

International Conference on Atom Probe Tomography

Microscopy

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SPEAKERS OF PLENARY LECTURES

Hans-Werner Fink

Physics Institute, University of Zürich, Switzerland

Professor Fink, a former student of Gert Herlich, pioneer of the Field Ion Microscopy, will present his most recent results about Coherent Low Energy Electron Microscopy of Biomolecules approaching Atomic Resolution.



John A. Panitz



Department of Physics and Astronomy, University of New Mexico, USA

John Panitz is Emeritus Professor of Physics at the University of New Mexico and Emeritus Professor of Cell Biology and Physiology in the School of Medicine. He is together with Erwin Müller the co-inventor of the atom probe. The 10-cm Atom-Probe and the Imaging Atom-Probe are the progenitors of all recent atom probe instruments. He has published more than a hundred articles and book chapters on major developments in atom probe instrumentation and the application of atom probe technology in surface and material science, biology and medicine.

Peter Hommelhoff

Chair of Laser Physics, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

Before Peter Hommelhoff became a full professor at the University of Erlangen he was head of a research group at the Max-Planck Institute of Quantum Optics. His research is focused on the investigation of light-matter interaction at femto- and attosecond timescales. In particular he studies the wave and particle properties of electrons emitted from nano-field emitters. On the occasion of the conference Prof. Hommelhoff will give the honory J. R. Block lecture.





Derk Joester

Department of Materials Science and Engineering, North Western University, USA

Derk Joester is an Associate Professor. His interdisciplinary research is targeted not only to understand the structure and functional organization of biominerals but also their synthesis.



Monday

Bus Transport Commundo Hotel – MPI (Buses are leaving at 8:10, 8:20, 8:30, 8:40)		
09:00	MPH Opening remarks G. Schmitz	
09:15	MPH Holography and Coherent Diffraction with Low Energy Electrons HW. Fink, University of Zürich PT-1	
10:00	MPH Perspectives from an Atom Probe Original J. A. Panitz, University of New Mexico PT-2	
10:45 – 11:00 Coffee Break		
	Energy Materials and Batteries MPH	Workshop I: Data Mining Tools Organized by C. Cairney, K. Rajan
11:00	On the Roles of Graphene Oxide Doping for Enhanced Supercurrent in MgB2 W. K. Yeoh S01-01	Interpreting atom probe analysis
11:15	Nanoscale compositional characterization of advanced Li ion battery cathode materials by atom probe tomographyA. Devaraj\$01-02	M. Moody (INVITED) WS1-01
11:30	Microstructural insights in hig-performing nanostructures for solid oxide fuel cell anodes B. Scherrer S01-03	Interfacial excess mapping and related analysis methods for atom probe tomography P. Felfer WS1-02
11:45	Atom Probe Tomography Study of Corrosion and Hydrogen Pickup in Zirconium-Niobium Alloys S. B. Setiadinata S01-04	Quantitative Chemical-Structure Evaluation using APT - Short-Range Order Analysis of Fe-Al R. Marceau WS1-03
12:00	Post-Irradiation Annealing of Ni-Mn-Si Clusters in a NeutronIrradiated Reactor Pressure Vessel Steel Using Atom Probe () P. D. Styman \$01-05	Further tools for APT analysis: aiding automation and correctness
12:15	Ion-irradiation induced clustering in a W-Re-Os alloy: An Atom Probe Tomography and Nanoindentation study A. Xu S01-06	D. Haley (INVITED) WS1-04
12:30		WORKSHOP DISCUSSION
12:45 – 13:45 Lunch		nch MPI Restaurant
13:45 – 14:45 Poster Session I Poster Area		
14:45 – 15:15 IFES Business Meeting MPH		
15:15 – 15:30 Coffee Break		



APT&M 2014 - Stuttgart

MPH 10:00

Plenary Talk (PT-2)

Perspectives from an Atom Probe Original

J.A. Panitz

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The Atom-Probe was introduced at the 14th International Field Emission Symposium in 1967 by Erwin W. Müller and John Panitz [1]. The development of the Atom-Probe from that simple instrument to the commercial Atom Probe Tomographs (APTs) available today is the story of an instrument that an initial NSF reviewer called "impossible" because "single atoms could not be detected". It is also the story of an underlying problem that became known as the "Aiming Error" and a philosophical change in the way the Atom-Probe was used; codified with the introduction of the 10-cm Atom-Probe, that became the Imaging Atom-Probe and was called "the progenitor of all APTs" [2-4]. This talk will bridge early Atom-Probe developments with challenges that remain to this day.

 Erwin W. Müller and John Panitz. The Atom-Probe Field Ion Microscope. Proceedings of the 14th International Field Emission Symposium. (National Bureau of Standards, Washington, DC 1967)
 J. A. Panitz. The 10-cm Atom Probe. Rev. Sci. Instrum. 44, 1034-1038 (1973)

[2] J. A. Panitz. The To-cm Atom Probe. Rev. Sci. Instrum. 44, 1034-1038 (1973)

[3] J. A. Panitz. Imaging Atom-Probe Mass Spectroscopy, Progress in Surface Science 8, 219-262 (1978)
[4] David N. Seidman. Three-Dimensional Atom-Probe Tomography: Advances and Applications. Annu. Rev. Mater. Res. 37, 130 (2007)

