A. Beck, Karlsruhe Institute of Technology (KIT), Institute for Nuclear Waste Disposal (INE), Germany; M. Taglavi, Heidelberg University, Institute for theoretical physics, Germany; M. Trumm, Karlsruhe Institute of Technology (KIT), Institute for Nuclear Waste Disposal (INE), Germany; M. Haverkort, Heidelberg University, Institute for theoretical physics, Germany; T. Vitova, Karlsruhe Institute of Technology (KIT), Institute for Nuclear Waste Disposal (INE), Germany

**AC-Contributed On Demand-22** Interrogating the Surface Chemistry of Nanoscale Uranium Oxides, **Liane Moreau**, H. Johnson, Washington State University

**AC-Contributed On Demand-25** Broadening of the XPS Spectra of U Oxides, C. Nelin, Consultant; **Paul S. Bagus**, University of North Texas

**AC-Contributed On Demand-28** XPS, UPS Study of Pure and Alloyed U Hydrides, **Oleksandra Koloskova**, E. Tereshina-Chitrova, M. Paukov, Charles University, Prague, Czech Republic; T. Gauder, European Commission, JRC, Institute for Transuranium Elements, Germany; J. Koleren, Institute of Physics, Czech Academy of Sciences, Czechia; L. Havela, Charles University, Prague, Czech Republic

**AC-Contributed On Demand-31** Development of the High-T CDW in REPt$_5$S$_6$, **Volodymyr Buturil', P. Dolezal, Charles University, Czechia; E. Duverger-Nedellec, Sorbonne Université, France; A. Andreu, Institute of Physics of the Czech Academy of Sciences, Czechia; M. Folkowski, Institute of Molecular Physics, Poland; K. Gofyryk, Idaho National Laboratory; L. Havela, Charles University, Czech Republic

**AC-Contributed On Demand-34** Electronic Structure and Spectroscopy of UH$_3$ from the LDA+DMFT Perspective, **B. Chatterjee**, **Jindrich Kolecnen**, Institute of Physics, Czech Academy of Sciences, Prague, Czechia

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¹ AVS 2020 Medard W. Welch Awardee
AS-Contributed On Demand-1 Peeling the Onion: Argon Cluster Sputtering Reveals the Internal Distribution of Species in Organic Nanoparticles, Y. Pei, J. Voring, R. Haveland, D. Cant, Alexander Shard, National Physical Laboratory, UK

AS-Contributed On Demand-4 Buried Interface and Buried Film Analysis Using Lab-Scale Haxpe Spectrometers, Thierry Conard, C. Zborowski, A. Vanleenheuve, I. Hofijk, I. Vaesen, P. van der Heide, IMEC, Belgium

AS-Contributed On Demand-7 Non-Destructive Chemical Characterization and Thickness Determination of Layer Stacks by Laboratory-Based Hard X-Ray Photoelectron Spectroscopy, Anja Vanleenheuve, T. Conard, C. Zborowski, I. Hofijk, P. van der Heide, IMEC, Belgium; K. Artyushkova, D. Watson, Physical Electronics USA

AS-Contributed On Demand-10 Temperature Dependent Changes in Surface Chemistry of SrTiO\textsubscript{3} Analyzed With XPS, Cluster Depth Profiling and Ion Scattering Spectroscopy, Paul Mack, Thermo Fisher Scientific, UK

AS-Contributed On Demand-13 LiTaO\textsubscript{3}(110) Nano-Bonding with Si-based Materials via Surface Energy Engineering (SEE) and Three Liquid Contact Angle Analysis (3LCAA), Shefali Prakash, A. Elison, S. Swaminathan, M. Sahal, Arizona State University; B. Baker, J. Kinta, Intel Corporation; A. Yano, Texas A&M University; S. Narayan, University of Pennsylvania; A. Brinhall, Micron Technology; L. Puglisi, R. Culbertson, N. Herbots, Arizona State University

AS-Contributed On Demand-16 Understanding Interphase Formation in Nano-Bonding\textsuperscript{TM} Of Gaas to Si in Air at T ≤ 220°C via Surface Energy Engineering Based on 3CIAA, IBA, XPS, SAM and TEM, A. Gurijala, N. Suresh, A. Chow, S. Khanna, M. Sahal, Arizona State University Physics Department; S. Ram, Yale University; T. Diaz, M. Bertram, C. Cornejo, W. Peng, T. Balasooriya, T. Karcher, Arizona State University Physics Department; R. Culbertson, Arizona State University Physics Department; K. Kavanagh, Simon Fraser University, Canada; N. Herbots, Arizona State University Physics Department; Pranav Penmatcha, S. Jandhyalo, Arizona State University

AS-Contributed On Demand-19 Computed Surface Vibration Modes, IR Absorption and Gibbs Free Energy for LiTaO\textsubscript{3}(110) and LiNbO\textsubscript{3}(110) Correlation with Surface Energies Measured via 3CIAA, Mohammed Sahal, A. Elison, S. Prakash, S. Swaminathan, R. Rane, L. Puglisi, B. Baker, R. Culbertson, N. Herbots, Arizona State University


AS-Contributed On Demand-25 Deep Depth profiling using Gas Cluster SIMS – Micrometer Topography Development and Effects on Depth Resolution, Shin Muramoto, NTST; D. Graham, University of Washington

AS-Contributed On Demand-28 Effects of Li Deintercalation in the Electronic Structure of Li\textsubscript{2}Co\textsubscript{2}O\textsubscript{3} Epitaxial Thin Films, Elena Salagre, Dto. Fisica Materia Condensada, Univ Autonoma de Madrid, Spain; P. Segovia, Univ Autonoma de Madrid, IFIMAC, Spain; M. Gonzalez-Barrio, Univ. Complutense de Madrid, Spain; J. Pearson, University of Maryland; J. Tomekhi, University of Maryland; E. Fuller, A. Talin, Sandia National Laboratories; M. Juguav, P. Mora, Institut de Struttura della Materia, Consiglio Nazionale delle Ricerche, Italy; A. Mascaroque, Dto. Fisica de Materiales, Fac. Ciencias Fisicas, Univ. Complutense de Madrid, Spain; E. Garcia-Michel, Univ. Autonoma de Madrid, IFIMAC, Spain


AS-Contributed On Demand-34 Using Polyamide Films Grown by Molecular Layer Deposition (MLD) on Si(111) to Form 3C-SiC Thin Film, Rustam Amashov, Dagestan State University, Russian Federation; I. Abdulgagitov, Dagestan State University, Russian Federation


AS-Contributed On Demand-40 Surface Characterisation of sp\textsuperscript{2} Carbon Materials – From Graphene to Nuclear Graphite, Sarah Coutts, J. Counsell, N. Gerrard, Kratos Analytical Limited, UK; C. Meffett, Kratos Analytical Inc; C. Blomfield, Kratos Analytical Limited, UK


AS-Contributed On Demand-52 Coincident XPS and Raman Analysis of Drug Composition Phases in a Pain-Killing Tablet, Paul Mack, Thermo Fisher Scientific, UK


AS-Contributed On Demand-58 Quantum Considerations About the Magic Angle in XPS Equipment, Alberto Herrera-Gómez, Cinvestav-Universidad Queretaro, Mexico

AS-Contributed On Demand-61 Optimization and Characterization of Isotopically-Labeled, Epitaxial Fe\textsubscript{3}O\textsubscript{4} and Cr\textsubscript{2}O\textsubscript{3} for Diffusion Studies, Tiffany Kaspar, S. Taylor, K. Yano, Pacific Northwest National Laboratory; T. Lach, Oak Ridge National Laboratory; Y. Zhou, Pacific Northwest National Laboratory, USA; Z. Zhu, Pacific Northwest National Laboratory; A. Kohnert, Los Alamos National Laboratory; E. Still, P. Hosenmann, University of California at Berkeley; D. Schreiber, Pacific Northwest National Laboratory

AS-Contributed On Demand-64 Adsorption Study of L-Cysteine Self-Assembled Monolayers on Au (100) Surface by Scanning Tunnelling Microscopy and Ab-Initio Methods, V. Franco, S. Rodriguez-Sotelo , Instituto de Fisica del Litoral (CONICET-UNL), Argentina; G. Ruano-Sandaval, Centro Atómico Bariloche (CNEA), Argentina; M. Passegger (b), Instituto de Fisica del Litoral (CONICET-UNL), Argentina; Florencio Calaza, Instituto de Desarrollo Tecnológico para la Industria Quimica (CONICET-UNL), Argentina

AS-Contributed On Demand-67 Navigating Disorder in Superconductors Using Atomic-Scale Imaging and Machine Learning, Petro Maksymovich, Oak Ridge National Laboratory


AS-Contributed On Demand-73 Surface Functionalization and Atomic Layer Deposition of Binary Metal Oxides on MoS\textsubscript{2} Surfaces, Theodossia Gougousi, J. Kropp, C. Ataca, UMBC


AS-Contributed On Demand-79 Hydrogen Detection by SnO\textsubscript{2}-Based Core-SHELL Nanowires With Varying Shell Thicknesses Grown by Atomic Layer Deposition, Muhammad Hamid Raza, Humboldt-Universität zu Berlin, Germany; N. Rau, E. Comini, University of Brescia, Italy; N. Pinna, Humboldt-Universität zu Berlin, Germany


Atomic Scale Processing Focus Topic
Room On Demand - Session AP-Contributed On Demand
Atomic Scale Processing Contributed On Demand Session 8:00am

AP-Contributed On Demand-1 CuO: Spontaneous Etching By Acetylacetone and Cu Atomic Layer Etching Using Sequential O2 or O3 and Acetylacetone Exposures, Aziz Abdulagatov, J. Partridge, University of Colorado at Boulder; V. Sharma, C. Develiah, ASM Microchemistry Ltd., Finland; S. George, University of Colorado at Boulder

AP-Contributed On Demand-4 In-situ Analysis of Surface Reactions for Plasma-Assisted Thermal-Cyclic Atomic Layer Etching of Tantalum Nitride, Kazunori Shinoda, Hitachi; M. Hasegawa, Nagoya University, Japan; H. Hamamura, Hitachi; K. Maeda, K. Yokogawa, M. Izawa, Hitachi High-Tech, Japan; K. Ishikawa, M. Hori, Nagoya University, Japan

AP-Contributed On Demand-7 A first-principle Investigation of the ALD Selectivity Driving Forces for the Area Deposition of TiO2, Yukio Kanoeda, Sony Semiconductor Solutions Corporation, Japan; E. A. Marques, Katholieke Universiteit Leuven, Belgium; J. Armini, A. Delabie, M. van Setten, G. Pourtois, IMEC, Belgium

AP-Contributed On Demand-10 Scaling of InGaZnO to sub-40nm Regime Using Advanced Etch Techniques, Shreyo Kundu, F. Lazaroing, IMEC, Belgium

AP-Contributed On Demand-13 A Theoretical Investigation Into the Oxidative Etching of Ruthenium, Neung-Kyung Yu, B. Shang, Hongik University, Korea (Republic of); J. Lee, W. Kim, Hanyang University, Korea (Republic of)

AP-Contributed On Demand-16 Blocking Thermal Atomic Layer Etching With Removable Etch Stop Layers, David Zywotko, TEL Technology Center, America, LLC; S. George, University of Colorado Boulder

AP-Contributed On Demand-19 Atomic Layer Etching of HFO2 and ZrO2 Landing on WS2: Transition Metal Dichalcogenide, Jean-Francois de Marneffe, D. Marinov, imec v.z.w., Belgium; A. Goodacre, Oxford Instruments Plasma Technology, UK; B. Groven, imec v.z.w., Belgium; P. Wyndbele, KU Leuven, Belgium; S. Kundu, imec v.z.w., Belgium; M. Cooke, Oxford Instruments Plasma Technology, UK; S. De Gendt, KU Leuven, Belgium


AP-Contributed On Demand-31 The Interplay of Diffusion and Size-Dependent Reactivity in Ruthenium Area-Selective Deposition, Jan-Willem Clerix, E. Marques, A. Delabie, KU Leuven / imec, Belgium

AP-Contributed On Demand-34 Thermal Atomic Layer Etching of Nickel and Cobalt Using SOCl2 and P(CH3)3, Jessica Murdzek, S. George, University of Colorado at Boulder

AP-Contributed On Demand-37 Molecular Mechanisms of Thermal Atomic Layer Etching of Cobalt, Iron, and their Alloys, Andrew Tepleyakov, University of Delaware


AP-Contributed On Demand-43 Mechanism of Thermal Dry Etching of Metallic Iron Thin Films Using Chlorine and Acetylacetone [acacH], Mohsa Konh, A. Tepleyakov, University of Delaware


AP-Contributed On Demand-49 Thermal Atomic Layer Etching of Al2O3 and AlN Using Hf or XeF2 for Fluorination and BCl3 for Ligand-Exchange, Austin Cano, S. George, University of Colorado at Boulder

