Tuesday Morning Break, September 23, 2025

Exhibitor Technology Spotlight Sessions
Room Hall A - Session EW-TuMB

Exhibitor Technology Spotlight Session I
Moderator: Christopher Moffitt, Kratos Analytical Inc

10:15am **EW-TuMB-2 New Developments for Surface Analysis from Thermo Fisher Scientific***, **Tim Nunney**, Robin Simpson, Paul Mack, Simon Bacon, Dhilan Devadasan,* Thermo Fisher Scientific, UK*; Charlie Chandler, Mark Baker,* University of Surrey, UK

In this presentation we will showcase the latest innovations in instrumentation for surface and materials analysis from Thermo Fisher Scientific, including a new instrument for improving capabilities for XPS depth profiling.

10:30am **EW-TuMB-3 Enviro Standard Analytical Tools: New Developments and Applications***, Francesca Mirabella, Stefan Böttcher, Paul Dietrich, **Andreas Thißen**,* SPECS Surface Nano Analysis GmbH, Germany

This presentation will focus on recent advancements and applications of our comprehensive surface analytical instrumentation the Enviro Standard Analytical Tools, with a particular emphasis on X-ray Photoelectron Spectroscopy (XPS) and Hard X-ray Photoelectron Spectroscopy (HAXPES). These techniques offer powerful insights into chemical composition, electronic structure, and buried interfaces. These tools have been integrated with additional modalities such as Scanning Electron Microscopy (SEM), Scanning Auger Microscopy (SAM), Ultraviolet Photoelectron Spectroscopy (UPS), and Inverse Photoemission Spectroscopy (IPES), enabling multi-faceted characterization from surface to subsurface to address complex analytical challenges. The talk will include a discussion of innovations in instrumentation and recent applications.

10:45am **EW-TuMB-4 Small Lab-Size Cryogen-Free Low Temperature SPM with Magnetic Field***, **Juergen Koeble**,* Scienta Omicron GmbH, Germany*; Andrew Yost,* Scienta Omicron Inc

The rising price of liquid helium increasingly and significantly adds to operational costs for low temperature SPM research. Recent advances in cryogenic technologies coupled with improvements in cooling power, temperature stability, and vibrational properties allow for integration into highly sensitive instruments such as scanning probe microscopes. Following scientific demands for nano-scale scanning probe microscopy, e.g. low temperature, optical and magnetic analysis, RF signaling, lowest drift, and signal-to-noise, we have developed a modular cryogen-free low temperature scanning probe microscope for STM and AFM in ultra-high vacuum. The new **ARCTIC** SPM represents the latest innovation in ultra-low-temperature scanning probe microscopy.

Built on our newly developed **ARCTIC** closed-cycle cooling platform, it combines cutting-edge technology with user-friendly operation. With the **ARCTIC** SPM LAB, you benefit from unattended, continuous cooling, eliminating the complexities of handling extreme temperatures while delivering virtually unlimited measurement time with stability traditionally only associated with liquid helium cryostat-based SPMs. The **ARCTIC** SPM also provides long-term stable low temperature operation of a dry superconducting magnet, and this new highly compact scanning probe microscope offers easy optical access for advanced optical experiments even in the presence of a high magnetic field.

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