New Instrumentation for X-ray Material Research

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X-ray analysis is used in material research for a wide range of applications and samples, including thin films, bulks and liquids. The available instruments for X-ray analysis support a broad range of different analytical methods: X-ray Reflectometry (XRR), High Resolution X-ray diffraction (HRXRD), In-Plane Grazing Incidence Diffraction (IP-GID), Texture, Stress and Small-Angle X-ray Scattering (SAXS). Micro X-ray Diffraction (µXRD) has just lately been joined by simultaneous Micro X-ray Fluorescence (µXRF) analysis. While research instruments need to provide large flexibility in the analytical method, they also need to be easy to operate for non-experts in a multi-user facility.

Bruker AXS has implemented innovative technologies, like SNAP-LOCK for reproducible optics changes and DAVINCI component recognition in order to create the first all-purpose diffractometer that supports facilitates its switching between applications. Versatility in experimental setup is complemented by latest innovations in X-ray source and detector technology. Maximum sample information is obtained by combining the results of different applications via a new integrated software approach.

We will present this new analytical system that combines reliable application, operating convenience, ergonomics and flexibility with the shortest possible measuring time and highest analytical performance.