AP-Contributed On Demand-55 Mechanisms of Thermal Atomic Layer Etching (ALE) of Metal by β-diketones, Abdulrahman H. Bashir, Center for Atomic and Molecular Technologies, Osaka University, Osaka, Japan; M. Krsčić, Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany; T. Ito, K. Karakoshi, Center for Atomic and Molecular Technologies, Osaka University, Osaka, Japan; W. Wenzel, Institute of Nanotechnology, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany; S. Hamaguchi, Center for Atomic and Molecular Technologies, Osaka University, Osaka, Japan

AP-Contributed On Demand-58 Orthogonal Bottom-up Nanopatterning of TiO2 on SiO2 and W on Si-H Using Thermal Atomic Layer Deposition and Etching, S. Song, Jungsik (Justin) Kim, G. Parsons, North Carolina State University

AP-Contributed On Demand-61 Experimental Study of Metal-Oxides Etch Selectivity, Hamid Razavi, University of California at Los Angeles; M. Shri, J. Hoang, T. Lil, Lam Research Corporation; J. Chang, University of California at Los Angeles

Atomic Scale Processing Focus Topic
Room On Demand - Session AP-Invited On Demand
Atomic Scale Processing Invited On Demand Session 8:00am

INVITED: AP-Invited On Demand-1 In-situ Characterization of the Earliest Stages of Selective ALD Growth and Inhibition, Alex Martinson, Argonne National Laboratory

INVITED: AP-Invited On Demand-7 Atomic Layer Processing Using Low-Energy Cluster Beam Irradiation, Noriaki Toyota, University of Hyogo, Japan; K. Uemotso, University of Hyogo, Japan, Afghanistan


INVITED: AP-Invited On Demand-19 Spectroscopic Ellipsometry for Atomic Scale Processing, Harm Knoops, Oxford Instruments Plasma Technology, Netherlands

INVITED: AP-Invited On Demand-25 Area-selective Atomic Layer Deposition of Palladium and Atomic Layer Etching of Palladium, H. Nallan, X. Yang, B. Coffey, John Ekardt, University of Texas at Austin

INVITED: AP-Invited On Demand-31 Strategies for a Selective Deposition Process Combining Deposition and Etching Steps in a Unique Tool, Christophe Vallée, SUNY POLY, Albany; M. Bonvalot, T. Yehghoyan, R. Volland, M. Jaffal, V. Pesce, LT3 - UGA/CNRS, France; A. Chaker, University of Manchester, UK; S. Belahcen, G. Lefebvre, B. Pelissier, LTO - UGA/CNRS, France; N. Possédé, R. Gassilloud, CEA/LETI University Grenoble Alpes, France


Biomaterial Interfaces Division
Room On Demand - Session Bi-Contributed On Demand
Biomaterial Interfaces Contributed On Demand Session 8:00am

Bi-Contributed On Demand-1 A Mussel Inspired Catechol Polymer: Is It Sticky?, Laura Meurs, J. Appenroth, M. Valtiner, Vienna University of Technology, Austria

CA-Contributed On Demand-4 Operando Spatial-Temporal Potential Mapping of Ionic Liquid Polarization in a Coplanar Electrochemical Device Using Xps and Sem Comparatively, Sefik Suzer, Bilkent University, Turkey; E. Strelcov, A. Kolmakov, National Institute of Standards and Technology (NIST)


CA-Contributed On Demand-10 Algorithms for Automatic Analysis of Image Based Process Control and Its Implementation from Lab to Fab, Julien Baderot, H. Ozdoba, D. Misra, N. Clement, S. Martinez, J. Foucher, POLLEN METROLOGY, France

CA-Contributed On Demand-13 Factors Influencing Surface Carbon Contamination in Ambient-Pressure X-Ray Photoelectron Spectroscopy Experiments, Nicolò Comini, Z. Novotny, J. Diulius, University of Zurich, Switzerland; T. Huthweiler, Paul Scherrer Institut, Switzerland; J. Osterwalder, University of Zurich, Switzerland

CA-Contributed On Demand-16 Effects of Electrolytes on the Oxidation and Corrosion of Iron Interfaces Using PM-IRRAS, Kathryn Perrine, Michigan Technological University

CA-Contributed On Demand-19 in situ XPS for Catalysis; Up to and Above One Bar, Christopher Goodwin, Stockholm University, Sweden; P. Loomer, Deutsches Elektronen-Synchrotron, Germany; M. Shipilin, D. Degerman, P. Aman, Å. Nilsson, Stockholm University, Sweden

CA-Contributed On Demand-22 Electrically Detected Magnetic Resonance & Near-Zero Field Magnetoresistance in 256Si/256SiO2, Elias Frantz, Penn State University; D. Michalak, Intel Corp.; N. Harmon, University of Evansville; E. Henry, Intel Corp.; M. Flatte, University of Iowa; S. King, J. Clarke, Intel Corp.; P. Lenahan, Penn State University

CA-Contributed On Demand-25 Atomic-Scale Dynamics of Epitaxial Oxide Growth During Cu Oxidation Revealed by in Situ ETEM and DFT, Meng Li, M. Curnan, S. House, W. Saidi, J. Yang, University of Pittsburgh

Chemical Analysis and Imaging at Interfaces Focus Topic Room On Demand - Session CA-Invited On Demand Chemical Analysis and Imaging at Interfaces Invited On Demand Session

8:00am

INVITED: CA-Invited On Demand-7 Measuring the Depth Profiles of Surfactants, Ions, and Solvent at the Angstrom Scale, X. Zhao, University of Wisconsin - Madison; G. Andersson, Flinders University, Australia; Gilbert Nathanson, University of Wisconsin - Madison

INVITED: CA-Invited On Demand-13 In-Situ/Operando Soft X-Ray Spectroscopy Characterization of Chemical Interfaces, Y. Liu, X. Feng, Lawrence Berkeley National Laboratory (LBNL); Jinghua Guo, Lawrence Berkeley National Laboratory

INVITED: CA-Invited On Demand-19 Direct-Write Electron Beam Processing of Topologically Complex Functional Nanomaterials using Thermo-Electrically Energized Multiphase Precursor Jets, Andrei Fedorov, Georgia Institute of Technology

INVITED: CA-Invited On Demand-25 From Bulk to Constriction: Scaling Analysis of Ionic Transport Through Nanopores and Channels, Michael Zwolak, NIST; S. Sahu, University of Colorado at Boulder

Electronic Materials and Photonics Division

Room On Demand - Session EM-Contributed On Demand Electronic Materials and Photonics Contributed On Demand Session 8:00am


EM-Contributed On Demand-4 Designing Transition Metal Doped Lithium Fluoride Composite Cathode Materials For Li-Ion Batteries, Clifford Denize, S. Danquah, J. Strimaitis, Center for Materials Research Norfolk State University; C. Bonner, Chemistry Department Norfolk State University and Center for Materials Research Norfolk State University; S. Pradhan, M. Behera, Center for Materials Research Norfolk State University; M. Bahoura, Engineering Department Norfolk State University and Center for Materials Research Norfolk State University


EM-Contributed On Demand-10 Wafer-Scale Fabrication of Nanostructured Carbon Thin Film-Based Electronic Devices, Zhigang Xiao, L. Williams, J. Elam, A. Jones, Q. Yuan, Alabama A&M University

EM-Contributed On Demand-13 Laser Induced Thermal Emission from Nickel Nanowires, Ana Silva, Cefitec, Physics Department, FCT, Universidade Nova de Lisboa, Portugal; K. Pedersen, Aalborg University, Denmark

EM-Contributed On Demand-16 Wake up and Endurance of Ferroelectric Hf0.5Zr0.5O2 on NbN and Nb, David Henry, Sandia National Laboratories; S. Fields, University of Virginia; S. Smith, P. Davids, Sandia National Laboratories; J. Ihlefeld, University of Virginia


EM-Contributed On Demand-22 2020 AVS Graduate Research Award Talk: Monolithic Integration of Crystalline III-Vs on Amorphous Substrates using a Combination of Epitaxial and Non-epitaxial Methods, Debarghya Sarkar1, Kapadia, University of Southern California


EM-Contributed On Demand-28 Berry Curvature Memory Through Stacking Transitions in Topological Semimetals, Jun Xiao, Stanford University; Y. Wang, UC Berkeley; H. Wang, Texas A&M University; C. Pennmaraju, SLAC National Accelerator Laboratory; S. Wang, UC Berkeley; P. Muscher, E. Sie, C. Nybo, T. Devereaux, Stanford University; X. Qian, Texas A&M University; X. Zhang, UC Berkeley; A. Lindenberg, Stanford University


EM-Contributed On Demand-37 High-Quality Molybdenum Nitride Schottky Diodes to n-Type Gallium Nitride, Alex Molina, I. Campbell, T. Welter, A. Agyapong, S. Mohney, Pennsylvania State University

EM-Contributed On Demand-40 Area-Selective Deposition/Patterning of Boron Carbide Layers with Atomic Layer Deposition, Raja Sekhar Bole, R. Thapa, L. Donsott, S. Wagner, A. Coruso, Department of Physics and Astronomy, University of Missouri - Kansas City; J. Bielefeld, S. King, Intel Corporation; M. Paquette, Department of Physics and Astronomy, University of Missouri - Kansas City


1 AVS 2020 Graduate Student Awardee
EM-Contributed On Demand-46 Low Temperature Fabrication of Cathodes for Lithium Thin Film Batteries, Wyatt Tenhoef, University of Rochester


EM-Contributed On Demand-52 Enhanced Luminescence of SiOx /SiO2 Multilayers Structures Obtained by Sputtering Technique, Almo Lizet Velez, K. Monfli, Research Center of Semiconductor Devices, Mexico; A. Morales, bNational Institute of Astrophysics, Optics and Electronics, Mexico; F. Morales, Center investigated of optics A.C. Mexico; F. Uribe, J. Luna, Z. Hernandez, Research Center of Semiconductor Devices, Mexico; A. Muñoz, Electronics Faculty. Meritorious University Autonomous of Puebla, Mexico

EM-Contributed On Demand-55 Optimized Deposition Conditions of Silicon Rich Nitride Obtained by Lpcvd to Achieve Down-Conversion Effect as Uv Absorption Coating on Solar Cells, Francisco Uribe-Gonzalez, K. Monfli, M. Dominguez, Research Center of Semiconductor Devices, Meritorious University Autonomous of Puebla, Mexico; M. Morena, National Institute of Astrophysics, Optics and Electronics, Mexico; A. Muñoz, Electronics Faculty. Meritorious University Autonomous of Puebla, Mexico; J. Hernandez, A. Salazar, Research Center of Semiconductor Devices, Meritorious University Autonomous of Puebla, Mexico


EM-Contributed On Demand-64 Ultrafast Switching of FeRh Memristors, Nicholas A. Blumenschein, G. Stephen, Laboratory for Physical Sciences; C. Cress, S. LaGasse, United States Naval Research Laboratory - Electronics Science and Technology Division; A. Hankbic, Laboratory for Physical Sciences; S. Bennett, United States Naval Research Laboratory - Materials Science and Technology Division; A. Friedman, Laboratory for Physical Sciences

EM-Contributed On Demand-67 Innovative Approach and Study of Transparent Conducting Oxide as Channel Materials for the Fabrication of Thin Film Transistors, Kelsey Yarbrough, S. Pradhan, M. Bahoura, Norfolk State University

EM-Contributed On Demand-70 Epitaxial Growth of Donor and Acceptor Doped β-Ga2O3 by Magnetron Sputter Deposition, Adetayo Adediji, Elizabeth City State University; J. Lawson, A. Reed, S. Pacley, J. Merritt, Air Force Research Lab

EM-Contributed On Demand-73 The Synthesis of NbSe2 by Molecular Beam Epitaxy for Thermomagnetic Energy Conversion, Peter Litwin, S. Akkonda, M. Zebarjadi, S. McDonnell, University of Virginia

EM-Contributed On Demand-76 Scaling of Atomic Layer Deposited Dielectrics on UV-O3 Functionalized WSe2, Maria Gabriela Sales, University of Virginia; S. Najmee, Army Research Laboratory; S. McDonnell, University of Virginia

Electronic Materials and Photonics Division
Room On Demand - Session EM-Contributed On Demand Electronic Materials and Photonics Invited On Demand Session
8:00am

INVITED: EM-Invited On Demand-1 Light Management Strategies for Photovoltaics: Luminescent Concentrators and Passive Cooling for Modules, Vivian Ferry, University of Minnesota, USA

INVITED: EM-Invited On Demand-7 Epitaxial Quantum Dots for Quantum Science and Technology, Sam Carter, J. Grim, A. Bracker, M. Yakes, M. Zalalutdinov, C. Kim, US Naval Research Laboratory; M. Kim, KeyW Corporation; D. Gammon, US Naval Research Laboratory

INVITED: EM-Invited On Demand-13 Van der Waals and remote epitaxy of complex materials, Jian Shi, Rensselaer Polytechnic Institute

INVITED: EM-Invited On Demand-19 Functional Oxide Materials for Silicon Photovoltaics, Kristopher Davis, University of Central Florida

