General Area Detector Diffraction (GADDS)

Operating Principle
Monochromatic X-ray beams are generated from Cu X-ray tube with Graphite monochromator. Diffraeted beams from target are captured with HI-STAR Area detector.

System Overview
X-ray Generator – Cu X-ray sealed tube.
X-ray Optics - Flat graphite monochromator to obtain single K(α) wavelength of 1.5418 Å. Double pin-hole collimator used to control the beam size and divergence.

Goniometer and sample stage – D8 goniometer in horizontal 0-2θ geometry with driving step size of 0.001°. 2-position (54.74° and 90°) chi stage suitable for reflection mode diffraction, texture, stress and microdiffraction measurements.

Sample alignment – Laser-based sample alignment system. The cross-point of the laser beam and the optical axis of the zoom video (computer controlled zoom lens 1-7x) are pre-aligned to the instrument center.

Detector - The HI-STAR Area Detector is a two dimensional multi wire proportional counter (MWPC) and is the core of the GADDS system.

Applications
- Microdiffraction Analysis
- Stress and Texture Analysis
- Phase Identification

Features
- Real-time Data collection with unique 2D detector
- Laser/video system for easy sample alignment and positioning
- Ability to capture partial or entire Debye ring
- Large number of options types of samples and measurement applications

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