

THE NEW ORBIS MICRO-EDXRF ELEMENTAL ANALYZER

Jim Hardy and Bruce Scruggs

EDAX, a unit of Ametek, Inc., Mahwah, NJ 07430

The new Orbis micro-EDXRF elemental analyzer was designed with both micro-XRF capability and analytical flexibility in mind. The unit incorporates a unique turret which accommodates video optics and X-ray optics and collimators. The turret can utilize mono-capillary or poly-capillary optics while using collimators for larger spot analysis. All X-ray positions in the turret can use primary beam filters for improved sensitivity or reduction/elimination of diffractive artifacts and the X-ray tube's characteristic lines. The poly-capillary optic lens has been improved to dramatically increase X-ray flux on the sample while further improving the hardness and focus of the lens for high energy X-rays. The Orbis is available with either large area Si{Li} or SDD detectors. Given the high input countrates which can be achieved with the poly-capillary excitation optics, the SDD allows for a reduction in acquisition times by up to a factor of 4x in many applications. Applications include spot and imaging analysis in wide variety of areas where SEM-EDS is not sufficient or non-destructive measurements are desired.