Program Overview

Room /Time	Live
TuM	VS1-TuM: It's All in the Details: Mechanistic Understanding of Materials Fabrication and Analysis
WeM	VS2-WeM: How Thin is Thin? Pushing the Limits of Nanoscale Interfacial Engineering
ThM	VS3-ThM: The Future of the AVS: New Directions, Emergent Materials, and Their Applications

Tuesday Morning, October 27, 2020

Virtual Showcase
Room Live - Session VS1-TuM
It's All in the Details: Mechanistic Understanding of Materials Fabrication and Analysis
Moderators: Mariadriana Creatore, Eindhoven University of Technology, The Netherlands, Dan Killelea, Loyola University Chicago

10:00am	**VS1-TuM-1** Welcome Address from the AVS President, ***Amy V. Walker,*** University of Texas at Dallas, USA
10:05am	
10:10am	**VS1-TuM-3** Welcome Message from the AVS 67 Program Chair, ***Daniel Killelea,*** Loyola University Chicago*; A. Creatore,* Eindhoven University of Technology, The Netherlands, Netherlands
10:15am	**INVITED: VS1-TuM-4** Gaede-Langmuir Award Lecture: How Advances in High-Power Magnetron Impulse Sputtering (HiPIMS) Can Control Ion Energy, Ionization, and have High Deposition Rates, ***David Ruzic,*** University of Illinois at Urbana-Champaign
10:20am	
10:25am	
10:30am	
10:35am	
10:40am	
10:45am	
10:50am	
10:55am	BREAK
11:00am	
11:05am	**VS1-TuM-14** Ru Precursors for Photoassisted Chemical Vapor Deposition: Comparison of Allyl and Diene Complexes, ***Christopher Brewer,*** *N. Sheehan,* University of Florida*; B. Salazar, A. Walker,* University of Texas at Dallas*; L. McElwee-White,* University of Florida
11:10am	
11:15am	
11:20am	
11:25am	**VS1-TuM-18** Rhodium Copper Single-Atom Alloys for Selective and Coke-Free C-H Activation, ***Ryan Hannagan,*** *C. Sykes,* Tufts University
11:30am	
11:35am	
11:40am	
11:45am	**VS1-TuM-22** Hydrogen Migration at Restructuring Palladium-Silver Oxide Boundaries Dramatically Enhances Reduction Rate of Silver Oxide, ***Christopher O'Connor,*** Harvard University*; M. van Spronsen,* Lawrence Berkeley National Laboratory (LBNL)*; T. Egle, F. Xu,* Harvard University*; H. Kersell, J. Oliver-Meseguer,* Lawrence Berkeley National Laboratory (LBNL)*; M. Karatok,* Harvard University*; M. Salmeron,* Lawrence Berkeley National Laboratory (LBNL)*; R. Madix, C. Friend,* Harvard University
11:50am	
11:55am	
12:00pm	
12:05pm	BREAK
12:10pm	
12:15pm	**INVITED: VS1-TuM-28** Chirality Detection of Surface Desorption Products using Photoelectron Circular Dichroism, *J. Wega,* ***Tim Schäfer,*** *G. Westphal,* University Göttingen, Germany
12:20pm	
12:25pm	
12:30pm	
12:35pm	
12:40pm	
12:45pm	**INVITED: VS1-TuM-34** Thin Film Growth One Step at a Time: Unraveling Mechanisms in Atomic Layer Deposition, ***Stacey Bent,*** Stanford University
12:50pm	
12:55pm	
1:00pm	
1:05pm	
1:10pm	
1:15pm	**VS1-TuM-40** Closing Remarks and Sponsor Thank Yous, ***Daniel Killelea,*** Loyola University Chicago
1:20pm	
1:25pm	

Wednesday Morning, October 28, 2020

Virtual Showcase
Room Live - Session VS2-WeM
How Thin is Thin? Pushing the Limits of Nanoscale Interfacial Engineering
Moderators: Mohan Sankaran, University of Illinois at Urbana-Champaign, Scott Walton, Naval Research Laboratory

