Commercial Presentations

CL1

CLEVER DIFFRACTOMETERS WITH THE INCOATEC MICROFOCUS SOURCE

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Several new developments for diffractometry equipment took place in the recent years. All the three key components X-ray source, optics and detector were strongly improved. The miniaturization in the semiconducting industry, new developments of nanosized materials and last but not least the growing field of life science push the needs for high-flux X-rays within a small spot. On the one hand a lot of novel, extremely high-brilliant synchrotrons were built or are still in construction. On the other hand smart small X-ray sources are now available for lab diffractometry.

In this talk we will be presenting the cutting-edge of diffractometry with highly brilliant aircooled microfocus sources. Our Incoatec Microfocus Source, the IμS, gives a remarkable flux density of > 5×10^9 cts/s/mm^2 for Cu and > 2×10^9 cts/s/mm^2 for Ag, both at only 30 W. This is comparable to a lot of traditional rotating anode systems in the 4 to 5 kW range. The IμS was installed both, as an upgrade for existing diffractometers and as the key component in completely new diffractometers. It is combined with all kind of detectors like CCDs, image plates or pixel detectors. We will be explaining the issues during installation of these systems like safety, electronic and mechanical integration.

Last but not least, we will be showing selected examples of applications, which strongly benefit from these new high-brilliance low-power sources. GISAXS, high-pressure crystallography, stress analysis and single-crystal diffraction can be made now with very high quality and without the former issues of maintenance and missing beam stability.

CL3

EMPYREAN – 3D POWDER DIFFRACTOMETER PLATFORM

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Empyrean is new universal powder diffraction platform from PANalytical. The platform is based on newly developed goniometer, new sample stages and cradles and on well known Medipix detector technology from CERN. The new Empyrean platform uses well known PIXcel detector in 2D mode. Due to the small pixel size, high dynamic range and high linearity of PIXcel detector, it is possible to setup also Computed Tomography and Radiography experiments on the Empyrean platform. This allows full 3D image of measured object to be reconstructed, as well as cross-sections and slicing. This talk will focus on 2D and 3D experiment setup and worked examples.