INVITED: EM-Invited On Demand-25 Building MOFs from the Gas Phase at the Molecular Level - Active Surfaces by Combining Organics with Inorganics, Ola Nilsen, University of Oslo, Norway


Exhibitor Technology Spotlight Workshops
Room On Demand - Session EW-On Demand Exhibitor Technology Spotlight Contributed On Demand 8:00am


Fundamental Discoveries in Heterogeneous Catalysis Focus Topic
Room On Demand - Session HC-Contributed On Demand Fundamental Discoveries in Heterogeneous Catalysis Contributed On Demand Session 8:00am

HC-Contributed On Demand-1 Operando Structural Characterization of Co-Promoted MoS2 Nanoparticles Under Hydrodesulfurization Reaction Conditions Using the Reactor STM, Mahesh Krishna Prabhu, Leiden University, The Netherlands; I. Groot, Leiden University, Netherlands

HC-Contributed On Demand-4 Understanding Ligand-Directed Heterogeneous Catalysis: When the Dynamically Changing Nature of the Ligand Layer Controls the Hydrogenation Selectivity, Sweitala Schauermann, C. Schroeder, M. Schmidt, Kiel University, Germany

HC-Contributed On Demand-7 Derivatization Effect of Cobalt Phthalocyanine on the Catalytic Activity for Carbon Monoxide Reduction, Yutaro Umejima, J. Nakamura, The University of Electro-Communications (UEC-Tokyo), Japan

HC-Contributed On Demand-10 Surface Characterization and Methane Activation of SnO2/CuO/Cu(111) Inverse Model Catalysts, Jindong Kang, Stony Brook University; J. Rodriguez, Brookhaven National Laboratory

HC-Contributed On Demand-13 Crystal Plane Effect of CuO Clusters on the Catalytic Performance of Pt/CuO under CO Oxidation, Seunghwa Hong, H. Choi, D. Kim, J. Park, Korea Advanced Institute of Science and Technology (KAIST) & Institute for Basic Science (IBS), Korea (Republic of)

HC-Contributed On Demand-16 Catalytic Synergy on PtNi Bimetal Catalysts Driven by Interfacial Intermediate Structure, Taek-Seung Kim, Korea Advanced Institute of Science and Technology (KAIST) & Institute for Basic Science (IBS), Korea (Republic of); J. Kim, Institute for Basic Science (IBS), Korea (Republic of); H. Song, D. Kim, J. Park, Korea Advanced Institute of Science and Technology (KAIST) & Institute for Basic Science (IBS), Korea (Republic of)

HC-Contributed On Demand-19 Reactivity of Butanol on TiO2/Au(111) Inverse Model Catalysts, Lyssa Garber, A. Galgano, C. Rogers, A. Baber, James Madison University

HC-Contributed On Demand-22 Surface-Dependent Selectivity of Ethanol With TiO2 Modified Au(111) Model Catalysts, Clayton Rogers, D. Boyle, M. DePonte, A. Baber, James Madison University

HC-Contributed On Demand-25 Active Sites and Structural Transformation of NiFeOx Catalysts during Electrocatalytic Oxygen Evolution Reaction: Effects of Catalyst Loading and Support, Xingyi Deng, D. Kaufman, D. Siorescu, National Energy Technology Laboratory

HC-Contributed On Demand-28 Activation of O2 on CeO2 Nanoparticle Surfaces by Electron Transfer, M. Bristes Helu, Instituto para el Desarrollo Tecnológico de la Industria Química INTEC (CONICET-UNL), Argentina; A. Norton, Department of Chemical Engineering, University of Delaware; S. Collins, Instituto para el Desarrollo Tecnológico de la Industria Química INTEC (CONICET-UNL), Argentina; D. Stocchiolo, J. Boscoboinik, Center for Functional Nanomaterials, Brookhaven National Laboratory; Florencio Colazo, Instituto para el Desarrollo Tecnológico de la Industria Química INTEC (CONICET-UNL), Argentina
HC-Contributed On Demand-31 Comparison of Single Rh Adatoms on A-Fe$_2$O$_3$(1-102) and TiO$_2$(110) Stabilized by Adsorbed Water, Lena Haager, F. Kraushofer, TU Wien, Austria; M. Eder, TU München, Germany; A. Rofanjani-Abbasi, G. Franceschi, M. Riva, P. Sombut, M. Atzmueller, M. Schmid, TU Wien, Austria; C. Franchini, Università di Bologna, Italy; U. Diebold, G. Parkinson, TU Wien, Austria

HC-Contributed On Demand-34 Polaron in Single Atom Catalysts: Case Study of Mn$_{12}$Au$_6$, P. Srivatsan, M. Atzmueller, M. Schmid, TU Wien, Austria; M. Reticcioli, University of Vienna, Austria; M. Meier, G. Parkinson, TU Wien, Austria; C. Franchini, University of Vienna, Austria

HC-Contributed On Demand-37 Conformer-Selective Adsorption of 1-Propanol on Ag(111) from Theoretical Analysis of Experimental Reflection Absorption Infrared Spectra, Ravi Ranjan, M. Treacy, University of Illinois at Chicago

HC-Contributed On Demand-40 Ambient-Pressure CO Driven Restructuring of Cu(111) by Reflection Absorption Infrared Spectroscopy, Arephik Islam, University of Illinois at Chicago; C. Kruppe, Intel Corporation; M. Treacy, University of Illinois at Chicago


HC-Contributed On Demand-46 Sum is Better Than the Parts: CrCoFeNi High Entropy Alloy as Hydrogen Evolution Catalyst in Acidic Solution, Frank McKay, Louisiana State University; Y. Fang, Louisiana State University; O. Kizilkaya, Louisiana State University; P. Singh, Ames Laboratory; D. Johnson, Iowa State University; A. Roy, D. Young, P. Sprunger, J. Flake, W. Shelton, Y. Xu, Louisiana State University

HC-Contributed On Demand-49 The Influence of Palladium on the Hydrogenation of Acetylene on Ag(111), David Molina, M. Muir, M. Abdel-Rahman, M. Treacy, University of Illinois - Chicago

HC-Contributed On Demand-52 In Situ Investigation of the Oxidation of Cu(111) and Reduction of Cu$_2$O Doped with Single Pt Atoms, A. Schilling, Tufts University; K. Groder, Washington University at St Louis; J. Simonovis, A. Hunt, Brookhaven National Laboratory; R. Hannagon, V. Cinar, Tufts University; J. McEwen, Washington State University; E. Sykes, Tufts University; Irodikomaru Watanuki, Brookhaven National Laboratory

HC-Contributed On Demand-55 Kinetics of the Thermal Oxidation of Ir(100) toward IrO$_2$ Studied by Ambient-Pressure X-ray Photoelectron Spectroscopy, Zbynek Novotny, University of Zurich & Paul Scherrer Institute, Switzerland; B. Tobler, University of Zurich, Switzerland; L. Artigia, Paul Scherrer Institute, Switzerland; M. Fischer, M. Schreck, Universitat Augsburg, Germany; J. Raabe, Paul Scherrer Institut, Switzerland; J. Osterwalder, Universitat Zurich, Switzerland

HC-Contributed On Demand-58 A Study of Subsurface Oxygen on Ag(111) Using Density Functional Theory and Monte Carlo Simulations, Carson Mize, University of Tennessee Knoxville; L. Crosby, Joint Institute for Computational Sciences; University of Tennessee Knoxville; S. Isbell, Oak Ridge National Laboratory; S. Roy, University of Tennessee Knoxville

HC-Contributed On Demand-61 Measuring Adhesion Energies and Using them to Bridge the Gaps between Gas-Phase and Liquid-Phase Surface Chemistry, and Between Single-Crystal Metal Surfaces and Metal Nanoparticles, Elizabeth Harman, G. Ruehl, J. Rumpza, C. Campbell, University of Washington

HC-Contributed On Demand-64 Carbon Dissolution via Beam Reflectivity Measurements on Nickel Single Crystal Catalysts, Daniel Tinney, Tufts University; E. High, Rowland Institute at Harvard; E. Dombrowski, Commonwealth Fusion Systems; L. Joseph, A. Utz, Tufts University

HC-Contributed On Demand-67 Trimetallic Alloys for Enhanced Ethanol Conversion to Hydrogen, Paul Kress, Y. Wang, L. Cramer, Tufts University; M. Montemore, Tulane University; E. Sykes, Tufts University

HC-Contributed On Demand-70 Investigating the Alloying Mechanism of RhCu(100) and RhCu(110), Yicheng Wang, Tufts University; K. Papapipolakou, University College London, UK; R. Hannagon, Tufts University; J. Schumann, M. Stamatakis, University College London, UK; C. Sykes, Tufts University


HC-Contributed On Demand-79 Elucidating the effect of Oxidation on the Structure and Reactivity of Rhodium Copper Single-Atom Alloys, Volkan Cinar, Tufts University; D. Guo, Washington State University; A. Schilling, Seagate Technology; I. Waluyo, Brookhaven National Laboratory; J. McEwen, Washington State University; C. Sykes, Tufts University

HC-Contributed On Demand-82 Investigation of CO oxidation on Rh(111) with IRRAS, Elizabeth Janma, D. Kilelecz, Loyola University Chicago

HC-Contributed On Demand-85 Study of the Effects of Co-Adsorbed Water on Acetic Acid Decomposition on Metal Surfaces, K. Chukwu, Hoan K.K. Nguyen, L. Arnaudot, Oregon State University

HC-Contributed On Demand-88 Structure and Chemistry of Metal Surfaces at High Oxygen Coverages, Dan Kilelecz, M. Turano, Loyola University Chicago; R. Farber, The University of Chicago; L. Juurlink, Leiden University, Netherlands


HC-Contributed On Demand-94 Catalytic Enhancement Due to Coke Formation: Investigation of the Bimetallic Effect on Carbon Nanotubes Formed during Dry Reforming of Methane, Carly Byron, University of Delaware; M. Ferrandon, Argonne National Laboratory, USA; G. Celi, Middle East Technical University, Turkey; R. McCormick, J. Slappy, K. Boaksh, University of Delaware; D. Delferro, Argonne National Laboratory, USA; C. Ni, A. Teplyakov, University of Delaware

Fundamental Discoveries in Heterogeneous Catalysis Focus Topic
Room On Demand - Session HC-invited on Demand Fundamental Discoveries in Heterogeneous Catalysis Invited On Demand Session
8:00am

INVITED: HC-invited on Demand-1 Low Temperature Selective Alkane Conversion on IrO$_2$(110) Surfaces, Aravind Asthagiri, The Ohio State University

INVITED: HC-invited on Demand-7 Alkali-promoted Copper-based Catalysts for CO$_2$ Activation, W. Liao, Stony Brook University; Ping Liu, Brookhaven National Laboratory

INVITED: HC-invited on Demand-13 Influence of Water on C-O Hydrogenolysis Catalyzed by Ru/TiO$_2$, D. Stuck, A. Mahadavi-Shahidi, University of Maine; R. Austin, Barnard College; L. Grabow, University of Houston; B. Frederick, Thomas J. Schwartz, University of Maine

INVITED: HC-invited on Demand-19 Reversible Surface Transformation Enables the Revivification of Mixed Metal Hydroxide Water Oxidation Catalysts, C. Kuo, Feng Lin, Virginia Tech

INVITED: HC-invited on Demand-25 Designed Metal Release from Complex Metal Oxides, Sara Mason, University of Iowa

INVITED: HC-invited on Demand-31 Hydrogenation of CO$_2$ to Methanol on Metal-Oxide and Metal-Carbide Interfaces, Jose Rodriguez, Brookhaven National Laboratory

INVITED: HC-invited on Demand-37 Chirality Detection of Surface Desorption Products using Photoelectron Circular Dichroism, J. Weg, Tim Schäfer, G. Westphal, University Göttingen, Germany

Leaders in Energy and the Environment Focus Topic
Room On Demand - Session LD-contributed on Demand Leaders in Energy and the Environment Contributed On Demand Session
8:00am

LD-contributed on Demand-1 Work Function Reduction of Carbon Nanoparticles and the Effects of Contaminants by XPS and UPS, Arthur Boddorf, D. Hessley, Oak Ridge National Laboratory; A. Randinone, Los Alamos National Laboratory

LD-contributed on Demand-4 Electrochemical Performance of CaFe$_2$O$_4$ Synthesized at Multiple Fuel-Oxidizer Ratios, Jacob Stenmark, S. Donnahn, C. Denize, C. Bonner, S. Pradhan, M. Bahoura, Norfolk State University

Leader in Energy and the Environment Focus Topic
Room on Demand - Session LD-Invited On Demand Leaders in Energy and the Environment Invited On Demand Session
8:00am

INVITED: LD-Invited on Demand-1 Atomic-Scale Imaging of Optically-Active Nanoscale Systems, Jeffrey R. Guest, Argonne National Laboratory

INVITED: LD-Invited on Demand-7 Probing Molecule-Substrate Interactions at Angstrom Scale by Ultrahigh Vacuum Tip-Enhanced Raman Spectroscopy, Nan Jiang, University of Illinois at Chicago

