new commercial products

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New analytical software for XRD simplifies identification of complex phase mixtures

Philips Analytical announces a new software module that makes phase identification easier and more reliable. Specifically designed for analyzing complex phase mixtures, **X'Pert HighScore** combines a host of powerful analytical tools into a single easy to use program running under Windows.

Designed for Windows 2000/XP, X'Pert HighScore also runs under Windows NT/ME/98/95. Graphical information and tables are linked and shown simultaneously. XRD measurement files from all suppliers can be opened.

The new generation search–match algorithm optimally combines peak and profile data to assemble a list of candidate materials from the reference database – but it is possible to change to using only profile or peak data or a different scoring strategy at any time during the analysis. The fully integrated search–match algorithm dynamically recalculates the scores for candidates and identified phases following changes in data by, for instance, adding or deleting peaks, truncating parts of a scan or changing the background.

X'Pert HighScore can automatically accept the best-matching candidates from the list of candidate materials, using a sophisticated filter function that combines several selection criteria such as score, abundance and number of new matching lines.

The basis for this 'automatic phase identification' is a feature known as auto-residue scoring. This is an extremely powerful way of dealing with multiphase problems which, in effect, mimics the way a human would decide on the likelihood of several different phases being present by basing the decision primarily on the unexplained profile features and peaks in the diagram. Previously explained features are used only to confirm or reject earlier choices. After identifying a phase, the auto-residue scoring function automatically re-evaluates all remaining candidates. Candidates similar to phases already identified now score lower and are shifted down the list. This also prevents, for example, 10 or 20 entries of quartz or corundum appearing at the top of the list before another phase is shown.

X'Pert HighScore can also operate in batch mode which allows a sequence of functions to be performed automatically. This gives push-button control of almost all functions and enables non-specialists to perform all kinds of tasks, from printing or reporting to complete phase identifications. Batch programs are freely configurable and are unlimited in number and size. A set of batches covering commonly used functions is already preprogrammed into the software.

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New X-ray Hystar range of high-performance image detectors

The new **X-ray Hystar** is a high-performance, high-resolution digital slow scan CCD camera with 16-bit image digitization that is available with a range of selected CCD sensors and coherent micro-fibre optic coupled optimized scintillator inputs. The CCD sensors offered are 2048 × 2048 pixels with single-channel readout or 2048 × 2048 pixels with four-channel readout for faster frame rates and 1024 × 1024 pixels with back illumination and single-channel readout. Models with additional CCD sensor options may be introduced in the future. Fibre-optic inputs include: direct 1:1 coupling for the greatest sensitivity and efficiency; magnifying tapers with an input size of 6 mm diameter (with 6 μm optical pixel resolution) and demagnifying tapers with up to 165 mm input diameter (with 57 μm optical pixel resolution).

The design of the new X-ray Hystar includes all new electronics for exceptional image stability and low noise performance. The new mechanical design gives improved cooling efficiency with greater robustness and protection from coolant leakage and spills. The modular design permits a choice of either water-cooling or air-cooling. The X-ray Hystar can be used with a UHV interface for EUV/XUV vacuum imaging. Interchangeable scintillator inputs can be manufactured to suit particular energy requirements (from EUV hard X-ray).

The new computer control interface allows greater acquisition flexibility and offers a wider range of acquisition software options. Software functions include, gain, user-definable integration period, binning 1× to 63× and sub-area readout. The X-ray Hystar conforms to the PSLink camera control protocol.

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New 9308-PCI picosecond time analyzer with PCI-bus interface

ORTEC has announced the availability of a new **PCI-bus interface** for the Model 9308 picosecond Time Analyzer. The Model 9308 is a multiple-stop time digitizer that provides picosecond time resolution for times ranging from nanoseconds to hundreds of microseconds. Its ability to process high event rates with excellent resolution and stability have made it popular for time-of-flight mass spectrometry, fluorescence/phosphorescence lifetime spectrometry, LIDAR, and DIAL applications.

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