The 32nd Annual Symposium of the PNWAVS Science and Technology Society (www.pnwavs.org) will be a hybrid onsite-virtual meeting hosted by Oregon State University located at Johnson Hall in Corvallis, OR. The meeting will consist of one afternoon tutorial talks and one and half days of invited talks, plenary speakers, and a student presentation competition.

The PNWAVS symposium has a long tradition of providing a stimulating interdisciplinary program in a relaxed, informal atmosphere. The meeting attracts a broad representation of government, corporate, and university researchers from throughout the Pacific Northwest, Western Canada and Alaska. The symposium provides an excellent opportunity for students and postdocs to sharpen their presentation skills. This tradition will continue as we adopt a hybrid online-virtual format for the 2021 Symposium due to the Coronavirus pandemic. We invite oral and poster presentations from students, postdoctoral and researchers. Student presentations will be evaluated separately and awards will be announced at the end of the symposia.
Symposium Format

This hybrid symposium will adopt a different format than our traditional meetings. An in-person meeting will be hosted at Johnson Hall of Oregon State University to welcome all on-site visitors. Attendees can choose to participate online, too. All content will be streamed via Zoom, and a Discord channel will be available to facilitate real-time text chat between attendees.

Tentative agenda:

- **NNCI/Characterization Tutorial**
  - Heath Kersell, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR
    - Ambient pressure XPS and ambient pressure STM
  - Dan Graham, Department of Bioengineering, University of Washington, Seattle, WA
    - ToF-SIMS
  - John Conley, School of Electrical and Computer Engineering, Oregon State University, Corvallis, OR
    - Atomic layer deposition
  - Wednesday afternoon, 40+5 minutes each tutorial talk with two 10 minutes break. Total 2.5 hours

- **Invited speakers**
  - Liane Moreau, Department of Chemistry, Washington State University, Pullman, WA
  - Matthew Yankowitz, Department of Physics, University of Washington, Seattle, WA
  - Konstantinos Goulas, School of Chemical, Biological, and Environmental Engineering, Oregon State University, Corvallis, OR
  - Simone Raoux, Helmholtz-Zentrum Berlin, Berlin, Germany
  - Luke Hanley, University of Illinois, Chicago, IL
  - Swarup China, Pacific Northwest National Laboratory, Richland, WA
  - 35+5 minute each invited talk

- **Plenary lecture, Wednesday afternoon/evening**
  - Andrei Kolmacov, National Institute of Standards and Technology, Gaithersburg, MD
    - Topic: Interfacial Spectroscopy, Imaging, and Fabrication In Liquids with Electron and X-ray beams

- **Plenary lecture, Thursday lunchtime**
  - Jinghua Guo, Lawrence Berkeley National Laboratory, Berkely CA
    - Topic: Operando X-ray spectroscopy

- **Contributed talks and Posters**
  - Contributed/Vendors oral presentations on Friday morning
  - 16+4 minute time slots

- **Student presentation competition**
  - Wednesday afternoon for undergraduate oral competition
  - Thursday morning and Thursday afternoon for graduate oral/poster competition
  - Posters on Gather.town
  - 16+4 minute time each talk
  - Undergraduate and graduate presentations judged separately

- **Presentation awards ceremony, Friday lunchtime**
  - Cash prizes to the top three graduate and undergraduate presentations
Call for Presentation Abstracts

We welcome both oral and poster presentations at this meeting. Prepare one-page abstract (8 ½” x 11”, with a 1” border using Times New Roman 12 font) suitable for reproduction with headings that include title (title case), authors’ names (presenter underlined, note whether undergraduate or graduate), affiliations, and address in Microsoft Word. For your convenience, a template is available on our website, www.pnwavs.org. Submit abstracts by September 1, 2021, via email to the conference Chair, Zhenxing Feng (zhenxing.feng@oregonstate.edu).

Each plenary talk will have 50-minute time slot and invited oral presentation will have 40-minute time slot. Each contributed oral presentation will have a 20-minute time slot, with 15 minutes (strictly enforced) for the talk and 5 minutes for questions. Presenters will be expected to share their slides and audio from their computer/laptop over Zoom at their allotted presentation time. Streaming video of the presenter is optional but encouraged. We will hold a “dry run” on Tuesday, Sept. 7 to provide final details on the logistics of the virtual format and allow all presenters a chance to test their presentation setup. In addition, we ask that presenters email a copy of their presentation to the Conference chair (zhenxing.feng@oregonstate.edu) to serve as a backup.

Poster presentation can be prepared on either one-page or multiple page slides and be presented via Gather.town.

Topics

Various vacuum tools have been widely used in many fields. As an interdisciplinary, professional Society, AVS supports professionals involved in a variety of disciplines - chemistry, physics, biology, mathematics, and all engineering disciplines, through common interests related to basic science, technology development, and commercialization of materials, interfaces, and processing. Examples include but are not limited to:

Nanomaterials Preparation and Properties
- Synthesis (such as CVD, solution, vacuum)
- Electronic, magnetic, optical, thermal properties
- Quantum sciences
- Applications

Thin Film Deposition and Characterization
- Metals, semiconductors, and insulators
- Electronic, magnetic, and multiferroic properties
- Epitaxial superlattices and interfaces
- Organic films and self-assembled monolayers
- Advanced thin film characterization techniques

Biomaterials and Biological Systems
- Innovative surface analysis methods in bio-interfacial systems
- Materials in biological systems
- Protein-surface, cell-surface and microbial-surface interactions
- Biosensor, biossay and biotechnology interfaces
- Biology at the nanoscale and imaging modalities
- Colloidal, particle and biomembrane systems

Environmental Science and Applications
- Environmental interfaces and ambient surfaces
- In-operando studies

Surface Science and Catalysis
- Surface structure
- Surface reconstructions
- Interface chemistry
- Physisorption and chemisorption
- Catalytic processes

Energy Materials
- Solar harvesting materials
Student Awards

There will be a student presentation competition for undergraduate and graduate students. If you wish to participate in the competition, please indicate the level (highschool, undergraduate or graduate) on your abstract and show it in the first presentation slide.

A cash award of $500 plus $500 towards expenses to attend the International AVS Symposium will be given to the winner of the graduate competition. A cash award of $250 will be given to the winner of the undergraduate competition. Cash awards will also be given to the 2nd and 3rd place winners from both competitions.

Registration

The Registration (see below for details) for virtual meeting is free and the onsite meeting is $50 per person to cover onsite costs (food, drinks, etc). Attendees must register in advance. All invited speakers are waived for registration. We also have some limited budgets to cover costs (registration, lodging, etc.) for onsite attendees based on first-come-first-served rules and the priority is given to students. The online registration will be available at www.pnwavs.org. If you have any questions about registration, please contact Shuttha Shutthanandan by email (shuttha@pnnl.gov) or phone at 509-371-6530.

Conference Committee

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