Pacific Northwest
NATIONAL LABORATORY

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43rd Annual Symposium on Applied Surface Analysis And 35th Annual Symposium of the Pacific Northwest Chapter of AVS, The Science and Technology Society

AUGUST 6-9, 2024
DISCOVERY HALL
PACIFIC NORTHWEST NATIONAL LABORATORY
RICHLAND, WA 99354

SCAN ME

For the Abstract Book!

Welcome to Surface Analysis '24
Applied Surface Analysis/PNWAVS Joint Meeting

On behalf of the organizing committee, we warmly welcome you to the Pacific Northwest National Laboratory campus for the Surface Analysis '24 Meeting. We hope that colleagues and friends, together with new arrivals in the field, will find the sessions stimulating and that you will create, renew, and deepen acquaintances and collaborations throughout the conference.

If there is anything we can do to improve your visit, please visit our registration desk located in the Discovery Hall lobby.

Conference Co-Chairs:

Vijay Murugesan
Pacific Northwest National Lab

Ajay Karakoti
Pacific Northwest National Lab

Program Committee:

Arthur Barnard, University of Washington, USA
Mark Engelhard, Pacific Northwest National Lab
David Ginger, University of Washington, USA
Stephen Golledge, University of Oregon, USA
Konstantinos Goulas, Oregon State University, USA
Liane Moreau, Washington State University, USA
Alex Shard, National Physical Lab, UK
Vincent Smentkowski, GE, USA
Karthik Srinivasan, Boise State University, USA

Local Arrangements:

Heather Roney, Pacific Northwest National Lab
Theva Thevuthasan, Pacific Northwest National Lab
Shuttha Shutthanandan, Pacific Northwest National Lab
Tiffany Kaspar, Pacific Northwest National Lab
Joe Gray, Palmborg Associates

Schedule Overview

Tuesday, August 6, 2024 – Chemical Imaging and Analysis Workshop

8:00 am	Light continental breakfast, registration, badging
8:45 – 9:00 am	Opening and Welcome Remarks
9:00 – 12:15 pm	**Morning Session, Workshop and Tutorial**
12:15 – 1:30 pm	Lunch
1:30 – 3:15 pm	**Afternoon Session, Workshop and Tutorial**
3:15 – 3:45 pm	Flash Talks by Students
3:45 – 3:55 pm	Walk to Energy Science Center
4:00 – 5:00 pm	Energy Science Center Lab Tour
5:00 – 7:30 pm	Surface Analysis and PNWAVS Symposium Welcome Reception

Wednesday, August 7, 2004 – Surface Analysis '24

7:30 am	Light continental breakfast, registration, badging
8:00 – 8:15 am	Chair Greetings
8:15 – 8:30 am	Opening and Welcome Remarks
8:30 – 9:50 am	**Session I: Catalysis**
9:50 – 10:20 am	Break and Vendor Exhibit
10:20 – 12:20 pm	**Session 2: Emerging Leader Award Finalist Talks**
12:20 – 1:30 pm	Lunch
1:30 – 2:50 pm	**Session 3: Thin Films**
2:50 – 3:30 pm	Break and Vendor Exhibit
3:30 – 4:50 pm	**Session 4: Hydrogen Interactions**
5:00 – 8:00 pm	**Session 5: Poster Session and Vendor Exhibit – Graduate student competition**