INVITED: LD-Invited on Demand-13 HAXPES for Device Applications: From the Surface into the Bulk, Anna Regouv, University College London, UK

INVITED: LD-Invited on Demand-19 Nanoparticle Size, Shape, Composition and Support Effects in the Hydrogenation of Carbon Dioxide, Beatriz Roldán Cuenya, Fritz-Haber Institute of the Max Planck Society, Germany

Magnetic Interfaces and Nanostructures Division
Room on Demand - Session MI-Included On Demand Magnetic Interfaces Contributed On Demand Session
8:00am

MI-Included On Demand-1 Direct Imaging of the Ac Component of the Pumped Spin Polarization With Element Specificity, Santa Pile, T. Schaffers, Johannes Kepler University Linz, Austria; S. Stienes, Helmholtz-Zentrum Dresden-Rossendorf, Germany; M. Buchner, Johannes Kepler University Linz, Austria; S. Wintz, Max Planck Institute for Intelligent Systems, Germany; M. Mayr, Paul Scherrer Institute, Switzerland; J. Förster, Max Planck Institute for Intelligent Systems, Germany; V. Ney, Johannes Kepler University Linz, Austria; R. Narkówicz, K. Lenz, Helmholtz-Zentrum Dresden-Rossendorf, Germany; M. Weigand, Helmholtz-Zentrum Berlin, Germany; H. Ohldag, Stanford Synchrotron Radiation Laboratory; University of California Santa Cruz; J. Lindner, Helmholtz-Zentrum Dresden-Rossendorf, Germany; A. Ney, Johannes Kepler University Linz, Austria

MI-Included On Demand-4 Breaking Time-Reversal Symmetry at the M Point: Spin Signal from a Surface State on TiGe[111], Markus Donath, P. Eickhoff, P. Krüger, S. Stoilwijk, A. Schmidt, Westfälische Wilhelms-Universität Münster, Germany

MI-Included On Demand-7 Spin-orbit-induced effects in VLEED experiments from MoS2/Au[111], Christoph Angrick, A. Henkens, N. Mutzke, A. Reimann, University of Münster, Germany; M. Ewert, L. Buß, Brandenburg University of Technology Cottbus-Senftenberg, Germany; J. Föltz, University of Bremen, Germany; J. Fiege, Brandenburg University of Technology Cottbus-Senftenberg, Germany; M. Donath, University of Münster, Germany

MI-Included On Demand-10 Direct Observation of Spin Accumulation in Cu Induced by Spin Pumping, I. Ding, Argonne National Laboratory; W. Zhang, Oakland University; B. Jungfleisch, J. Pearson, Argonne National Laboratory; Hendrik Ohldag, Lawrence Berkeley Lab, University of California, Berkeley; V. Novosad, Argonne National Laboratory; A. Hoffmann, University of Illinois at Urbana Champaign

MI-Included On Demand-13 Spatially Resolved Ferromagnetic Resonance of a Single Fe3O4 Nanoparticle Chain Using Scanning Transmission X-Ray Microscopy, Thomas Feggeler, B. Zinsme, R. Meckenstock, University of Duisburg-Essen, Germany; H. Ohldag, Lawrence Berkeley National Laboratory (BNL); M. Farle, H. Wende, K. Ollefs, University of Duisburg-Essen, Germany

MI-Included On Demand-16 Scanning NV Magnetometry for Semiconductor Device Analysis, U. Celano, IMEC, Belgium; Peter Richhaus, H. Zhong, Qnami AG, Switzerland; F. Cubrata, IMEC, Belgium; L. Stoleriu, Alexandru Ioan Cuza University, Romania; A. Stark, F. Favao de Oliveira, M. Musch, Qnami AG, Switzerland; P. Favia, M. Korytov, P. Van Marcke, IMEC, Belgium; P. Maleistinsky, Qnami AG, Switzerland; C. Adelmann, P. van der Heide, IMEC, Belgium

MI-Included On Demand-19 CoFe2O4/Ge: Single-Phase, Highest Magnetic Moment, Highest Curie Temperature, Shambhu RC, R. Mahat, The University of Alabama; S. Regmi, University of Alabama; J. Law, The University of Alabama; V. Franco, Universidad de Sevilla, Spain; G. Mankey, W. Butler, A. Gupta, P. LeClair, The University of Alabama

MI-Included On Demand-22 Defects in Magnetic Weyl Semimetal CoS3Sn2, Zheng Gao, Q. Zou, M. Fu, L. Zhang, Oak Ridge National Laboratory; R. Xue, University of Tennessee Knoxville; J. Yan, Oak Ridge National Laboratory; M. David, University of Tennessee Knoxville; M. Yoon, Oak Ridge National Laboratory, USA


MI-Included On Demand-28 Large Temperature Dependent Spin Torque Efficiency in Antiferromagnetic FeRh, Jonathan Gibbons, University of Illinois at Urbana Champaign; T. Dohi, Tohoku University, Japan; H. Saglam, Yale University; J. Pearson, Materials Science Division, Argonne National Laboratory; S. Fukami, Tohoku University, Japan; A. Hoffmann, University of Illinois at Urbana Champaign

MI-Included On Demand-31 Effect of Sn Doping on Surface States of Bi2Se3 Thin Films, Jennifer DeMell, G. Stephen, Laboratory for Physical Sciences; I. Naoum, Howard University; S. Tyagi, University of Maryland, College Park; O. Vail, Army Research Laboratory; M. Dreyer, University of Maryland, College Park; R. Butera, A. Hanbicki, Laboratory for Physical Sciences; P. Taylor, Army Research Laboratory; I. Mayergoytz, University of Maryland, College Park; P. Dev, Howard University; A. Friedman, Laboratory for Physical Sciences

MI-Included On Demand-34 Control of Domain Wall Patterning and Anomalous Response Functions in Ferrimagnetic Spinel, Lazar Kish, University of Illinois at Urbana-Champaign; A. Thaler, Oak Ridge National Laboratory; M. Lee, Los Alamos National Laboratory; A. Zabrzewski, University of Illinois at Urbana-Champaign; D. Reljic, EPFL, University of British Columbia, Canada; B. Wollm, K. Wang, University of Illinois at Urbana-Champaign; K. Littrell, Oak Ridge National Laboratory; R. Budakian, University of Waterloo, Canada; H. Zhou, University of Tennessee Knoxville; Z. Gai, M. Frontzek, Oak Ridge National Laboratory; V. Zapf, Los Alamos National Laboratory; A. Aczel, L. DeBeer-Schmitt, Oak Ridge National Laboratory; G. MacDougall, University of Illinois at Urbana-Champaign

MI-Included On Demand-37 Anomalous Hall Effect in Heterostructures Based on MnBi2Te4 Grown by MBE, Seul-Ki Bae, L. Riney, J. Wang, University of Notre Dame; K. Koller, Saint Mary's College; X. Liu, M. Zhukovskyi, T. Orlowa, M. Dobrowolska, J. Furudyn, A. Assaf, University of Notre Dame

MI-Included On Demand-40 Magnetic Transition Behavior of Epitaxial Fe3Rh1-Pd Films, Gary Mankey, University of Alabama; H. Sato, Tohoku University, Japan; N. Pachauri, Intel; S. Keshavarz, University of Alabama; H. Lee, Trinity College Dublin; Ireland; P. LeClair, University of Alabama; O. Myasoedov, Department of Physics and Astronomy

MI-Included On Demand-43 The Critical Role of Checkerboard Spin Fluctuations in High-Tc Single Layer Iron Chalcogenide Superconductors, Qiong Zou, H. Zhong, West Virginia University; T. Shishido, M. Weinert, University of Wisconsin Milwaukee; L. Li, West Virginia University

MI-Included On Demand-46 Magnetic Anisotropy in a Single Crystal Antiferromagnetic Thin Film, Saima Siddiqui, University of Illinois at Urbana-Champaign; J. Pearson, Argonne National Laboratory; A. Hoffmann, University of Illinois at Urbana-Champaign

Magnetic Interfaces and Nanostructures Division
Room on Demand - Session MI-Included On Demand Magnetic Interfaces Invited On Demand Session
8:00am

INVITED: MI-Included on Demand-1 From Spin Spirals to Spin Glasses - Imaging Complex Magnetism on the Atomic Scale, Daniel Wegner, Radboud University, Nijmegen, Netherlands

INVITED: MI-Included on Demand-7 Magnetic Exchange and Anisotropy in Perpendicular Magnetic Tunnel Junction Nanopillars: Experiment and Micromagnetic Modeling, Jamilah Beik Mohamned, Loyola University New Orleans; A. Kent, New York University

INVITED: MI-Included on Demand-13 Utilizing Vacuum States Above Surfaces for Imaging and Manipulation of Atomic-Scale Magnetism, Anika Schlenhoff, University of Hamburg, Germany

INVITED: MI-Included on Demand-19 Magnetism in Topological Crystaline Insulator Heterostructures, Badish Assyat, University of Notre Dame

INVITED: MI-Included on Demand-25 Moving Toward Antiferromagnetic Straintronics, Michelle Jamer, United States Naval Academy
NS-Contributed On Demand-67 Combined Scanning Gate Microscopy and Light Excitation Measurements on Semiconductor Nanowires, Yen-Po Liu, J. Fast, Y. Chen, M. Kumar, Lund University, Sweden; R. Zhe, DESY, Germany; R. Timm, A. Burke, H. Linke, A. Mikkelsen, Lund University, Sweden

NS-Contributed On Demand-70 Ultralow Friction of Magnetene, a non-van der Waals 2D Material, Peter Serules, University of Toronto, Canada; A. Puthirath, Rice University; S. Yadav, C. Veer Singh, University of Toronto, Canada; P. Ajayan, Rice University; T. Filleter, University of Wisconsin, USA

NS-Contributed On Demand-73 Nano-Mechanical Characterization of Organic Micro-Inclusions in Flint, Sidney Cohen, I. Rosenhek-Goldian, Weizmann Institute of Science, Israel; T. Corrodes, Technical University Federico Santa Maria, Brazil; F. Natoilio, Weizmann Institute of Science, Israel; A. Cermesu, Neaspec, Germany


NS-Contributed On Demand-82 Realizing Gapped Surface States in the Magnetic Topological Insulator MnBi2-Sb2Te5, Wonhee Ko, Oak Ridge National Laboratory; M. Kolmer, Ames Laboratory; J. Yan, A. Pham, M. Fu, Oak Ridge National Laboratory; F. Luepke, Forschungszentrum Jülich GmbH, Germany; S. Okamoto, P. Ganesh, Z. Gai, A. Li, Oak Ridge National Laboratory


NS-Contributed On Demand-88 Nanomaterial Adhesion Depends on Specific-Ion Effects Within Common Reservoir Fluids, H. Chen, Armaco Services Company - Boston; S. Eichmann, Armaco Services Company - Houston; Nancy Burnham, Worcester Polytechnic Institute


NS-Contributed On Demand-94 Probing Interfacial Properties of Iron Oxide Thin Films on Noble Metal Substrate by Scanning Tunneling Microscopy, Daorong Liu, J. Schultz, University of Illinois at Chicago; S. Mahapatra, University of Illinois at Chicago, India; N. Jiang, University of Illinois at Chicago, China

NS-Contributed On Demand-97 Room Temperature Spin Transport in Cd3As2, Gregory Stephen, A. Hambirk, Laboratory for Physical Sciences; T. Schlumman, University of California at Santa Barbara; J. Robinson, Naval Research Laboratory; M. Goyal, University of California at Santa Barbara; S. Stemmer, University of California Santa Barbara; A. Friedman, Laboratory for Physical Sciences

NS-Contributed On Demand-100 Reconstructing the Intrinsic Potential Energy Landscape of Interfacial Interactions With Thermally Modulated Force Spectroscopy, Alan Liu, T. Sutich, Georgia Institute of Technology

NS-Contributed On Demand-103 Open-Loop Amplitude-Modulation Kelvin Probe Force Microscopy Implemented in Single-Pass Peakforce Tapping Mode, Gheorgeanu Stan, P. Nambodi, National Institute of Standards and Technology

NS-Contributed On Demand-106 Strain-modulated Electronic Properties in Epitaxial FeSn Thin Films on SrTiO3(111), Huimin Zhang, Q. Zou, West Virginia University; USA; M. Weintert, University of Wisconsin, Milwaukee.; L. Li, West Virginia University, USA

NS-Contributed On Demand-109 Structure-Function of PC Surfactants, Nir Kampf, W. Lin, J. Klein, Weizmann Institute of Science, Israel

NS-Contributed On Demand-112 Selective Work Function Metal Etch Enabling Multi-Vt Patterning for High Performance Stacked Nanosheet Devices, Curtis Durfee, IBM Research; S. Koi, TEL; M. Bhuyan, S. Pancharatnam, IBM Research; M. Flaug, I. Otto, TEL; H. Zhou, M. Belyansky, IBM Research; A. Moslen, TEL; N. Loubet, L. Meli, IBM Research; P. Biolsi, TEL; B. Haran, IBM Research


