

# The Multi-Detector System for the powder diffractometer at beamline B2

W.-H. Kaps, J.Ihringer, W.Prandl, M.Schilling

Institut für Kristallographie der Universität Tübingen, Charlottenstr.33, D-72070 Tübingen  
 www.uni-tuebingen.de/uni/pki e-mail: wolf-hendrik.kaps@uni-tuebingen.de

## X-RAY OPTICS

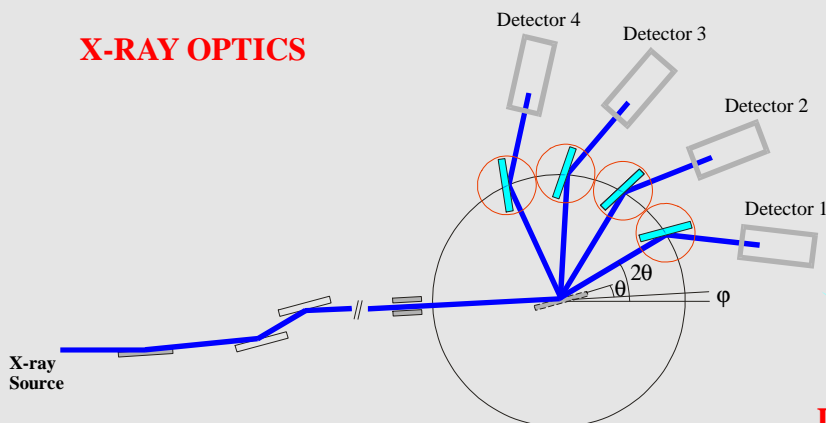
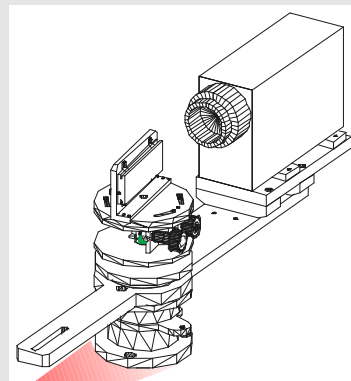


Fig.1: Schematic diagram of experimental configuration for synchrotron X-ray powder diffractometer at beamline B2 with mirror, monochromator and the multi-detector system

Fig.2: Detailed design of one unit of the multi-detector system. Detector arm with scintillation counter, crystal analyser holder with individual unit of the angle position.



## DESIGN

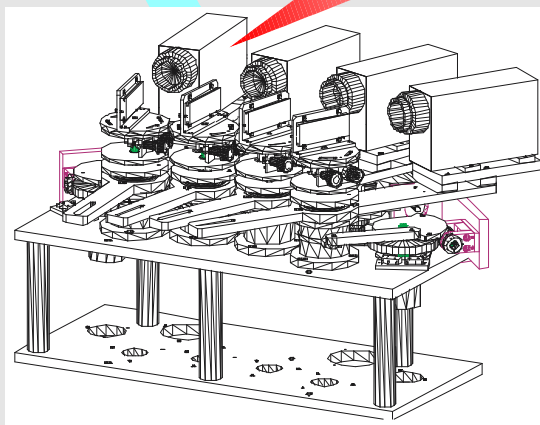


Fig.3: The multi-detector system

### Objectives:

- High throughput: four data sets are recorded simultaneously
- All data sets can be processed simultaneously by SIMREF 2.4 [1]: forget merging
- Analyser diffractometer adjustable for  $0.5 \leq \lambda \leq 1.8 \text{ \AA}$
- High angular resolution
- Compact unit
- Simple and efficient mechanical Control: one motor and encoder for the 4 analyser axes one motor and encoder for the 4 detector axes
- Design adapted for: flat specimens and capillaries the cryostat and vacuum chamber at B2

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### References:

[1] H.Ritter, <http://www.uni-tuebingen.de/uni/pki/simref/simref.html>, (1998)

## REALISATION

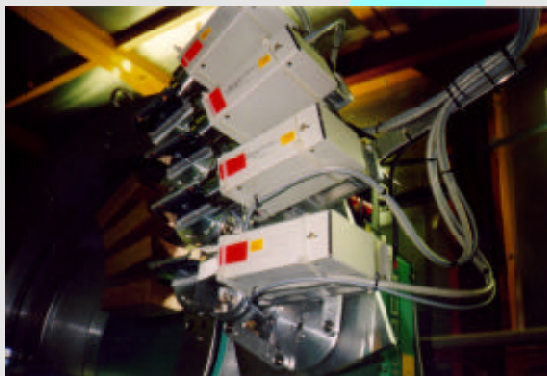


Fig.4: Status of the multi-detector system as mounted at beamline B2

## RESULTS

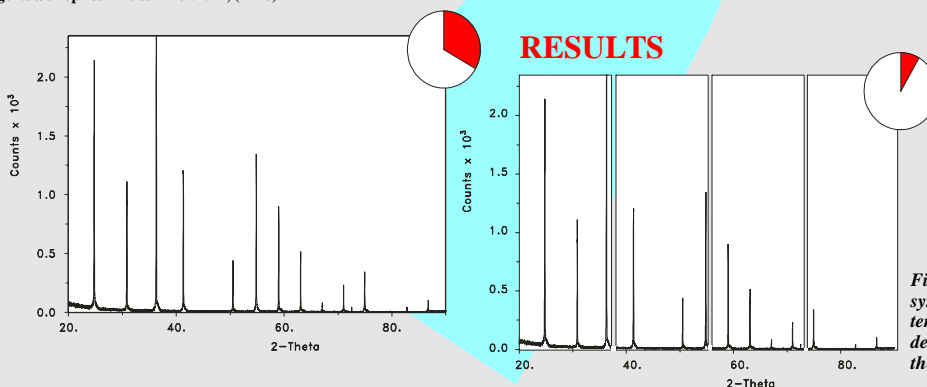


Fig.5: First results of the multi-detector system (LaB6 standard at room temperature), left scan of a single detector, right scans of the multi-detector system.