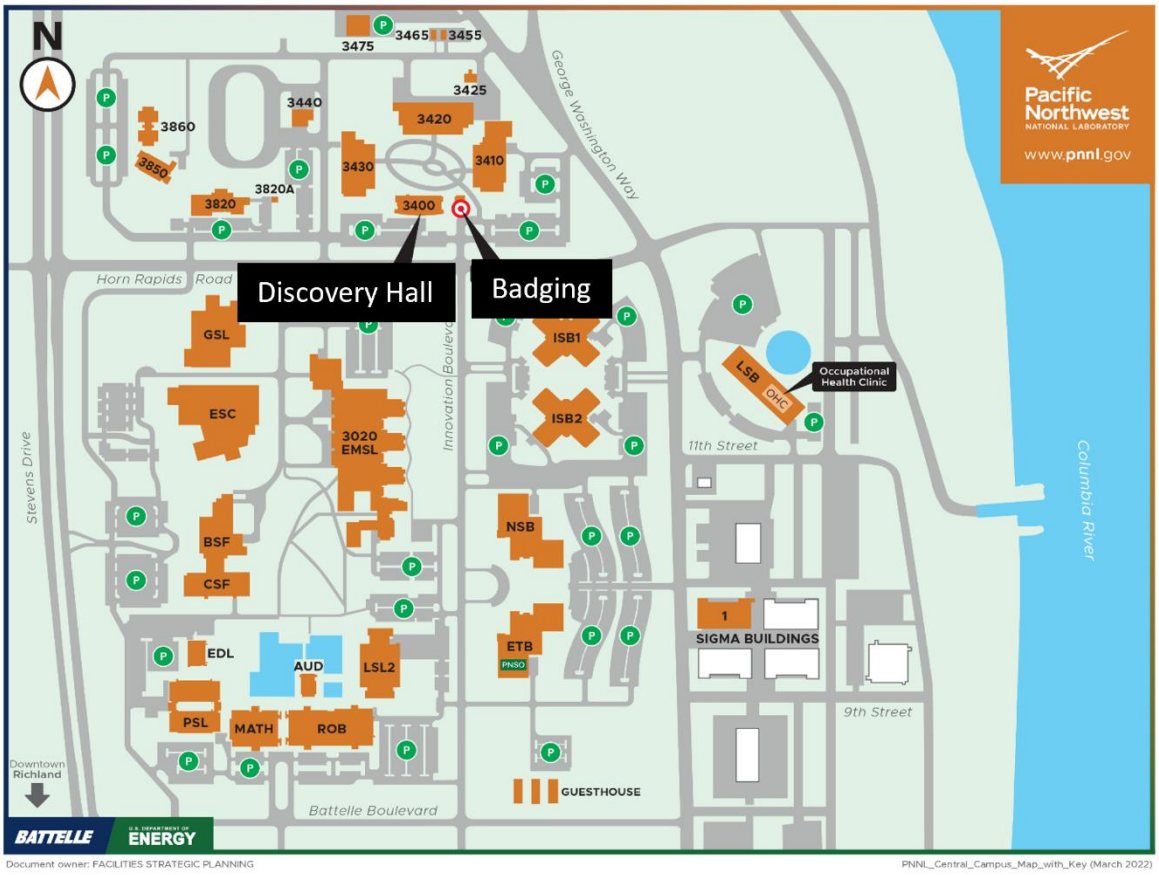
Thursday, August 8, 2024 – Surface Analysis '24

7:30 am	Light continental breakfast, registration, badging
8:00 – 10:00 am	**Session 6: Advanced Capabilities**
10:00 – 12:00 pm	**Session 7: Poster Session and Vendor Exhibit– Undergraduate student competition, High School, and General Posters**
12:00 – 1:00 pm	Lunch
1:00 – 2:20 pm	**Session 8: Next Generation Battery Materials**
2:20 – 2:50 pm	Break and Vendor Exhibit
2:50 – 4:50 pm	**Session 9: Functional Materials**
6:00 – 8:30 pm	**Session 10: Conference Banquet, Plenary Talk and Award Ceremony**

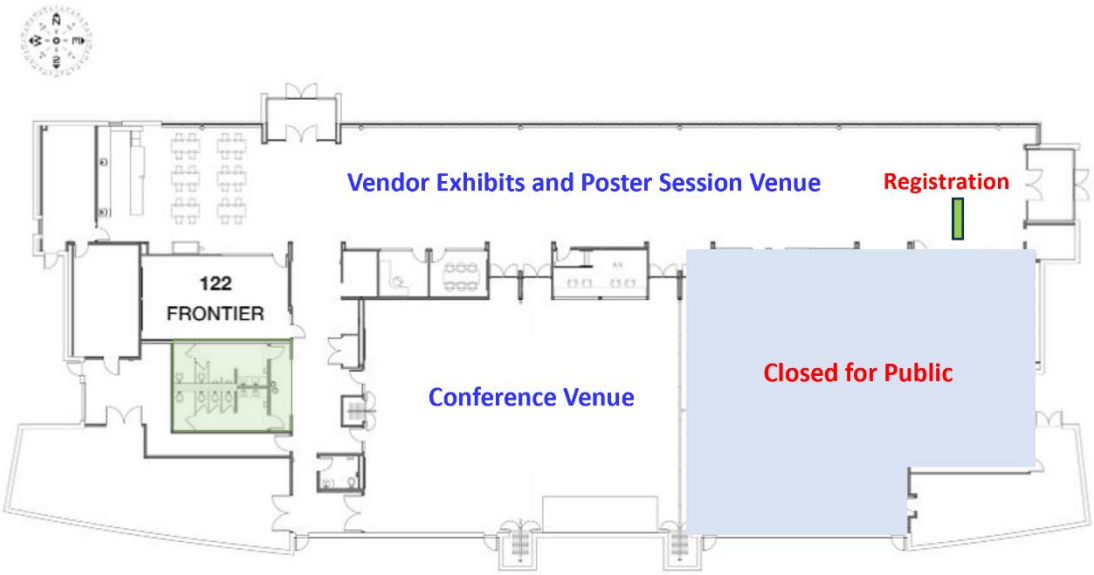
Friday, August 9, 2024 – Surface Analysis '24

