



# PANALYTICAL X'PERT PRO MRD

## XRD Description

The X'Pert PRO materials research diffraction system utilizes a modular system approach to provide no-compromise performance for applications ranging from routine characterization to in-depth research investigations. The PreFIX (Pre-aligned Fast-Interchangeable X-ray optics) concept enables the diffraction system to be reconfigured in a few minutes without the need for re-alignment to handle different types of analysis. A suite of data analysis software from Philips is available.

## Applications

- Rocking curves
- Reciprocal space mapping
- Phase identification and quantification
- Stress analysis
- Texture analysis
- Reflectivity/GIXRD

**X-Ray source** Cu K $\alpha$  (1.5405 Å)

## Incident beam optics:

- Hybrid monochromator
- Ge (440) monochromator
- X-Ray mirror
- Fixed divergence slit
- Cross slit

## Detectors

Two sealed proportional detectors: 84% efficiency of Cu K $\alpha$

Goniometer High resolution: min step size is 0.0001

Sample holders: Wafer holder with 4 prong clips for pieces up to 4" diameter

## Software

- Philips X'Pert Data Collector
- Epitaxy (Rocking curve fit & simulation)
- Texture (Texture analysis)
- Smooth Fit (Automated Fitting)
- Highscore
- ICDD PDF2 2002



## Diffracted beam optics:

- Triple axis & rocking curve attachment
- Omniprobe gas injections system
- IXRF EDS system