Nanoscale Science and Technology Division

Room On Demand - Session NS-Invited On Demand Nanoscale Science and Technology Invited On Demand Session

8:00am

INVITED: NS-Invited On Demand-1 Engineering Quantum Forces and Torques, Jeremy Munday, University of California, Davis

INVITED: NS-Invited On Demand-13 Visualizing Inside of 3D Self-Organizing Systems by 3D-APM, Takeshi Fukuma, Kanazawa University, Japan

INVITED: NS-Invited On Demand-19 Tackling Instabilities in Hybrid Perovskites from the Macro- to the Nanoscale, Marina Leite, University of California at Davis


Nanoscale Science and Technology Plenary Session

Room On Demand - Session NP-Invited On Demand Nanoscale Science and Technology Plenary Invited On Demand Session

8:00am

INVITED: NP-Invited On Demand-1 Atom-Defined Silicon Circuit Elements For Fast, Low Power Computing, Robert W. Wood, University of Alberta and The National Institute for Nanotechnology, Canada

INVITED: NP-Invited On Demand-7 Seeing the Hidden Interface: Revealing Nanoscale Mechanisms of Contact, Adhesion, and Friction by in situ Experiments, Robert Carpick, University of Pennsylvania

New Trends in Structural Electronic Characterization of Materials, Interfaces, and Surfaces Using Synchrotron and FEL Based Light Sources Focus Topic

Room On Demand - Session LS-Contributed On Demand New Trends in Structural Electronic Characterization of Materials, Interfaces, and Surfaces Using Synchrotron and FEL Based Radiation Sources Contributed On Demand Session

8:00am

LS-Contributed On Demand-1 Resolving Interfacial Electronic Structure in Thin Film Heterostructures using Resonant X-ray Reflectometry, Ryan Need, University of Florida

LS-Contributed On Demand-4 HAXPES Study of Surface/Interface Effects Induced by Heavy Alkali Post Deposition Treatment of [Ag,Cu]In(Ga)Se2 Thin Film Solar Cell Absorbers, Natalia Martin, Uppsala University, Sweden; T. Törnqvist, Uppsala University, Sweden; K. Simonov, Department of Materials and Process Development Swerim AB, Sweden; H. Rensmo, C. Platzer-Börjman, Uppsala University, Sweden

LS-Contributed On Demand-7 Surface Action Spectroscopy With Inert Gas Messenger Atoms, Hans-Joachim Freund, Fritz Haber Institute of the Max Planck Society, Germany

LS-Contributed On Demand-13 X-ray Magnetic Linear Dichroism Studies of Electrical Switching of Antiferromagnetic Order in α-Fe2O3 Epitaxial Films, Egecan Cagolu, N. Statuto, New York University; Y. Cheng, Department of Physics, Ohio State University; S. Yu, F. Yang, Ohio State University; R. Chopdekar, H. Oldag, Advanced Light Source, Lawrence Berkeley National Laboratories; A. Kent, New York University

LS-Contributed On Demand-16 Probing Interfacial Ferromagnetism in Oxide Superlattices Using Depth Resolved X-Ray Reflectoscopic and Scattering Techniques, Jay Paudel, Temple University; M. Terrill, Rutgers University; I. Vobornik, P. Orgiani, G. Panasci, Cnr-Iom, Tasc Laboratory, Italy; C. Kriele, P. Shafers, Advanced Light Source, Lbnl; V. Stroscio, Swiss Light Source, PSI, Switzerland; J. Chakhalian, Rutgers University; A. Gray, Temple University
New Trends in Structural Electronic Characterization of Materials, Interfaces, and Surfaces Using Synchrotron and FEL Based Light Sources Focus Topic


8:00am

INVITED: LS-Invited On Demand-1 Soft X-ray Resonant Inelastic Scattering (RIXS) to Study the Magnetic and Electronic Properties of Materials, Nicholas Brookes, ESRF, France

INVITED: LS-Invited On Demand-7 Bulk and Interface Hard-X-ray Bandmapping with Spin Resolution Combining Full-field Momentum Imaging with ToF-recording, Gertr Schönhense, Johannes Gutenberg University of Mainz, Germany

INVITED: LS-Invited On Demand-13 My Adventures with Synchrotrons: From Discovering New Types of Magnetism to Helping NASA, Mikel Holcomb, West Virginia University, USA

INVITED: LS-Invited On Demand-19 Extending Time-Resolved X-Ray Diffraction using Coherence, Mark Sutton, McGill University, Canada

Plasma Science and Technology Division
Room On Demand - Session PS-Contributed On Demand Plasma Science and Technology Contributed On Demand Session

8:00am

PS-Contributed On Demand-1 Forming Protection Layers Using SiClx Plasma for Highly Selective Etching, Miyako Matsui, Hitachi Ltd., Japan; K. Kuwahara, Hitachi High-Tech Corp., Japan

PS-Contributed On Demand-4 Focus Ring Erosion During Plasma Etching: Consequences of Dielectric Constant*, Xifeng Wang, University of Michigan; H. Lee, S. Shim, S. Nam, Samsung Electronics Ltd., Korea (Republic of); M. Kushner, University of Michigan

PS-Contributed On Demand-7 Improving Estimation Accuracy of Film Thickness Using Machine Learning for End Point Detection in Dry Etching, T. Okamoto, Soichiro Eto, Hitachi Ltd., Japan; S. Nakamto, K. Fukuchi, R. Asakura, Hitachi High-Tech Corp., Japan

PS-Contributed On Demand-10 Floating Wire Assisted Plasma With Vapor Injection of Liquid Mixtures for Etching Titanium Comounds, Thi-Thuy-Nga Nguyen, Nagoya University, Japan; K. Shinoda, H. Hamamura, Hitachi, Japan; K. Maeda, K. Yokogawa, M. Izawa, Hitachi High-Tech, Japan; K. Ishikawa, M. Hori, Nagoya University, Japan

PS-Contributed On Demand-13 Plasma Based ASD for EUV Resist Defectivity Reduction and Process Window Improvement, Jennifer Church, IBM Research Division, Albany, NY; K. Lukter-Lee, TEL Technology Center, America, LLC; L. Miel, E. Miller, IBM Research Division, Albany, NY; A. Raley, TEL Technology Center, America, LLC

PS-Contributed On Demand-16 Extreme Contact Hole Shrink for BEOL Connectivity, Filip Schleicher, Paolillo, D. Decoster, C. Wu, V. Vega Gonzalez, F. Lazzarino, IMEC, Belgium

PS-Contributed On Demand-19 Direct Metol Etch of Molybdenum and Ruthenium: Patternning Challenges for N3 and Beyond, Stefan Decoster, S. Kondu, F. Lazzarino, IMEC, Belgium; E. Camerotta, LAM Research, Belgium


PS-Contributed On Demand-25 Impacts of Different Carrier Wafers during Cl2 Inductively Coupled Plasma Etching on the GaN Surface and the AlOx/GaN Interface, Thibaut Meyer, S. Boubenai, C. Petit-Etienne, B. Salem, E. Pargon, CNRS-LTM, Université Grenoble Alpes, France


PS-Contributed On Demand-31 Characterization of N-Based Plasma-Functionalised Microporous Activated Carbon and Macroporous Cordierite Monoliths for Improved CO2 Adsorption, Madhuwanti Buddhadasa, Université Libre de Bruxelles, Belgium; Y. Ali Gómez Rueda, B. Veroauxentre, Vrije Universiteit Brussel, Belgium; T. Doneux, Université Libre de Bruxelles, Belgium; J. Demeyer, Vrije Universiteit Brussel, Belgium; F. Remiers, Université Libre de Bruxelles, Belgium

PS-Contributed On Demand-34 Insights Into the Plasma Catalytic Decomposition of Methane: Role of Atomic O and Surface Species, Yu Dong Li, University of Maryland College Park; J. Jiang, University of Minnesota; M. Hineshewood, University of Maryland College Park; P. Bruggerman, University of Minnesota; G. Oehrlein, University of Maryland College Park

PS-Contributed On Demand-37 Plasmonic Nitridation of Silicon Surface via Plasma-Induced Wavelength-Mixed Gold Nanoparticle Excitation, Takeshi Kitajima, K. Watanabe, M. Miyake, T. Nakano, National Defense Academy, Japan

PS-Contributed On Demand-40 Low-Temperature Deposition Technology of High-Quality and Low-Stress SiO2 and SiN Films for Photonics Devices Using ECR Plasma, Masanitstu Toraman, Y. Jin, Japan Steel Works, LTD., Japan; K. Mori, H. Tori, T. Meshtia, JSW AFTY Corp., Japan

PS-Contributed On Demand-43 Automatic Etching-Recipe Optimization in Si Etching with Self-Aligned Quadruple Patternning Masks for Productivity Enhancement by Transfer Learning, Naoto Tokano, H. Nakada, T. Ohmori, Hitachi, Ltd. Research & Development Group, Japan

PS-Contributed On Demand-46 Plasma Etch Solutions for Defect Reduction in Ultra-Thin Photoresists, Jiham Park, Sungkyunkwan University (SKKU), Korea (Republic of); S. Kim, Samsung Electronics, Korea (Republic of); G. Yeom, Sungkyunkwan University (SKKU), Korea (Republic of)

PS-Contributed On Demand-49 Design of Organosilicon Nano-Membrane at Atmospheric Pressure With a Glow Discharge and New Applications for Electrochemical Devices, Jacques Profili, CHU de Québec-Université Laval Research Centre, Canada; M. Beauchemin, S. Rousselot, Université de Montréal, Canada; L. Martinu, Polyniotechnique Montréal, Canada; M. Dolfi, L. Stafford, Université de Montréal, Canada

PS-Contributed On Demand-52 Optimization Process for the Fabrication of Ultra-Low Loss PECVD Silicon Nitride-on-Insulator Waveguides, Yannick Bleu, C. Petit-Étienne, L. Youssuf, Univ. Grenoble Alpes, CNRS, CEA/LETI-Minatec, Grenoble INP, LTM, France; J. Faugier-Tovar, Q. Wilmart, Univ. Grenoble Alpes, CEA, LETI, France; E. Pargon, Univ. Grenoble Alpes, CNRS, CEA/LETI-Minatec, Grenoble INP, LTM, France


PS-Contributed On Demand-58 Determination of Recombination Coefficients for Hydrogen, Oxygen and Nitrogen Gasses via in-Situ Radical Probe System, Dren Qerimi, University of Illinois at Urbana-Champaign; D. Ruzic, G. Panici, A. Jain, D. Jacobson, University of Illinois at Urbana-Champaign, USA


PS-Contributed On Demand-64 Characterization of Reversed Arc Hydrocarbon Plasma in Material Synthesis, Vladimir Garokhovsky, Nano-Product Engineering, LLC, Univ. of Colorado

PS-Contributed On Demand-67 Molecular Analysis of Plasma-Induced Germination Improvement of Rice Seeds With High-Temperature Stress Damage, Kazunori Koga, Y. Ishibashi, Kyushu University, Japan; C. Sariysak, Kyushu University, Japan, Thailand; T. Okumura, H. Tanaka, Kyushu University, Japan; P. Atri, Kyushu University, India; K. Matsu, D. Yamashita, N. Itagaki, K. Matomaki, M. Shiratori, Kyushu University, Japan


PS-Contributed On Demand-76 Fluorocarbon Plasma Erosion Behavior of Heraeus Black Quartz, Mark Stamminger, Heraeus Quarzglas GmbH & Co. KG, Germany; K. Nöges, T. Mussenbroek, Ruhr University Bochum, Germany; A. Goetzendorfer, B. Weisenseel, Heraeus Quarzglas GmbH & Co. KG, Germany
PS-Contributed On Demand-79 Surface and Plasma Characterization of a Self-Limited Two Step Etch Process for SiN Spacer Etching Applications, Nicolas A. Loubet, LTM-CNRS, France; C. Jenny, STMicroelectronics, France; C. Petit-Etienne, E. Pargan, LTM-CNRS, France

PS-Contributed On Demand-82 Molecular Dynamics Study on Multi-Steps Plasma-Assisted Atomic Layer Etching of Silicon Nitride, Jomar Tercero, University of the Philippines; A. Hirata, Sony Semiconductor Solutions Corporation, Japan; M. Isobe, Osaka University, Japan; M. Fukasawa, Sony Semiconductor Solutions Corporation, Japan; M. Vasquez, University of the Philippines; S. Hamaguchi, Osaka University, Japan


PS-Contributed On Demand-88 Modeling Capacitively Coupled Plasmas With Nanosecond Pulsed Bias Voltages, Amanda Lietz, Sandia National Laboratories; J. Prager, Eagle Harbor Technologies; M. Hopkins, Sandia National Laboratories

PS-Contributed On Demand-91 Microplasma-Assisted Atomic Layer Deposition and Etching Free Patternning of GaOx Film with Enhanced DUV Photosresponse, Jinhong Kim, A. Micronov, University of Illinois at Urbana Champaign; D. Stevens, University of Illinois Urbana Champaign; S. Park, University of Illinois at Urbana Champaign; J. Eden, University of Illinois Urbana Champaign