7:30 am	Light continental breakfast
8:30 – 9:50 am	**Session 11: Surface Characterization**
9:50 – 10:10 am	Break and Vendor Exhibit
10:10 – 11:30 am	**Session 12: Nucleation and Growth**
11:30 – 12:00 pm	Closing remarks
12:00 – 12:30 pm	Boxed Lunch
12:30 – 1:30 pm	PNWAVS Board of Directors Meeting

Pacific Northwest National Lab Map



Discovery Hall Map



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Vendor Exhibit and Sponsors

We would like to thank the following sponsors for their generous contribution toward the success of this conference. Please visit the vendor exhibition in the Discovery Hall lobby. We greatly appreciate their support for this symposium!

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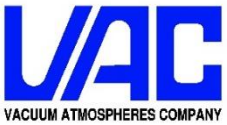

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Chemical Imaging and Analysis Workshop Program

TUESDAY, AUGUST 6, 2024, Discovery Hall			
8:45 - 9:00 AM	Welcome Address	Vijay Murugesan and Ted Tessner	
9:00 - 10:00 AM	CAMCOR Facility intro and AMAC program	*Kurt Langworthy*	University of Oregon
	Air free transfer	*Valerie Brogden*	
	TEM advancements with EMPAD	*Kayla Nguyen*	
10:00 - 10:15 AM	Break		
10:15 - 11:15 AM	Recent Developments in XPS	*James Lallo*	Thermo Fisher Scientific
11:15 - 12:15 PM	Cryo Sample Transfer and Analysis in Glove box/PFIB/APT	*Venkata Bhuvaneswari Vukkum and Jack R Grimm*	PNNL
12:15 - 1:30 PM	Lunch is provided by Thermo Fisher Scientific		
1:30 - 2:15 PM	Sample Preparation and Analysis using FIB and TEM	*Semanti Mukhopadhyay*	PNNL
2:15 - 3:15 PM	Understanding the physical forces that govern line shapes and binding energies in core-level x-ray photoelectron spectra	*Scott A.Chambers*	PNNL
3:15 - 3:45 PM	Flash Talks by Students		
3:45 - 4:00 PM	Walk to Energy Science Center		
4:00 - 5:00 PM	Lab Tour (XPS, APT, PFIB, TEM and MBE labs)		
5:00 - 7:30 PM	Surface Analysis and PNWAVS Symposium Welcome Reception	Discovery Hall	

Surface Analysis 2024 Program

WEDNESDAY, AUGUST 7			
8:00 – 8:15	Chair Greeting	**Vijay Murugesan** and **Ajay Karakoti**	Pacific Northwest National Laboratory
8:15 – 8:30	Opening and Welcome Remarks	**Lou Terminello**, Associate Laboratory Director for Physical and Computational Sciences Directorate	Pacific Northwest National Laboratory

Session 1 **Catalysis** Chair: **Ajay Karakoti**, *PNNL*

8:30 – 9:10	**Invited Talk 1: Lucas Ellis** *Identifying Reductant Descriptors and Surface Structures that Enhance Active Site Formation in Mo-Based Heterogenous Olefin Metathesis Catalysts*	Oregon State University
9:10 – 9:30	**Xingyu Wang** *Tracking Elementary Steps in Conversion of Carboxylic Acids on Single Crystalline and Nanofaceted Anatase TiO2(101)*	Pacific Northwest National Laboratory
9:30 – 9:50	**Jose Ortiz-Garcia** *Coverage-dependent Adsorption, Reactivity, and Morphological Changes of Formic Acid on the Fe3O4(001) Surface*	Pacific Northwest National Laboratory

9:50–10:20 Break and **Vendor Exhibit** in Discovery Hall Lobby

Session 2 **Emerging Leader Award Finalist Presentations** Chair: **Vijay Murugesan**, *PNNL*

10:20 – 10:50	**Christopher Hendon** *Hydrogenic defects in conductive metal-organic frameworks*	University of Oregon
10:50 – 11:20	**Connor Bischak** *Mapping Ion and Polaron Densities in Organic Mixed Conductors at the Nanoscale*	University of Utah
11:20 – 11:50	**Dan Thien Nguyen** *Advanced X-ray Photoelectron Spectroscopy for Studying the Surface Chemistry of Li-ion Battery Electrodes*	Pacific Northwest National Laboratory
11:50 – 12:20	**Amal El-Ghazaly** *Controlling Anisotropy in Magnetic Thin-Films for Integrated Device Operation*	Cornell University