10:00am	**VS2-WeM-1** Welcome to the AVS 67 Virtual Showcase, ***Mohan Sankaran,*** University of Illinois at Urbana-Champaign*; S. Walton,* U.S. Naval Research Laboratory
10:05am	**INVITED: VS2-WeM-2** Medard W. Welch Award Lecture: Chemically Tailoring Interfaces in Two-Dimensional Heterostructures, ***Mark Hersam,*** Northwestern University
10:10am	
10:15am	
10:20am	
10:25am	
10:30am	
10:35am	
10:40am	
10:45am	BREAK
10:50am	
10:55am	**VS2-WeM-12** Overcoming Obstacles to Nano-Scale X-ray Tomography of Solid-State Li Battery Electrolytes, ***Natalie Seitzman,*** Colorado School of Mines*; J. Nelson Weker,* SLAC National Accelerator Laboratory*; M. Al-Jassim,* National Renewable Energy Laboratory*; S. Pylypenko,* Colorado School of Mines
11:00am	
11:05am	
11:10am	
11:15am	**VS2-WeM-16** Selective Gas–Phase Surface Functionalization to Enable Ultra–High ALE Etch Selectivity of Si–Based Dielectrics, ***Ryan Gasvoda,*** Colorado School of Mines, USA*; Z. Zhang, E. Hudson,* Lam Research Corp.*; S. Agarwal,* Colorado School of Mines, USA
11:20am	
11:25am	
11:30am	
11:35am	**VS2-WeM-20** Sorption and Desorption of TMA During Vapor Phase Infiltration Into Polystyrene and Poly(Methyl Methacrylate) Thin Films, ***Emily McGuinness,*** *C. Leng, M. Losego,* Georgia Institute of Technology, USA
11:40am	
11:45am	
11:50am	
11:55am	BREAK
12:00pm	
12:05pm	**INVITED: VS2-WeM-26** Emulsion-Templated Asymmetric Vesicles, ***Laura Arriaga,*** Universidad Autónoma de Madrid, Spain
12:10pm	
12:15pm	
12:20pm	
12:25pm	
12:30pm	
12:35pm	**INVITED: VS2-WeM-32** Atom-Defined Silicon Circuit Elements For Fast, Low Power Computing, ***Robert Wolkow,*** University of Alberta and The National Institute for Nanotechnology, Canada
12:40pm	
12:45pm	
12:50pm	
12:55pm	
1:00pm	
1:05pm	**VS2-WeM-38** Closing Remarks & Sponsor Thank Yous, ***Mohan Sankaran,*** University of Illinois at Urbana-Champaign

Thursday Morning, October 29, 2020

Virtual Showcase
Room Live - Session VS3-ThM
The Future of the AVS: New Directions, Emergent Materials, and Their Applications
Moderator: Virginia Wheeler, U.S. Naval Research Laboratory

10:00am	**VS3-ThM-1** Welcome to the AVS 67 Virtual Showcase, ***Virginia Wheeler,*** U.S. Naval Research Laboratory
10:05am	**INVITED: VS3-ThM-2** Peter Mark Memorial Award Lecture: Efficient Graphene Hot Electron Devices: Electrochemistry and Electron Emission, ***Rehan Kapadia,*** University of Southern California
10:10am	
10:15am	
10:20am	
10:25am	
10:30am	
10:35am	
10:40am	
10:45am	BREAK
10:50am	
10:55am	**VS3-ThM-12** The Study of the Effects of Local Environments on Self-Assembled Nanostructures with Tip-Enhanced Raman Spectroscopy, ***Jeremy Schultz,*** *N. Jiang,* University of Illinois at Chicago
11:00am	
11:05am	
11:10am	
11:15am	**VS3-ThM-16** Monolithic Integration of Crystalline III-Vs on Amorphous Substrates using a Combination of Epitaxial and Non-epitaxial Methods, ***Debarghya Sarkar,*** *R. Kapadia,* University of Southern California
11:20am	
11:25am	
11:30am	
11:35am	**VS3-ThM-20** Catalytic Upcycling of Single-Use Polyolefins using Pt Nanoparticles Prepared via Atomic Layer Deposition, ***Ryan Hackler,*** Argonne National Laboratory; *G. Celik,* Middle East Technical University, Turkey; *R. Kennedy,* Argonne National Laboratory; *U. Kanbur,* Ames Laboratory; *A. LaPointe, G. Coates,* Cornell University; *K. Poeppelmeier,* Northwestern University; *A. Sadow,* Ames Laboratory; *M. Delferro,* Argonne National Laboratory
11:40am	
11:45am	
11:50am	
11:55am	BREAK
12:00pm	
12:05pm	**VS3-ThM-26** Atomic-scale Studies of Fe_3O_4(001) and TiO_2(110) Surfaces Following Immersion in CO_2-acidified Water, ***Francesca Mirabella,*** Technical University of Vienna, Austria; *J. Balajka,* Cornell University; *J. Pavelec, F. Kraushofer, M. Schmid, G. Parkinson, U. Diebold,* Technical University of Vienna, Austria
12:10pm	
12:15pm	
12:20pm	
12:25pm	**INVITED: VS3-ThM-30** Light Management Strategies for Photovoltaics: Luminescent Concentrators and Passive Cooling for Modules, ***Vivian Ferry,*** University of Minnesota, USA
12:30pm	
12:35pm	
12:40pm	
12:45pm	
12:50pm	
12:55pm	**VS3-ThM-36** Closing Remarks & Sponsor Thank Yous, ***Daniel Killelea,*** Loyola University Chicago

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Bold page numbers indicate presenter