Wednesday Afternoon, October 24, 2018

Exhibitor Technology Spotlight Workshops
Room Hall A - Session EW-WeL

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

12:40pm **EW-WeL-3 The TESLA JT SPM*, Markus Maier,*** Scienta Omicron GmbH, Germany

The TESLA JT SPM provides access to more than 5 days SPM measurement time at temperatures down to 1K (4He

operation) with magnetic fields larger than B > 3T. Careful thermal design of the bath cryostat and JT cooling stage

as well as the integrated UHV magnet lead to exceptionally low LHe consumption of only 11 liters LHe for 120

hours, specifically also during magnet operation and field variation. The external JT Helium supply allows for 3He

operation and significantly lower temperatures in the range of 500mK.

The microscope head is a proven, highly stable design developed specifically for high magnetic field environments.

It offers the full range of SPM measurements modes, including Scienta Omicron's leading QPlus AFM technology.

Safe and independent tip/sample exchange under optical control is one of several key ease-of-use features delivering

dependable high performance SPM and successful scientific work.

In contrast to a conventional wet magnet concept, the dry split-pair magnet provides for optical access enabling

various optical experiments and even in-situ evaporation into the SPM at low temperatures.

We will discuss the technical concept and will show performance evaluation measurements at T=1K that prove

stability below 1pm as well as energy resolution on superconductors.

Specifically, continuous STM and QPlus AFM imaging at varying temperatures during magnetic field ramping

without increasing the LHe consumption differentiate the concept from traditional 4He and 3He systems and open

up new experimental possibilities.

1:00pm **EW-WeL-4 MKS Instruments, Inc., 523 Granville-Phillips® Wide-Range Cold Cathode Transducer: Applications and Market Update*, David Kelly,*** MKS Instruments

A dual-discharge, wide-range cold cathode ionization gauge, marketed by MKS Instruments, Inc. as the 523 Granville-Phillips® Wide-Range Cold Cathode Transducer, was commercially disclosed at the Exhibitor Technology Spotlight session one year ago. This novel technology promised unprecedented low-cost of ownership for industrial vacuum applications requiring limited pressure measurement accuracy between atmosphere and 10^-7 Torr.

Several facilities have now tested the technology and vacuum technologists all over the world are quickly experiencing first-hand the unique capabilities of this revolutionary technology. This presentation describes several examples of real-world applications of the new product with a focus on process compatibility, sensor lifetime, and overall cost-reductions experienced by customers in manufacturing, research facilities and general vacuum applications, who are seeking alternative pressure measurement capabilities. The initial voice-of-customer reports confirm the original performance and cost features and benefits assertions originally stated by MKS Instruments.

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