12:20 – 1:30 Lunch and **Vendor Exhibit** in Discovery Hall Lobby

Session 3 **Thin Films** Chair: **Tiffany Kaspar**, *PNNL*

1:30 – 2:10	**Invited Talk 2: Brelon May** *Epitaxial Synthesis and Integration of Cubic Nitrides*	Idaho National Laboratory
2:10 – 2:30	**Tomoko Borsa** *HS-LEIS and XPS Characterization of Hafnium Zirconium Oxide ALD Thin Films*	University of Colorado Boulder
2:30 – 2:50	**Jijo Christudasjustus** *Growth and irradiation effect of MBE grown Fe-Cr based metallic and oxide thin films*	Pacific Northwest National Laboratory

2:50 – 3:30 Break and **Vendor Exhibit** in Discovery Hall Lobby

Surface Analysis 2024 Program

Session 4 **Hydrogen Interactions** Chair: **Arthur Barnard**, *University of Washington*

3:30 – 4:10	**Invited Talk 3: Britta Johnson** *Using Path-Integral Methods to Study Nuclear Quantum Effects in Condensed Phase Hydrogen-Bonded Systems*	Pacific Northwest National Laboratory
4:10 – 4:30	**Megan Dunlap** *Proton Diffusion and Hydrogen/Deuterium Exchange in Amorphous Solid Water Investigated with Reflection Absorption Infrared Spectroscopy*	Pacific Northwest National Laboratory
4:30 – 4:50	**Buddhika Alupothe Gedara** *Deuterium Adsorption on N-doped Graphene on Ru(0001)*	Pacific Northwest National Laboratory

Session 5 Chair: **Shuttha Shutthanandan**, *PNNL*

5:00 – 7:30 **Poster Session 1 (Graduate Student Poster Competition)** and **Vendor Exhibit** with Hors d'oeuvres in Discovery Hall Lobby

Surface Analysis 2024 Program

THURSDAY, AUGUST 8

Session 6 **Advanced Capabilities** Chair: **Yingge Du**, *PNNL*

8:00 – 8:40	**Invited Talk 4: Brendan Faeth** *Thermal Laser Epitaxy for Ultraclean Heterostructures*	Cornell University
8:40 – 9:00	**James Lallo** *Correlative Surface Analysis: Combining XPS, Electron Microscopy, and Other Spectroscopies*	Thermo Fisher Scientific
9:00 – 9:20	**Chris Moffitt** *Tracking changes in graphite bonding structures caused by high energy Cs ion implantation using traditional XPS and HAXPES.*	Kratos Analytical
9:20 –10:00	**Invited Talk 5: Tiffany Kinnibrugh** *APS Upgrade and Overview of the Capabilities for the Structural Science Group Beamlines*	Argonne National Laboratory

Session 7 Chair: **Theva Thevuthasan**, *PNNL*

10:00 – 12:00 **Poster Session 2** and **Vendor Exhibit**

12:00 – 1:00 Lunch and **Vendor Exhibit** in Discovery Hall Lobby

Session 8 **Next Generation Battery Materials** Chair: **Shannon Lee**, *PNNL*

1:00 – 1:40	**Invited Talk 6: Tim Fister** *Understanding interfacial barriers for Mg-ion batteries: surface diffraction from model cathode thin films during cycling*	Argonne National Laboratory
1:40 – 2:00	**Thanh-Nhan Tran** *Synergetic Dual-Additive Electrolyte Enables Highly Stable Performance in Sodium Metal Batteries*	Pacific Northwest National Laboratory
2:00 – 2:20	**Colin Campbell** *Sr-Doped barites and their enhanced epitaxial growth of PbSO4 in lead-acid batteries*	Pacific Northwest National Laboratory

2:20 – 2:50 Break and **Vendor Exhibit** in Discovery Hall Lobby

Session 9 **Functional Materials** Chair: **Lucas Ellis**, *Oregon State University*