PS-Contributed On Demand-94 A Mechanistic Approach to Tune Plasma Sintering Parameters for Enhancing Connectivity of Printed Nanoparticles, Nazli Turan, M. Saeidi-Javash, Y. Zhang, D. Go, University of Notre Dame

PS-Contributed On Demand-97 Molecular Beam Mass Spectrometry to Measure Absolute Densities of Ions, Vibrationally and Electronically Excited Species in Atmospheric Pressure Plasmas, Jingkai Liang, Y. Aranda Gonzalez, P. Bruggeman, University of Minnesota

PS-Contributed On Demand-100 EUV Induced Formation of Hydrogen Plasmas at Low Pressure, Tugba Piskin, University of Michigan; H. Lee, S. Nam; Samsung Electronics Co., Inc., Korea (Republic of); K. Kushner, University of Michigan

PS-Contributed On Demand-103 Molecular Dynamics Simulation of Oxide-Nitride Layer Etching by Fluorocarbon Plasmas, Charisie Marie Cagomoc, M. Isobe, S. Hamaguchi, Osaka University, Japan; E. Hudson, Lam Research Corporation

PS-Contributed On Demand-106 Improving the Hydrophilic Properties of Pet Textiles Using Atmospheric Dbd and RF Plasma Torch, Anneaëlle Demaude, Université libre de Bruxelles, Belgium; R. Inturri, Fidia Pharma, Italy; C. Satirano, University of Catania, Italy; P. Leroy, IONICS Surface Technologies, Belgium; F. Reniers, Université libre de Bruxelles, Belgium

PS-Contributed On Demand-109 One-Step Synthesis of Chemically Patterned Thin Films via Immobilization of Plasma Films in an AP-DDB, Anneaëlle Demaude, Université libre de Bruxelles, Belgium; K. Baert, Vrije Universiteit Brussel, Belgium; D. Petitjean, E. Goormaghtigh, Université Libre de Bruxelles, Belgium; T. Hauffman, Vrije Universiteit Brussel, Belgium; M. Gordon, University of California Santa Barbara; F. Reniers, Université Libre de Bruxelles, Belgium

PS-Contributed On Demand-112 Control of the process environment for HFO-based RRAM device formation, Hiroyuki Miyazoe, IBM T.J. Watson Research Center; D. Koty, TEL Technology Center, America, LLC; H. Yim, N. Gong, M. Hopstaken, E. Cartier, J. Ott, IBM T.J. Watson Research Center; Q. Yang, A. Mosden, TEL Technology Center, America, LLC; T. Ando, S. Engelmann, E. Joseph, IBM T.J. Watson Research Center

PS-Contributed On Demand-115 III-V/Ge Heterostructure Plasma Etching and Passivation With a Single Plasma Process for Low-Damage Multijunction Solar Cell Fabrication, Mathieu de Lafontaine, Laboratoire des Technologies de la Microelectronique, CNRS-LTM, France, Canada; E. Pargan, G. Guy, C. Petit-Etienne, Laboratoire des Technologies de la Microelectronic, CNRS-LTM, France; J. Barnes, N. Rochat, CEA, LETI, MINATEC Campus, France; M. Voltier, A. Janaud, S. Felfond, V. Aimez, M. Darron, Laboratoire Nanotechnologies Nanosystémes (L2N) - CNRS UMI 3463 Institut Interdisciplinaire d'Innovation Technologique (3IT), University of Sherbrooke, Canada

PS-Contributed On Demand-118 Process-induced Damage in GST Etch, Luxherta Buzi, J. Papalia, H. Miyazoe, IBM; H. Cheng, Macronix International Co; M. Hopstaken, R. Bruce, S. Engelmann, IBM

PS-Contributed On Demand-121 Double Curling Probe Method for in-situ Monitoring of Electron Density and Film Thickness for Application, Daiuoke Ogawa, H. Sugai, K. Nakamura, Chubu University, Japan

PS-Contributed On Demand-124 Low Energy, High Flux Density Ion Assisted E-Beam Evaporation Using a Tunable and Robust RF Plasma Ion Source, M. Reilly, R. Viswan, David Douglass, Denton Vacuum, LLC

PS-Contributed On Demand-127 Etch Behavior of Post-Copper Metals, John Arnold, IBM Research Division, Albany, NY; N. Joy, TEL Technology Center, America, LLC; H. Miyazoe, IBM Research Division, T.J. Watson Research Center; C. Park, A. Simon, IBM Research Division, Albany, NY; C. Cabrol, H. Yan, F. Stellorri, IBM Research Division, T.J. Watson Research Center; S. Rogalsky, TEL Technology Center, America, LLC; E. Richardson, TEL Technology Center of America; A. Riley, TEL Technology Center, America, LLC; S. Engelmann, IBM Research Division, T.J. Watson Research Center

PS-Contributed On Demand-130 Radical Flux Control using a Dual Exhaust System during Reactive Ion Beam Etching (RIBE) Process, Do San Kim, Y. Jang, Y. Kim, H. Gil, G. Yeom, Sungkyunkwan University, Korea (Republic of)


PS-Contributed On Demand-136 Insertion Characteristics of Plasma Nitried Suture Needle in Long Incision, Taka Yamauchi, Meiji University Graduate School, Japan; P. Abraha, Meiji University, Japan

PS-Contributed On Demand-139 Investigation of CHM Etching with Additive Gas, Kathryn Mauer, L. Kovath, Y. Ishii, Hitachi High Technologies America Inc.

PS-Contributed On Demand-142 Effect of Synchronously and Asynchronously Pulsed Ar/Cl,, Inductively Coupled Plasmas on Si Trench Formation, Heeju Kim, G. Yeom, L. Wen, J. Hong, W. Jang, S. Namgoong, Sungkyunkwan University (SKKU), Korea (Republic of)


PS-Contributed On Demand-148 Plasma Induced Disproportionation of Nitrogen in a DC Plasma-Electrolysis System Operated in N2 at Atmospheric Pressure, C. Pottyn, Université libre de Bruxelles, Belgium; Nicolas Maire, Université libre de Bruxelles, Belgium, Italy; A. Reny, F. Reniers, Université libre de Bruxelles, Belgium


PS-Contributed On Demand-154 Area Selective Plasma Enhanced Chemical Vapor Deposition of Silicon Using a Fluorinated Precursor, Ghewa Aiki, LPCIM-CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, France; S. Filanovich, TOTAL GRP, France; M. Boulterney, M. Fregnaux, Institut Lavoisier de Versailles, UMR CNRS 8380, Université de Versailles-St-Quentin, France; J. Flores, P. Bolkun, E. Johnson, LPCIM-CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, France

PS-Contributed On Demand-157 Driving Frequency and Ozone as Key Parameters for Nitrogen Oxidation by a Dielectric Barrier Discharge in an N2-O3 Mixture, Antoine Remy, Université libre de Bruxelles, Belgium; N. De Geyter, Ghent University, Belgium; F. Reniers, Université libre de Bruxelles, Belgium

PS-Contributed On Demand-160 Are Atmospheric Plasmas Environmental Friendly? A Case Study, R. De Cuyneraere, Université libre de Bruxelles, Belgium; N. Vandencaesteel, CPIA France, W. Achten, Francois Reniers, Université libre de Bruxelles, Belgium

PS-Contributed On Demand-163 Spatio-Temporal Characterization of a Pulsed DC Atmospheric Pressure Plasma Jet Interacting With Substrates, Michael Johnson, National Research Council; D. Boris, T. Petrova, S. Walton, Naval Research Laboratory, USA

PS-Contributed On Demand-166 Modulation of Synergy in Metal ALF: Film Composition Effects, Nathan Marchack, E. David, D. Kazem, B. To, M. Hopstaken, S. Engelmann, IBM Research Division, T.J. Watson Research Center


PS-Contributed On Demand-172 A Low-Cost Atmospheric Pressure Plasma Apparatus to Depyrogenate Delicate Materials in a Sealed Environment, Naman Bhatt, D. Trosan, North Carolina State University; J. Brier-Jones, Loma Linda University, Karamedica, Inc.; J. Pecoraro, North Carolina State University; J. Smallwood, Loma Linda University; A. Crofton, Case Western Reserve University, Karamedica Inc.; S. Hudson, North Carolina State University, Karamedica; W. Kirsch, Loma Linda University, Karamedica; K. Stapelmann, S. Shannon, North Carolina State University

PS-Contributed On Demand-178 Etching Characteristics of Low-K SiCOH Thin Films Deposited by Plasma Enhanced Chemical Vapor Deposition Using Tetrakis(Trimethylsilyl)silane Precursor, Jacob Comeaux, W. Wirth, S. Jang, University of Louisiana at Lafayette

PS-Contributed On Demand-181 Enhancing the Far Ultra-Violet Optical Properties of Aluminum Mirrors with a Plasma Based Approach to Oxide Removal and Fluorine Passivation, David Boris, U. S. Naval Research Laboratory; L. Rodríguez de Marcos, Catholic University of America; A. Kozen, S. Rosenberg, ASEE Postdoctoral Fellow; J. del Hoyo, J. Richardson, E. Wollack, M. Quijada, NASA Goddard Space Flight Center; S. Walton, U. S. Naval Research Laboratory

PS-Contributed On Demand-184 Spatially Localized Etching using a Novel, Mask-free and Contactless Plasma Patternning Technique, Erik V. Johnson, J. Wang, M. Ghosh, R. Leal, P. Bulkin, P. Roca i Cabarrocas, LPCIM-CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, France; S. Filinovich, Total GRP, France

PS-Contributed On Demand-187 Effects of Outside Circuit on Capacitively Coupled Plasma Based on 1D Circuit Modeling and Experiments, Yuhua Xiao, North Carolina State University; S. Nam, H. Lee, J. Lee, Samsung, Korea (Republic of); S. Shannon, North Carolina State University

PS-Contributed On Demand-190 Characterization and Spatially Resolved Analysis of an Open Channel Microfluidic Substrate for Atmospheric Plasmas, Josh Morsell, S. Shannon, North Carolina State University; J. Jiang, P. Bruggeman, University of Minnesota

PS-Contributed On Demand-193 Construction of a Surrogate Model of a Plasma Processing Systemby Machine Learning, Massakazu Ichikawa, K. Ikuse, Osaka University, Japan; K. Chen, National Yang Ming Chiao Tung University, Taiwan; J. Wu, National Yang Ming Chiao Tung University, Taiwan; S. Hamaguchi, Osaka University, Japan

PS-Contributed On Demand-196 Incorporating Electronegative Feedback Mechanisms in a Global Plasma Circuit Model for Pulsed Power Delivery, Carl Smith, North Carolina State University; S. Nom, K. Boe, J. Lee, Samsung Mechatronics R&D Center, Korea (Republic of); S. Shannon, North Carolina State University

PS-Contributed On Demand-199 Comparative Study of Low Damage Plasma Etching Processes on the Integrity of AlGaN Layers Integrated in GaN HEMT R&D Center, Korea (Republic of); L. Cucci, V. Caruso, University of Catania, Italy


PS-Contributed On Demand-205 Characterization of Plasma-Thermal Cu ALE Processes and Etch Products, Xia (Gary) Sang, J. Martinez, L. Bouchard, E. Carter, J. Chang, University of California at Los Angeles

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Plasma Science and Technology Division Room On Demand - Session PS-Invited On Demand Plasma Science and Technology Invited On Demand Session 8:00am

INVITED: PS-Invited On Demand-1 Control of Interface Layers for Selective Atomic Layer Etching, Takayoshi Tsutsui, Nagoya University, Japan; R. Vervuurt, ASM, Japan; N. Kobayashi, M. Hori, Nagoya University, Japan

INVITED: PS-Invited On Demand-7 Current Modeling and Simulation Challenges of Low-Temperature Plasmas, Anne Bourdon, LPP, CNRS, Ecole Polytechnique, France

INVITED: PS-Invited On Demand-13 Plasma-Substrate Interaction in the Case of Atmospheric Pressure Plasmas, Ana Sobota, Eindhoven University of Technology, Netherlands; O. van Rouw, Eindhoven University of Technology, Afghanistan; M. Hofmans, O. Guittetio, A. Bourdon, Ecole Polytechnique, Afghanistan; P. Viegas, Dutch Institute for Fundamental Energy Research (DIFFER), Afghanistan

INVITED: PS-Invited On Demand-19 Recent Advances in Plasma Processing for the Creation of Tunable Biofunctional Surfaces and Interfaces, Marcela Bilek, B. Akhavan, C. Tran, R. Wolla, E. Kosobrodova, University of Sydney, Australia; A. Kondyrin, University of Sydney, Australia; C. Lotz, G. Yeo, University of Sydney, Australia

INVITED: PS-Invited On Demand-31 Linear Hollow Cathode Plasma Source and the Deposition of Silicon Oxide Materials, John Chambers, AGC; E. Michel, G. Arnould, AGC, Belgium

