new commercial products

Scintag X'TRA: new X-ray diffraction system

ARl Applied Research Laboratories announce their new XRD system, the Scintag **X'TRA**. The Scintag **X'TRA** offers solution for high-quality powder diffraction applications in the areas of academic research, chemicals, pharmaceuticals, polymers, semiconductors, thin films, metals and minerals.

Built around a vertical θ–θ goniometer, this instrument offers convenient geometry for handling powder samples by facilitating the sample preparation, sample changer options and the use of specialized sample holders. In order to optimize experimental conditions, the goniometer features removable dual Soller slits and continuous variable micrometer-controlled slits for adjusting the width of both the incident and diffracted beams. The X-ray optics on the Scintag **X'TRA** goniometer ensure high resolution in the low-angle regions where peaks can be observed down to 0.5°. The system's modular configuration allows the use of various sample stages to fulfill a wide range of different applications.

The Scintag **X'TRA** can also be equipped with the Scintag peltier cooled Si(Li) solid-state detector, tuned for high count rate in order to maximize coincidence loss. Thanks to the high resolution compared with a

Figure 1
θ–θ configuration and exclusive peltier-cooled solid-state detector for optimum performance in X-ray powder diffraction.

scintillation detector, it removes $K\beta$ and fluorescence radiation, thus eliminating the need for filters and monochromators. Consequently, the diffraction peak intensities are substantially higher than for other available configurations.

System control for the Scintag **X'TRA** comes from the *DMSNT* software running under Windows NT™ as a true multitasking 32-bit data collection and analysis package.

The analytical algorithms include:

peak finding and profile fitting;
data file manipulation for scaling, adding and subtracting;
qualitative and quantitative analysis;
per cent crystallinity determination;
crystallite size determination by Scherrer, Williamson–Hall and Warren–Averbach methods;
texture and residual stress analysis;
indexing and least-squares unit-cell determination.

Marianne Diserens

ARL Applied Research Laboratories SA
En Vallaire Ouest C
Case Postale
CH 1024 Ecublens
Switzerland