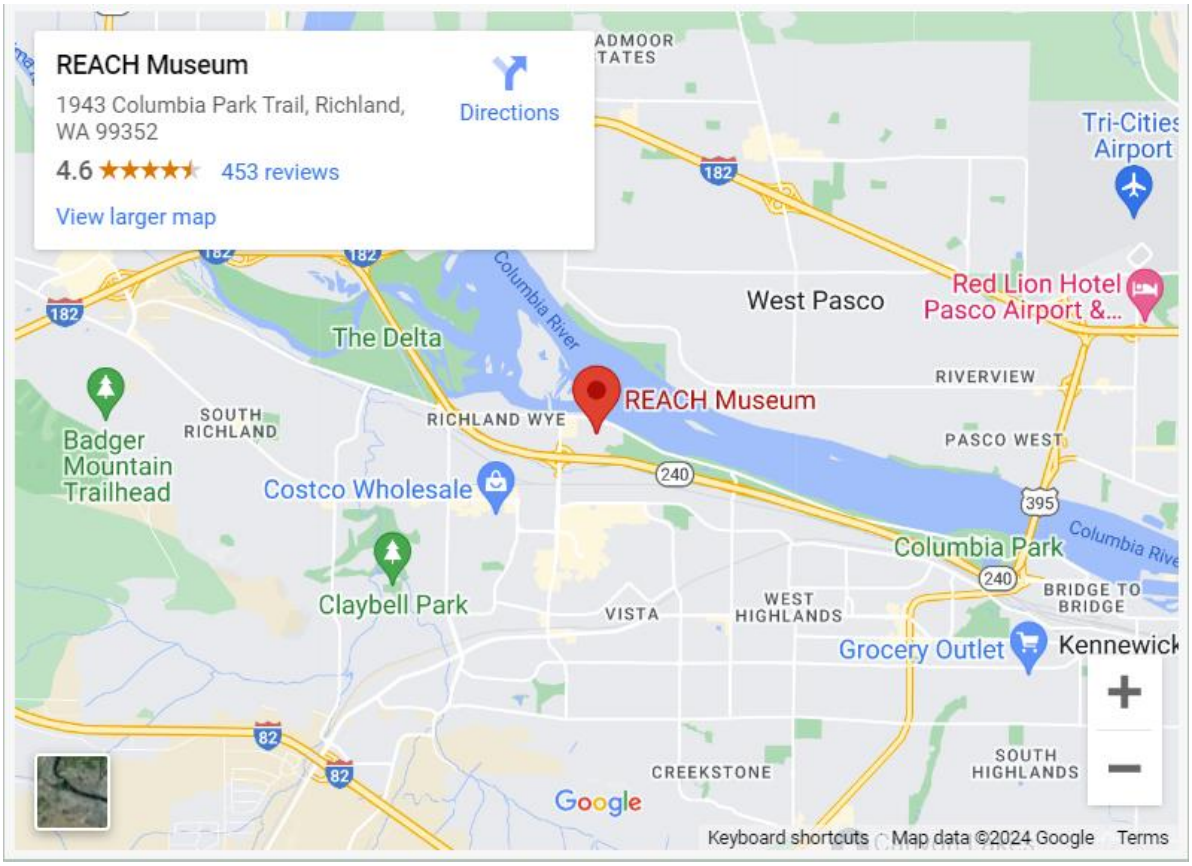
2:50 – 3:30	**Invited Talk 7: Yi Xia** *Phonon Dynamics and Heat Transfer in Energy Materials: Advanced Theory, Materials Discovery, and Machine Learning*	Portland State University
3:30 – 3:50	**Jean-Sabin McEwen** *Elucidating the Effects of Oxygen Vacancies and Electric Fields on Adspecies Adsorbed on La-Based Perovskites*	Washington State University
3:50 – 4:10	**Yongsoon Shin** *Plasma activation of adherends, interfacial bonding formation mechanism, and stability of adhesively bonded joints*	Pacific Northwest National Laboratory
4:10 – 4:50	**Invited Talk 8: Brian Jaques** *Additively manufactured components and materials for extreme environments: Advanced Characterization*	Boise State University

Surface Analysis 2024 Program

Session 10

6:00 – 8:00 **Conference Banquet, Plenary Talk and Award Ceremony**
Plenary Talk: Chi Chen, Microsoft Corporation

Conference Banquet, Plenary Talk and Award Ceremony
At Hanford REACH Museum



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Richland
WA 99352

Surface Analysis 2024 Program

FRIDAY, AUGUST 9

Session 11 Surface Characterization Chair: **Karthik Srinivasan**, *Boise State University*

8:30 – 9:10	**Invited Talk 9: David Bazak** *Probing Nanoparticle Surface Sites with DNP-NMR*	Pacific Northwest National Laboratory
9:10 – 9:30	**Don Baer** *Using XPS to best advantage – Avoiding Common Errors and Extracting More Information*	Pacific Northwest National Laboratory
9:30 – 9:50	**Shuai Zhang** *Protein dynamics on minerals resolved by in situ atomic force microscopy and machine learning*	Pacific Northwest National Laboratory

9:50 –10:10 Break in Discovery Hall Lobby

Session 12 Nucleation and Growth Chair: **Dan Thien Nguyen**, *PNNL*

10:10 –10:50	**Invited Talk 10: Ramana Chintalapalle** *Pulsed Laser Deposition and Characterization of Intrinsic and Alloyed Ga2O3 Thin Films for Optoelectronics*	University of Texas at El Paso
10:50 – 11:10	**Chenyang Shi** *Observing Silk Nanofibril Formation in Real Time Unveils a Continuous Nucleation-Growth Pathway*	Pacific Northwest National Laboratory
11:10 – 11:30	**Pravalika Butreddy** *Selective dissolution and re-precipitation by pH cycling enables facile recovery of pure manganese from surface nodules*	Pacific Northwest National Laboratory

