

2024 Frontiers of APT Physics, Data Processing, Analysis and Reconstruction

Drs. Ali Sayir, Emmanuelle Marquis; Wolfgang Windl | August 1-2, 2024 | Arlington, VA

Basic Research Innovation Collaboration Center (BRICC)
4100 N Fairfax Drive, Suite 450 | Arlington, VA 22203

Day 1 | August 1, 2024

Session	Time	Activity
Check-in	8:00-8:30	Registration and check-in
Overview of goals and objectives	8:30-8:45	Welcome
I. Physics of evaporation	8:45 – 9:30	Richard Forbes (U Surrey) - <i>On the scientific status of the theory of field desorption and field evaporation</i>
	9:30 – 10:15	Yuwen Qi (Ohio State U) <i>Advancing Understanding of Field Evaporation Mechanisms Through In-Field Molecular Dynamics Simulations</i>
	10:15 – 10:35	Break
	10:35 – 11:05	Jean-Baptiste Maillet (U Rouen) <i>Effect of Implanted Hydrogen on the Evaporation Field at Nanoscale</i>
	11:05 – 11:50	Francois Vurpillot (U Rouen) <i>Field Evaporation Energy Loss Spectroscopy: Beyond Atom Mapping in Atom Probe Tomography</i>
	11:50 – 12:30	Discussion
	12:30 – 1:45	Lunch
II. Challenges for materials applications	1:45 – 2:15	Baishakhi Mazumder (U Buffalo) <i>APT for oxides and nitrides: Potential applications and existing challenges</i>
	2:15– 2:45	Daniel Schreiber (PNNL) (by zoom) <i>Challenges in the application and quantification of APT data from metals and oxides</i>
III. Analysis Workflows and standardization	2:45 – 3:30	Alaukik Saxena (MPIE) <i>Machine learning-based workflows to quantify microstructural features in atom probe tomography data</i>
	3:30 – 4:00	Break
	4:00 – 4:30	Iman Ghamarian (U Oklahoma) <i>Cluster analysis and uncertainty: Transitioning from deterministic to probabilistic methods</i>
	4:30– 5:00	Paul Styman (UK NNL) <i>Overview of the OECD/NEA activity on determining best practices for Atom Probe Tomography of nuclear materials</i>
	5:00 – 5:30	Discussion
Dinner TBD		

Day 2 August 2, 2024		
Session	Time	Activity
Check-in	8:00 – 8:30	Check-in
III. Standardization (Cont.)	8:30 – 9:10	Markus Kuehback (U Berlin) (by zoom) <i>Standardization of workflows in atom probe in light of FAIR principles of research data management software</i>
	9:10 – 9:40	Arun Devaraj (PNNL) (by zoom) <i>Establishing globally accepted terminologies and standards for APT: the IFES standards committee perspective</i>
	9:40 – 10:10	Frederick Meisenkothen (NIST) <i>Some Challenges to Accurate and Repeatable Chemical Analysis in the Atom Probe</i>
	10:10 – 10:45	Discussion
	10:45 – 11:00	Break – End of workshop
IV. (for speakers) Article preparation	11:00 – 12:00	For speakers only Discussion – manuscript drafting
	12:00 – 12:30	Closing and next steps