



Bruker **AXS** Inc.

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**FOR IMMEDIATE RELEASE**

## **Bruker AXS Introduces the M4 TORNADO™ Novel High Performance $\mu$ -XRF System**

CHICAGO, Illinois -- March 9, 2009 – At Pittcon® 2009, Bruker AXS introduces the *M4 TORNADO™*, a novel bench-top high-performance micro X-Ray Fluorescence ( $\mu$ -XRF) spectrometer. The system enables non-destructive, position-sensitive elemental analyses on solid or liquid samples, particles, inclusions and coatings with unprecedented speed and accuracy for a wide range of applications, including quality control in microelectronics, RoHS, forensics, geology and many others.

The *M4 TORNADO* features a large vacuum sample chamber, accommodating samples of varying sizes and shapes for investigation under vacuum or air, and without the need for extensive sample preparation. An ultra-brilliant X-ray tube in combination with polycapillary X-Ray optics generates a very intense excitation beam with spot sizes down to 25 microns. The large solid angle and the extremely high count rate capability of Bruker's industry-leading *XFlash®* silicon drift X-Ray detector allow taking full advantage of the high intensity fluorescent radiation emitted from the sample, resulting in very short measurement times. Not only does this make the *M4 TORNADO* highly productive for single spot measurements, but moreover, in conjunction with the computer-controlled high speed sample stage, it enables very fast one- or two-dimensional distribution analyses "on the fly", as well as automated multiple point measurements.



The control and analysis software of the *M4 TORNADO* is based on the well-proven *ESPRIT™* software suite, used with Bruker's *QUANTAX™* EDS systems, incorporating years of experience in X-Ray microanalysis. Sample positioning is supported by simultaneously displaying both a low magnification image for orientation and a high-resolution optical image for precise pinpointing of the desired XRF analysis spot. The high speed stage is controllable by joystick or via software with intuitive point-and-click capability. The system provides comprehensive tools for qualitative and fully quantitative element and distribution analysis. Line scans and mappings can be performed in the *HyperMap* spectral imaging mode which enables data mining and evaluation any time during or after the measurement. A variety of automation functions make the *M4 TORNADO* the ideal tool for routine analysis.

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Due to its flexible, modular concept the *M4 TORNADO* can be tailored to dedicated analytical tasks. In its standard configuration, the instrument is equipped with a single tube and a single detector. Customers have the option to either add up to two detectors, or to add a second X-Ray tube with different target material.

Working with more than one detector not only reduces acquisition time even further, but also improves the analysis of irregularly shaped samples through the reduction of any 'shadow' effects, and facilitates the identification of diffraction peaks in the spectrum.

Depending on the application, a second tube with different target material can overcome the limitations in excitation efficiency for certain elements, inherent to any single-target tube, and therefore provide ultimate sensitivity for an even wider range of elements.

Mr. Thomas Schuelein, Co-President of Bruker AXS, commented: "With the introduction of the *M4 TORNADO*, Bruker AXS is extending its new family of  $\mu$ XRF analyzers towards the very high performance end. Our customers will benefit from both excellent analytical performance and unprecedented productivity."

Dr. Michael Haschke, Product Manager  $\mu$ -XRF, added: "Its unique combination of innovative technical capabilities make the *M4 TORNADO* a very powerful analytical tool that is setting a new standard in  $\mu$ -XRF spectrometry."

**For Further Information:**

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