11:30 –12:00 Closing Remarks

12:00 –12:30 Boxed Lunch

12:30 –1:30 PNWAVS Board Meeting

Graduate Student Poster Session - Wednesday, August 7, 5:00 PM to 8:00 PM			
Poster Number	**Presenter's Name**	**Title**	**Institution Name**
G1	Kavin Chakravarthy Thangaraj	In-Situ Multimodal Analysis of Copper Hydroxy Chloride for Enhanced Thermochemical Energy Storage	Washington State University
G2	Peter Jensen	Crystallographic and Electronic Structure of Lanthanide-Doped CeO2 Nanoparticles	Washington State University
G3	Benjamin Rooney-Sailand	Interrogating the Fe/U interface towards predictive models for environmental remediation	Washington State University
G4	William Vance	Elucidating the growth pathways of actinide oxide nanoparticle formation	Washington State University
G5	Carrington Moore	Elucidating the Morphology of a Ru Nanoparticle on a TiO2 and a CeO2 Surface	Washington State University
G6	Matthew Beckman	Substituent and Central Metal Effects on Self-assembled Phthalocyanine Monolayers on HOPG as Studied by Scanning Tunneling Microscopy and DFT calculations	Washington State University
G7	Charles Umhey	Non-precious metal Phosphides and Nitrides as HER and OER Catalysts	Washington State University
G8	Francelia Sanchez	Effect of Si impurities on the hydrogen direct reduction of hematite pellets	University of Texas at El Paso
G9	Morgan Sherer	Tuning magnetic and ferroelectric properties of 2D materials via shear deformation	University of Washington
G10	Nathan Episcopo	Highly Textured Sn-Doped Ga2O3 Epilayers for Economically Viable Solar-Blind Ultraviolet Photodetectors with High Responsivity	University of Texas at El Paso
G11	Maria Paula Garcia Tovar	Study of Microplastics in Water: Formation and Raman Spectroscopy via Sonication of Polyethylene Terephthalate	University of Puerto Rico - Mayagüez Campus
G12	Nolan Herbort	Supercapacitive Properties of Pulsed Laser Deposited Ba(Fe0.7Ta0.3)O3–δ Thin Films Deposited on Ni Foil	The University of Texas at El Paso
G13	Jeffrey Dhas	Understanding and control of the surface oxidation layers in Nb thin films	Pacific Northwest National Lab
G14	Tzer-Rurng Su	Investigating the Growth Mechanism of ZIF-8 Thin Films via Chemical Bath Deposition for Enhanced Gas Sensing	Oregon State University
G15	Truc Phung	Economically Competitive Production of Oleo-Furan Sulfonate Detergents from Furfural and Fatty Alcohols	Oregon State University

G16	Kai Shen Choong	In-Situ X-Ray Absorption Spectroscopy (XAS) Characterization of Molecular Catalysts for Photoelectrochemical and Photochemical CO2 Reduction Reactions	Oregon State University
G17	Cheng-Hsiao Tsai	Characterization of Oxide Nanoparticles Dispersed in Laser-Melted Metallic Specimens	Oregon State University
G18	Hsin-Mei Kao	Continuous-flow Synthesis and Characterizations of FeCrAl-Al2O3 Composite Microparticles	Oregon State University
G19	Han Mei	High-throughput PbSe colloidal Quantum Dots (QDs) Synthesis via a Continuous Flow System	Oregon State University
G20	Derrick Vong	Surface Comparison of ZIF8-Derived Zinc Oxide and Conventional Zinc Oxide Materials for Chemical Gas Sensing Applications	Oregon State University
G21	Ningmo Cheng	Dry Printing of Nanostructured Thin Films Enabled by Low-pressure Vapor Phase Microreactor Assisted Nanomaterial Deposition	Oregon State University
G22	Alvin Chang	Investigation of Cobalt Telluride Restructuring Under Oxygen Evolution Reaction Conditions	Oregon State University
G23	Saowaluk Soonthornkit	Perovskite Oxide SrCo0.5Ir0.5O3 as an Anodic Catalyst for Proton Exchange Membrane Water Electrolysis.	Oregon State University
G24	Rio Moore	A standardized methodology for the solid-state ion exchange of metal zeolite catalysts	Montana State University
G25	Sreenivas Raguraman	Machine learning-guided accelerated discovery of structure-property correlations in lean magnesium alloys for biomedical applications	Johns Hopkins University
G26	Jacob Tenorio	Influence of Fluorination and Oxygenation Sources on the Thermal Atomic Layer Etching of MoS2	Boise State University
G27	Akash Tomar	Demonstration of reliable electron beam lithography in a scanning electron microscope	Boise State University
G28	John Hues	Direct Growth of Molybdenum Disulfide from Metal Contacts via Atomic Layer Deposition	Boise State University
G29	Carinna Lapson	Elucidating the Role of Additives and Microstructure on Lead Sulfation in Lead-Acid Batteries	University of Oregon