INVITED: PS-Invited On Demand-37 Co; Conversion in Microwave Plasma: Can We Bring It to an Industrial Scale?, Floran Peeters, Dutch Institute for Fundamental Energy Research, Netherlands

INVITED: PS-Invited On Demand-43 2021 AVS PSTD Young Investigator Award Talk: Plasma Treatment on SiGe for Improvement of Interface Trap Density by Inducing Si Segregation, Yohei Ishii, Hitachi High-Tech America, Inc.; R. Sugano, Hitachi, Ltd., Japan; Y. Lee, W. Wu, Taiwan Semiconductor Research Institute, Taiwan; H. Ishimura, Hitachi High-Tech Taiwan Corp., Taiwan; K. Maeda, M. Miura, Hitachi High-Tech Corp., Japan


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Smart Multifunctional Materials for Nanomedicine Focus Topic Room On Demand - Session SM-On Demand Smart Multifunctional Materials for Nanomedicine On Demand Session 8:00am

SM-On Demand-1 Cisplatin-Loaded Palladium Nanoparticles for Cancer Nanomedicine, L.ucci, A. Bellissima, University of Catania, Italy; T. Moroz, D. La Mendola, University of Pisa, Italy; V. Notatestefana, E. Giorgini, Polyelectrolytic University of Marche, Italy; Cristina Spinato, University of Catania, Italy

SM-On Demand-4 A Multifunctional Plasmonic Nanoplatform of Hyaluronic-Decorated Nanoparticles Fabricated by Atmospheric Plasma for Angiogenic and Antibacterial Applications, V. Caruso, University of Catania, Italy; D. Merche, J. Banetot, A. Ozkan, Université libre de Bruxelles, Belgium; L.ucci, University of Catania, Italy; R. Inturri, G. Galizia, Fidia Farmaceutici S.p.A., Italy; S. Godet, L. Malet, F. Reniers, Université libre de Bruxelles, Belgium; S. Voccaro, Fidia Farmaceutici S.p.A., Italy; Cristina Spinato, University of Catania, Italy

SM-On Demand-7 Angiogenin-Functionalized Gold Nanoparticles-Graphene Oxide Nanohybrids for Wound Care Application, L.ucci, L. Riel, University of Catania, Italy; O. Hansson, University of Gothenburg, Sweden; T. Mrazo, University of Pisa, Italy; C. Spinato, University of Catania, Italy; Diego Le Mendola, University of Pisa, Italy

SM-On Demand-10 Hyaluronic-Metal Gold Nanoparticle Hybrids for Targeted Tumour Cell Therapy and Antibacterial Applications, Vanessa Sanfilippo, L.ucci, V. Caruso, University of Catania, Italy; R. Inturri, L. Mesina, S. Voccaro, Fidia Farmaceutici S.p.A., Italy; T. Fantaine, A. Demaude, F. Reniers, Université libre de Bruxelles, Belgium; C. Spinato, University of Catania, Italy

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Spectroscopic Ellipsometry Focus Topic Room On Demand - Session EL-Contributed On Demand Spectroscopic Ellipsometry Contributed On Demand Session 8:00am

EL-Contributed On Demand-1 One-Pot Microwave Synthesized Luminescence Carbon Quantum Dots From Various Citrus Fruit, T. Gunawan, Sangram Pradhan, M. Bahoura, Norfolk State University

EL-Contributed On Demand-4 Sub-Surface Imaging of Atomically-Thin Semiconductors Beneath Dielectrics Based on Optical Standing Wave Using Photoelectron Emission Microscopy With Deep-Ultraviolet Photoexcitation, Taisuke Ohta, M. Berg, Sandia National Laboratories; F. Liu, Los Alamos National Laboratory; S. Smith, G. Copeland, C. Chan, Sandia National Laboratories; A. Mohite, Rice University; T. Beechem, Sandia National Laboratories

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1 PSTD Young Investigator Award
SS-Contributed On Demand-79 In Situ Observations of Graphene Growth on Liquid Copper, Irene Groot, Leiden University, The Netherlands

SS-Contributed On Demand-82 Laser-Photoemission Electron Microscopy — Deciphering the Morphology of Semi-Crystalline Polymer Films, Falk Nießfind, Physical Measurement Laboratory, National Institute of Standards and Technology (NIST); S. Mannsfeld, Technische Universität Dresden, Germany; K. Karande, A. Kahnt, B. Abel, Leibniz Institute of Surface Engineering (IOM), Germany

SS-Contributed On Demand-85 Thermal Oxidation of Ru(0001) to RuO2: Studied With Ambient Pressure X-ray Photoelectron Spectroscopy, J. Troy Dias, Z. Novotny, T. Tabler, University of Zurich, Switzerland; L. Artiglio, J. Raabe, Paul Scherrer Institute, Switzerland; J. Osterwalder, University of Zurich, Switzerland

SS-Contributed On Demand-88 STM Study of Ag Encapsulation of Pd Islands on Ag(111), Buddhika Alupotha Gedara, M. Muir, M. Trenary, University of Illinois at Chicago

SS-Contributed On Demand-91 An Xps Study of the Interaction between the Uranil Ion and Iodoarginine Peptide, Esha Mishra, C. Schultz, University of Nebraska - Lincoln; P. Dowben, University of Nebraska-Lincoln; R. Lai, University of Nebraska - Lincoln

SS-Contributed On Demand-94 Surface Stability, Phonon Band Structure, and Vibrational Dynamics of the Nb(100) Surface Oxide Reconstruction, Alison McMillan, C. Thompson, J. Graham, University of Chicago; M. Kelley, Cornell University; S. Wilson, R. Farber, University of Chicago; T. Arias, Cornell University; S. Sibener, University of Chicago

SS-Contributed On Demand-97 Evidence of a Surface to Bulk Core Level Shift in CoFe2O4 Thin Films Grown on Au3O5, Ajjun Subedi, Y. Yun, D. Yang, X. Xu, P. Dowben, University of Nebraska-Lincoln

SS-Contributed On Demand-100 Chemistry of Titanium Deposition Precursors for Area-Selective Deposition on Functionalized Silicon, Tyler Parke, D. Silva-Quinones, University of Delaware; G. Wang, Sandia National Laboratories, USA; A. Tepljakov, University of Delaware


SS-Contributed On Demand-106 RRKM Treatment of HCl Dissociative Chemisorption on Au(111): Reactive Dampening through Inefficient Translational Coupling and an Active Surface, Mark Bernard, I. Harrison, University of Virginia

SS-Contributed On Demand-109 Fast Diffusive Behavior of Pb on Ge(111) at Low Temperatures During Island Formation, Andrew Kim, E. Baum, S. Chiang, University of California at Davis; M. Tregides, Ames Laboratory, Iowa State University; V. Streaup, D. Le, A. Childs, T. Rahman, University of Central Florida

SS-Contributed On Demand-112 Selective Catalytic Chemistry at Rhodium (II) Nodes in Bimetallic Metal–Organic Frameworks, Deependra Shakya, D. Chen, C. Enghevo, V. Shustov, University of South Carolina; K. Vogtzeit, University of Tennessee Knoxville; A. Frenkel, Stony Brook University/Brookhaven National Laboratory; S. Senanyake, Brookhaven National Laboratory; A. Brandt, University of South Carolina; A. Ebrahim, Stony Brook University/Brookhaven National Laboratory

SS-Contributed On Demand-115 Electron Stimulated Desorption from Ethane Condensed on Rare Gas Surfaces, Saramana Kundi, M. Schable, T. Orlando, Georgia Institute of Technology, USA


SS-Contributed On Demand-121 STM Studies of Alkanethiolate Reactivity with Atomic H as a Function of Temperature & Chain Length, Sarah Brown, J. Saylor, S. Sibener, University of Chicago

SS-Contributed On Demand-124 Surface Chemistry of 2-Propanol on SnO2(101) Studied Using Ambient-Pressure X-Ray Photoelectron Spectroscopy, Jessica Jenkins, R. Elzein, R. Addou, G. Herman, Oregon State University

SS-Contributed On Demand-127 Bi-Induced Shape Change of Homoeпитaxial InAs(110) Surface Structure, Brandon Carter, J. Millunchick, University of Michigan

SS-Contributed On Demand-130 Patterned and Graded ALD Coatings for Imaging and Spectroscopy Applications, April Jewell, J. Hennessy, S. Nikzad, Jet Propulsion Laboratory

SS-Contributed On Demand-133 Beyond the Ligand Exchange Model – Time Resolved ALD of HFO2 on InAs Thermal Oxide, Giulio D’Acunto, P. Shyayesteh, F. Rehman, Lund University, Synchrotron Radiation Research, Sweden; E. Kokkonen, MAX IV Laboratory, Lund University, Sweden; A. Timm, J. Schmidt, Lund University, Synchrotron Radiation Research, Sweden

SS-Contributed On Demand-136 The Roles of Subsurface Hydrogen and Adsorption of Water on Ni(111), Maxwell Gillum, M. Turano, E. Janku, D. Killelea, Loyola University Chicago

SS-Contributed On Demand-139 Oxidation of Sn at the Cluster-Support Interface: Sn and Pt-Sn Clusters on TiO2(110), Sumit Benuwal, University of South Carolina; W. Choi, University of Texas at Austin; K. Metavaryuth, T. Mammadapatabandi, D. Shalyo, University of South Carolina; G. Henkelman, University of Texas at Austin; D. Chen, University of South Carolina

SS-Contributed On Demand-142 Excited State Relaxation Dynamics in HOPG Using Pump-Probe Momentum Microscopy in the Perturbative Limit, Sergii Chernov, J. Bokalis, A. Kunin, C. Corder, P. Zhao, Stony Brook University; M. White, Brookhaven National Laboratory; G. Schönhense, Johannes Gutenberg-Universität Mainz, Germany; T. Allison, Stony Brook University

SS-Contributed On Demand-145 C-H Bond Dissociation of Methane on Rh(111): Remarkable Activity of Step Sites, Xingyu Wang, I. Harrison, University of Virginia

Surface Science Division
Room on Demand - Session SS-Invited On Demand Surface Science Invited on Demand Session
8:00am

INVITED: SS-Invited on Demand-1 Halide Ion Mobility in Metal Halide Perovskites and its Impact on Photovoltaic Performance, Prashant Kanot, University of Notre Dame

INVITED: SS-Invited on Demand-7 Chemistry and Hydrogen Bonding Environment at Environmental Surfaces as Seen by X-ray Photoelectron and Electron Yield NEXAFS Spectroscopies, Markus Ammann, Paul Scherrer Institut, Switzerland

INVITED: SS-Invited on Demand-13 Thin Film Growth One Step at a Time: Unraveling Mechanisms in Atomic Layer Deposition, Stacey Bent, Stanford University

INVITED: SS-Invited on Demand-19 Interaction of Small Heteroatomic Organic Compounds with Ceria, Ye Xu, Louisiana State University

Thin Films Division
Room on Demand - Session TF-Contributed On Demand Thin Film Contributed on Demand Session
8:00am

TF-Contributed On Demand-1 Improved Impedance Spectroscopy Model of Interfaces for CZTSe Ge Bi-Layers Solar Cells, Songhyun Lee, Indiana State University; K. Price, Morehead State University; E. Saucedo, Catalonia Institute for Energy Research, Spain


TF-Contributed On Demand-7 Molecular Layer Deposition of All-Organic Polymer Films on Particles for Pharmaceutical Applications, Tyler J Myers, S. George, University of Colorado Boulder

TF-Contributed On Demand-10 40 Years of Kraut Valence Band Offset Measurements: The Good, The Bad, and The Ugly, Sean King, Intel Corporation; M. Paquette, University of Missouri - Kansas City

TF-Contributed On Demand-12 Covalently Crosslinked Organic Network Thin Films for Robust Surface Modification, Junjie Zhao, Zhejiang University, China

TF-Contributed On Demand-16 Highly Conductive Nanograting-Nanohole Structures with Tunable and Dual-Band Spectral Transparency, Yanfeng Wang, Tsinghua University, China; H. Chang, J. Choi, University of Georgia; Z. Zhang, Tsinghua University, China; Y. Zhao, University of Georgia, China
The Importance of Purge Time in Treatment on P. G. Zangari, S. McDonnell, I. A. Chandrasinghe, A. Chandrasekaran, Y. An, M. Ha, Q. Wyatt, R. A. Peabody, Holst Centre / TNO, Netherlands


van Straaten, Rack, Tennessee Knoxville TF Pe Acharya Quality Bismuth Ferrite Films by Chemical Vapor Deposition, S. Wang, G. Parsons, A. Gupta, C. Leng, M. Losego, Eindhoven University of Technology, Netherlands

Brian Welch

TF-Contributed On Demand-127 Effect of Heat and Plasma Treatment on Carborane-Assembled Monolayers (SAMs) on Copper, Rupak Thapa, L. Darsette, S. Malik, R. Bole, S. Wagner, D. Bailey, A. Caruso, University of Missouri-Kansas City; J. Bieletfeld, S. King, Intel Corporation; M. Paquette, University of Missouri-Kansas City

