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 EnviroESCA II: An Evolution in Surface Chemical Analysis Under Environmental Conditions***, **Francesca Mirabella**, Stefan Böttcher, Paul Dietrich, Andreas Thißen,* SPECS Surface Nano Analysis GmbH, Germany

EnviroESCA elevated chemical surface analysis into a new era, bringing operando chemical studies and easily accessible near ambient pressure XPS from fundamental research into applied surface science and standard analytical laboratories. In view of the recent emphasis within the field of XPS applications on renewable energies, UHV-incompatible specimens, and advanced electrochemical studies, this is the perfect time for the next step to be taken. EnviroESCA II significantly enhances surface analysis capabilities under environmental conditions.

As an evolution from the successful first release, EnviroESCA II keeps the unique operational concept for chemical and dynamical analysis, expanding into bulk, electronic structure, and atomic structure analysis with seamless infrastructure integration and higher operational performance. The EnviroESCA II is a unique instrument that facilitates unparalleled automated routine analysis under both environmental and operando conditions. This capability is a result of a unique combination of two parts: the SPECS AEOLOS 150 AD-CMOS, a wide-angle electron analyzer and the µFOCUS 450, which is a monochromated three-color X-ray source with an adjustable probing depth ranging from the surface to the bulk.

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.

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

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

12:30pm **EW-TuL-2 RHK Technology: 37 Years of Continuous SPM Innovation*, Adam Kollin,*** RHK Technology, Inc.

RHK Technology was founded in 1981 to develop new research tools for the Surface Science research community.The first product introduced was a High Resolution Electron Energy Loss Spectrometer (HREELS) followed by a Digital Temperature Controller for Temperature Programmed Desorption (TPD) measurements.RHK introduced its first Scanning Probe Microscope control system in 1988.In the following 37 years, RHK has developed a wide range of cutting-edge Scanning Probe Microscopes focused on UHV and cryogenic environments.The company is located in Troy Michigan and has delivered over 1500 SPM systems to over 40 countries around the world.

Adam Kollin, the founder and CEO of RHK Technology will discuss the latest advances from RHK including their new tenth generation SPM control system, the R10.Further advances in their cryo-free SPM system will be highlighted such as new Lumin-SLT that features a 70% light collection efficiency for Cathodoluminescence (CL) Photoluminescence (PL), STM Light Emission (STM-LE) as well as Raman spectroscopy studies.Upcoming capabilities will also be discussed.

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