Undergraduate Student Poster Session - Thursday, August 8, 10:00 AM to 12:00 PM			
UG-1	Hannah Chang	Analyzing the Structure-Property Behavior of Salt Hydrates as Promising Materials for Thermal Energy Storage	Seattle Pacific University
UG-2	Maya Ramavarapu	Solid State Chemistry for the Synthesis and Characterization of Ternary Metal Chlorides	University of Illinois at Urbana Champaign
UG-3	R. Joseph Perko	Viscosity and Self-Diffusion Coefficients of Generalized Lennard-Jones Substances	University of Idaho
UG-4	Tatiana Serrano-Zayas	Exploring CO2 Hydrogenation of Rhodium Bis(diphosphine) Complex in Protein Scaffolds	University of Puerto Rico at Mayaguez
UG-5	Grace Robinson	Secondary metabolites in bioenergy plant root exudates: chemical characterization and microbial utilization	Whitworth University
UG-6	Andrew Ho	Doping effect on electronic and electrochemical properties of high entropy oxide thin films	Santa Rosa Junior College

High School Student Poster Session - Thursday, August 8, 10:00 AM to 12:00 PM			
HS 1	Aashrita Bhamidimarri	Controlling Agricultural Pollution: 'Root' for Success	Hanford High School
HS 2	Remy Todd	Sibylla: The Microscopists Toolkit	Hanford High School
HS 3	Srithan Thallapally	Nano Cartographer	Richland High School
HS 4	Daniel Gomez	Outbreak Minimization Solutions and Applications	St Stephen's Academy
HS 5	Advaitha Motkuri	A Eye Intelligence: The Future of Disease Detection Through the Eyes	Richland High School
HS 6	Srithan Thallapally	Making Bioplastic from Banana Peels	Richland High School
HS 7	Navaj Nune	Investigating the Quality of Biodiesel Synthesized from Used Cooking Oils	Hanford High School
HS 8	Ananya Gubba, Natalia de Vera, Oliver A Melville	The Backbone of Innovation: Financial Operations	Hanford High School

General Poster Session - Thursday, August 8, 10:00 AM to 12:00 PM			
P1	Chris Moffitt	Cryo-XPS for high vapor pressure samples and minimizing x-ray induced damage in sensitive samples.	Kratos Analytical
P2	Marcus Sharp	Catalytic chemistry of acetic acid and acetic anhydride on magnetite (001)	Pacific Northwest National Laboratory
P3	Amy Ferryman	Non-destructive Depth Profiling of Multilayer Films Utilizing XPS/HAXPES	Physical Electronics
P4	Kha Le	Effects of binders on the electrochemical performance of hard carbon anode in sodium ion batteries	Pacific Northwest National Laboratory
P5	Lyndi Strange	Do/Can different XPS systems give the same result?	Pacific Northwest National Laboratory

PNWAVS: Pacific Northwest Chapter of AVS

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PNWAVS was founded in 1962 as the first local chapter of the AVS. We are a nonprofit organization which promotes communication, dissemination of knowledge, recommended practices, research, and education in the use of vacuum and other controlled environments to develop new materials, process technology, devices, and related understanding of material properties for the betterment of humanity.

Executive Officers

Chair: Vijay Murugesan; E-mail: vijay@pnnl.gov
Vice-Chair: Arthur Barnard; E-Mail: awb1@uw.edu
Past Chair: Elton Graugnard; E-mail: eltongraugnard@boisestate.edu
Secretary: Tiffany Kaspar; E-mail: Tiffany.Kaspar@pnnl.gov
Treasurer: Douglas L. Jones; E-mail: dlj9@comcast.net
Vice-Treasurer: Theva Thevuthasan; E-mail: theva@pnnl.gov
Vendor Exhibit Coordinator: Joe Gray; E-mail: joegray3@palmborgassociates.com

Board Members

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Please contact us if you are interested in getting involved in PNWAVS. We will hold a Board Meeting immediately following the Symposium on Friday afternoon.

The list of past PNWAVS Chairs includes many of the notable vacuum scientists from the Pacific Northwest region. We appreciate their dedication to keeping vacuum and surface science pursuits thriving in the region.