TF-Contributed On Demand-130 Challenges in the Fabrication of Good Quality Bismuth Ferrite Films by Chemical Vapor Deposition, Mahendra Acharya, C. Joshi, University of Alabama; T. Gasavii, U. Alian, J. Plombon, Intel Corporation; A. Gupta, University of Alabama

TF-Contributed On Demand-133 Study and evaluation of a MASnIx Perovskite/CZTS solar cell using Numerical Simulation (SCAPS-1D), Ana Cecilia Filion Reyes, BUAP, Mexico

TF-Contributed On Demand-136 Analysis and Testing of Nanocrystalline Diamond Thin Film Failure During H- Stripping, Leo Saturday, University of Tennessee Knoxville; L. Wilson, C. Luck, J. Fowkles, Oak Ridge National Laboratory; P. Rack, University of Tennessee Knoxville; N. Evans, Oak Ridge National Laboratory

TF-Contributed On Demand-139 Surface Functionalization of Nanoporous Carbon Fibers by Vapor Phase Methods for CO2 Capture, Stephan Pringle, G. van Straaten, Eindhoven University of Technology, Netherlands; D. van Eyck, O. Diaz-Morales, j. van Dijk, H. de Neve, Carbyon, Netherlands; M. Creature, Eindhoven University of Technology, Netherlands

TF-Contributed On Demand-142 Redox-Active Polymer Thin Films by MLD for Enhanced Electrochemical Desalination, Matthijs Young, Q. Wyatt, R. Gettel, N. Paranamana, T. White, X. He, University of Missouri-Columbia

TF-Contributed On Demand-145 Smoothing Surface Roughness Using Al2O3 Atomic Layer Deposition, T. Myers, University of Colorado Boulder; J. Throckmorton, T. Hatwar, R. Barre111, M. O’Sullivan, LLHarris Space & Airborne Systems; Steven George, University of Colorado Boulder

TF-Contributed On Demand-148 Sliding Properties of a-C:H Coated CFRP on a Metallic Surface, Akira Chikamato, Meijo University Graduate School, Japan; P. Abhroa, Meijo University, Japan

TF-Contributed On Demand-151 Tungsten Infiltration of CNT Forests by ALD for Micro-Scale X-Ray Collimators, Chase Vanfleet, R. Cass, R. Vanfleet, R. Davis, R. Vanfleet, Brigham Young University

TF-Contributed On Demand-154 Using In Situ Electrical Conductance Measurements to Study Mechanisms and Wall Effects During Vapor Phase Infiltration (VPI) of Doping of Semiconducting Polymers, Kristina Malinowski, S. Gregory, J. Wooding, Y. Li, O. Hvistend, A. Jungreis, M. Losego, Georgia Institute of Technology

TF-Contributed On Demand-157 Combinatorial Cu2Ni1.5 Thin Film Catalysts for Layer Number Control in CVD Grown Graphene, Sumeer Khanna, University of Tennessee Knoxville; M. Staniford, J. Vlassiouk, General Graphene Corporation; P. Rack, University of Tennessee, Oak Ridge National Laboratory

TF-Contributed On Demand-160 Molecular Layer Deposition on Nanofiltration Supports for High Performance Desalination Membranes with Tunable Performance, Brian Welch, O. McIntee, T. Myers, A. Greenberg, V. Bright, S. George, University of Colorado at Boulder

TF-Contributed On Demand-163 Insight into Film Growth Mechanisms in Polyurea Molecular Layer Deposition Using New and Combined Precursors, Rachel Nye, S. Wang, G. Parsons, North Carolina State University

TF-Contributed On Demand-166 2020 AVS Dorothy M. and Earl S. Hoffman Award Talk: Sorption and Desorption of TMA During Vapor Phase Infiltration Into Polystyrene and Poly(Methyl Methacrylate) Thin Films, Emily McGuinness1, C. Leng, M. Losego, Georgia Institute of Technology, USA

TF-Contributed On Demand-169 Experimental Study of Plasma-Enhanced Atomic Layer Deposition of Sn on GeSbTe, Hamid Razavi, University of California at Los Angeles; M. Shen, J. Hoang, T. Lill, Lam Research Corporation; J. Chang, University of California at Los Angeles


TF-Contributed On Demand-175 Gas Bubble and Blister Formation in Sputtered Thin Film Cadmium Selenide, Rachael Greenhalgh, P. Hatton, V. Kornienko, A. Abbas, P. Goddard, R. Smith, J. Bowers, M. Walls, Loughborough University, UK

TF-Contributed On Demand-178 Chemical Bath Deposition of CuxS and SnxS on Functionalized Self-Assembled Monolayers, Tania Estrada, A. Walker, University of Texas at Dallas

TF-Contributed On Demand-181 Formation of Conformal GeSbTe Film by ALD and Tellurization of Ge-Sb Film for Three-Dimensional Phase-Change Random-Access Memory Applications, Kyoungyoung Kim, Y. Kim, O. Kim, W. Lee, Sejong University, Korea (Republic of)

TF-Contributed On Demand-184 About the Importance of Purge Time in Molecular Layer Deposition of Alucone Films, Hordik Jain, P. Poold, Holst Centre / TNO, Netherlands


TF-Contributed On Demand-190 Flexible Low-K SiCOH Thin Films Deposited by Plasma Enhanced Chemical Vapor Deposition of Tetrakis[Trimethylsilyloxy]Silane Precursor, William Wirth, S. Jang, J. Comeau, University of Louisiana at Lafayette

TF-Contributed On Demand-193 Low-Temperature Atomic Layer N-Type Si-Doping of GaN via Plasma-Assisted ALD, Deepa Shukla, N. Biyikli, University of Connecticut


TF-Contributed On Demand-202 Adaptation of Environmentally-Optimized Structural Factors from White Beetle Scales for Enhancing Light Scattering in Synthetic Fibrous Films, Bokyoung Park, S. Han, S. Han, University of New Mexico; J. Um, Kyungpook National University, Korea (Republic of)

TF-Contributed On Demand-205 Halogenated Polymer Thin Film with Ultra-High Refractive Index, Ni Huo, W. Tenhaeff, University of Rochester

TF-Contributed On Demand-208 Epitaxial Growth of Chalcogenide Perovskite Thin Films by MBE, Ido Sadeghi, K. Ye, M. Xu, J. Lebeau, R. Jaramillo, MIT

TF-Contributed On Demand-211 Study the Structural, Optical, Electro-Thermal Properties of Oxygen Dependent Growth Ga Doped ZnO Thin Films for Transparent Heater Applications, Jasmine Beckford, M. Behera, S. Pradhan, M. Bahoura, Norfolk State University

TF-Contributed On Demand-214 Molybdenum Cobalt Sulfide Thin Films for Water Splitting Applications, Lee Kendall, G. Zangari, S. McDonnell, University of Virginia

Thin Films Division

Room On Demand - Session TF-invited On Demand Thin Film Invited On Demand Session 8:00am

INVITED: TF-invited On Demand-1 Inherent Selective Atomic Layer Deposition Strategies and its Applications, Rong Chen, Huazhong University of Science and Technology, China

INVITED: TF-invited On Demand-7 Free-Standing Nanoengineered Functional Oxides Thin Films, P. Salles, I. Caño, ICAM-CSIIC, Spain; R. Guzman, School of Physical Sciences and CAS Key Laboratory of Vacuum Physics ; University of Chinese Academy of Sciences, China; W. Zhou, School of Physical Sciences and CAS Key Laboratory of Vacuum Physics, University of Chinese Academy of Sciences, China; Mariona Cafi, ICAM-CSIIC, Spain


INVITED: TF-invited On Demand-19 Refractive Index Control of Highly Anisotropic 2D Materials, J. Caldwell, Mingze He, Vanderbilt University

INVITED: TF-invited On Demand-25 Microscopic Mechanisms and Applications for Remote Epitaxy of III-Vs and Heusler Compounds, Jason Kawasakı, University of Wisconsin - Madison

1 AVS 2020 Dorothy M. and Earl S. Hoffman Awardee
Vacuum Technology Division
Room On Demand - Session VT-Contributed On Demand
Vacuum Technology Contributed On Demand Session
8:00am

VT-Contributed On Demand-1 Study on Copper Thermal Spray Coating to Mitigate Electron Cloud Effect in SuperKEKB, Mufee Yoo, SOKENDAI, Taiwan; Y. Suetsugu, K. Shibata, H. Hisamatsu, T. Ishibashi, S. Terui, KEK, Japan

VT-Contributed On Demand-4 NIST on a Chip: Photonic and Quantum-Based Sensors for Metrology and Beyond, Jay Hendricks, NIST

VT-Contributed On Demand-7 Improving Temperature Uniformity of Stainless-Steel Components in Thin Film Processing Equipment, Sudarshan Natarajan, D. Sabens, A. Marughaiah, Motembive Technologies

VT-Contributed On Demand-10 Particle Tracking the ISO Gauge, Martin Wiest, F. Scuderi, INFICON Ltd., Liechtenstein; B. Jenninger, A. Stöltzler, P. Kucharski, CERN, Switzerland; O. Teodoro, R. Silva, N. Bundeink, Nova School of Sciences and Technology, CEFITEC, Portugal; C. Illgen, Physikalisch-Technische Bundesanstalt, Germany; J. Sádena, Institute of Metals and Technology, Slovenia; K. Jousten, M. Bernien, Physikalisch-Technische Bundesanstalt, Germany; F. Boinane, Laboratoire national de métrologie et d’essais, France; M. Vícar, Czech Metrology Institute, Czechia

VT-Contributed On Demand-13 Three-Dimensional Analysis and Design Assessment of the Mast-U Double Beamline Cryogenic Pumping System, Xuei Luo, S. Hanke, Karlsruhe Institute of Technology, Institute for Technical Physics, 76021 Karlsruhe, Germany; A. Shepherd, Culham Centre for Fusion Energy, Abingdon, Oxfordshire, OX14 3DB, United Kingdom; C. Day, Karlsruhe Institute of Technology, Institute for Technical Physics, 76021 Karlsruhe, Germany

VT-Contributed On Demand-16 Cost Description and Characterisation of Gases used in immiscible gas Enhanced Oil Recovery processes (IGEOR), Ofessa Abunambah, P. Ogulude, E. Gobina, The Robert Gordon University, UK

VT-Contributed On Demand-19 Vacuum level Sensing Using Optical Refractive Index, Kevin Douglass, J. Ricker, NIST

VT-Contributed On Demand-22 Simulation of the Operation of an Ion Pump, Tiziano Isordi, P. Manassero, L. Bonmassar, Agilent Technologies, Italy

VT-Contributed On Demand-25 Experimental Characterization of a NEG Pump of Novel Size - A Step to its Application in the DEMO Neutral Beam Injectors, Stefan Hanke, C. Day, T. Gregorich, X. Luo, Karlsruhe Institute of Technology (KIT), Germany; F. Siviero, M. Mura, A. Ferrara, E. Maccallini, P. Manini, SAES Getters, Italy; E. Sartori, M. Siragusa, P. Sanoto, Consorzio RFX, Italy

VT-Contributed On Demand-28 Shenzhen Synchrotron Radiation Facility Project, Dongbai Sun, G. Liu, R. Si, Y. Cui, B. Yang, Z. Zhou, Institute of Advanced Science Facilities, Shenzhen, China


VT-Contributed On Demand-40 Jefferson Lab Injector Beamline Upgrade, Marcy Stutzman, Thomas Jefferson National Accelerator Facility

VT-Contributed On Demand-43 Gas Transmission Rate of Elastomer Seal With a Divided Back-Up Ring Seal, Masaharu Miki, Y. Miki, EM Technical Lab Inc., Japan

VT-Contributed On Demand-46 Thermal Evaluation of a Fixed Length Optical Cavity Pressure Standard, Jacob Ricker, J. Hendricks, K. Douglass, NIST

VT-Contributed On Demand-50 Stability of Bakeable Capacitance Diaphragm Gauges, Julio Scherschligt, D. Barker, S. Ecker, J. Fedchak, E. Newsome, NIST

VT-Contributed On Demand-52 Outgassing of A36 Carbon Steel Vacuum Chambers, James Fedchak, J. Scherschligt, NIST-Gaithersburg

INVITED: VT-Invited On Demand-31 Overview of the Outgassing Behavior of Metals, Polymers and Ceramics, Katharina Battes, C. Day, V. Hauer, Karlsruhe Institute of Technology (KIT), Germany

INVITED: VT-Invited On Demand-37 SynRad and MolFlow for Vacuum Analysis of CERN, Marton Ady, R. Kersevan, P. Baehr, CERN, Switzerland

INVITED: VT-Invited On Demand-43 Next Generation Synchrotron Light Source: Vacuum System of the 3 GeV Electron Storage Ring at MAX IV Laboratory, Marek Grabski, Max IV Laboratory, Sweden

INVITED: VT-Invited On Demand-49 Vacuum Technology of Hyperloop, Tom Kammermeier, Leybold GmbH, Germany; D. Corcoran, Leybold USA Inc.; S. Rosenstræter, Leybold GmbH, Germany