Name	Year(s) served	Affiliation during service (if known)
Roland R. LaPelle	1962-1964	Boeing
Edwin Srebnik	1964-1966	
Joseph L. Rumney	1967-1970	
Larry S. Price	1967-1971	
Kenneth W. Bird	1970-1971	
B. Michael Wareham	1972	
Johnnie E. Schmauder	1973-1974	
Wallace C. Budke	1975-1978	
M. Tom Thomas	1979	Pacific Northwest [National] Laboratory
Virginia E. Lowe	1982	Boeing
Paul R. Davis	1983-1984	Oregon Graduate Center
Michael A. Bayne	1985	Tektronix
John F. Wager	1986	Oregon State University
Philip R. Watson	1987-1989	Oregon State University
Eric M. Stuve*	1990	University of Washington
David G. Castner*	1991-1992	University of Washington
J. Thomas Dickinson*	1993	Washington State University
Scott A. Chambers*	1994	Pacific Northwest National Laboratory
John P. LaFemina	1995	Pacific Northwest National Laboratory
Mark Bussell	1996	Western Washington University
Steve Joyce	1997	Pacific Northwest National Laboratory
Marjorie A. Olmstead*	1998-1999	University of Washington
J. Thomas Dickinson*	2000	Washington State University
Michael Henderson*	2000-2001	Pacific Northwest National Laboratory
Fumio S. Ohuchi*	2001-2002	University of Washington
Gregory S. Herman*	2002-2003	Hewlett-Packard
Theva Thevuthasan*	2003-2004	Pacific Northwest National Laboratory
David Patrick	2004-2005	Western Washington University
Kerry Hipps*	2006	Washington State University
Zdenek Dohnalek*	2007-2008	Pacific Northwest National Laboratory
Ursula Mazur	2009	Washington State University
Shuttha Shutthanandan*	2010	Pacific Northwest National Laboratory
Alex Chang	2011	Oregon State University
Tiffany Kaspar*	2012	Pacific Northwest National Laboratory
Louis Scudiero	2013	Washington State University
Mark Engelhard*	2014	Pacific Northwest National Laboratory
David N. Mcllory	2015	University of Idaho
Scott Smith	2016	Pacific Northwest National Laboratory
Liney Arnadottir*	2017	Oregon State University
Yingge Du	2018	Pacific Northwest National Laboratory
David Y. Lee	2019	Washington State University
Zihua Zhu	2020	Pacific Northwest National Laboratory
Zhenxing Feng	2021	Oregon State University
Elton Graugnard	2022-2023	Boise State University
Vijay Murugesan	2024	Pacific Northwest National Laboratory
*** AVS Fellows**		

Applied Surface Science Division

Advancing the Science and Technology of Materials, Interfaces, and Processing

The mission of the Applied Surface Science Division of the AVS is to provide a forum for research and education in the preparation, characterization, modification, and utilization of surfaces and interfaces in practical applications. The current vision for implementation of the mission statement includes promotion of science and technology relevant to:

- understanding solid/gas, solid/solid, and solid/liquid interfaces of practical importance.
- methods for characterizing these interfaces for composition, bonding, topology and structure.
- modification of interfaces to optimize the stability, reactivity or other properties of components and/or devices.

Chair: Jordan Lerach**;** Email: jordan_lerach@avs.org
Chair- Elect: Samantha Rosenberg; Email: samantha_rosenberg@avs.org
Secretary: Julia Zakel**;** Email: julia_zakel@avs.org
Treasurer: Peter M. A. Sherwood; Email: peter_sherwood@avs.org
Past Chair: Alex Shard; Email: alex_shard@avs.org

EC Members-at-Large (2024-2026)
David Morgan; Email: david_morgan@avs.org
Hong Piao; Email: hong_piao@avs.org

EC Members-at-Large Early Career (2024-2026)
Lyndi E. Strange; Email: lyndi_strange@avs.org

EC Members-at-Large (2023-2025)
Timothy Spila; Email: timothy_spila@avs.org
Tanguy Terlier; Email: tanguy_terlier@avs.org

AVS Science and Technology of Materials, Interfaces and Processing

AVS is a not-for-profit 501(c)(3) scientific association established for the purpose of providing services, disseminating information, and providing support to the scientific community-at-large.

The AVS 70 International Symposium and Exhibition (AVS 70), will take place November 3-8, 2024, at the Tampa Convention Center in Tampa, FL. This Symposium will tackle cutting-edge issues in materials, processing, and interfaces, relevant to both research and manufacturing communities.

The weeklong symposium showcases the multidisciplinary and diverse topics of relevance to the AVS community while also highlighting topics of emerging interest and importance within the Symposium theme **"Innovating Sustainability: Next Generation Energy and Quantum Devices and Their Characterization."** The program also includes Focus Topic and Mini Symposia highlighting the crosscutting nature and emerging interests – including AI and big data - as well as an outstanding vendor exhibition.