

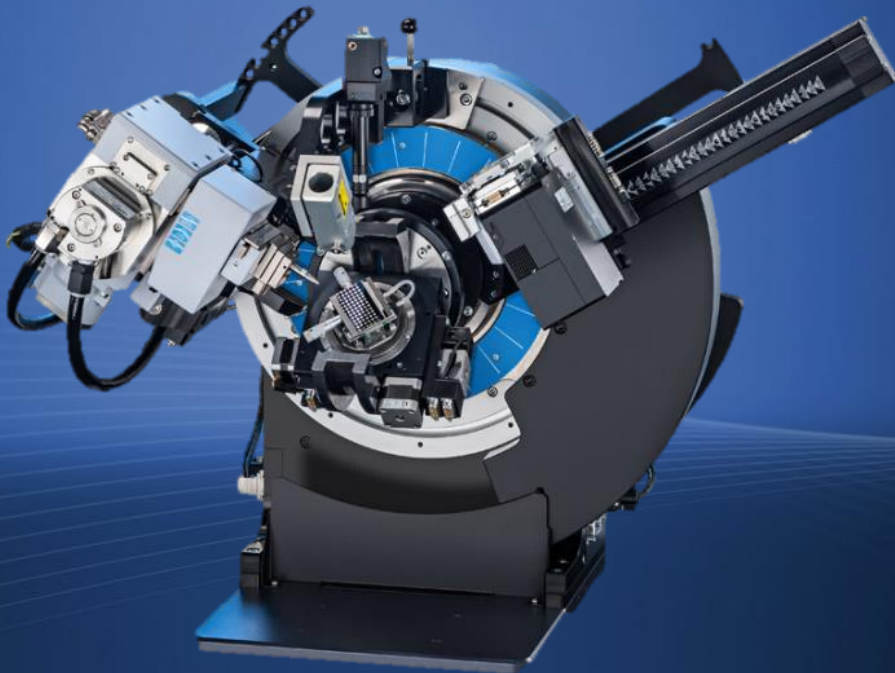


D8 DISCOVER Plus

Uncompromised Power

Unmatched Accuracy

Unparalleled Efficiency



BRUKER X-Ray Diffraction Solutions

XRD for Everyone



D2 PHASER

XRD for Everywhere

D8 ENDEAVOR

Push-Button Process Support

D8 ADVANCE

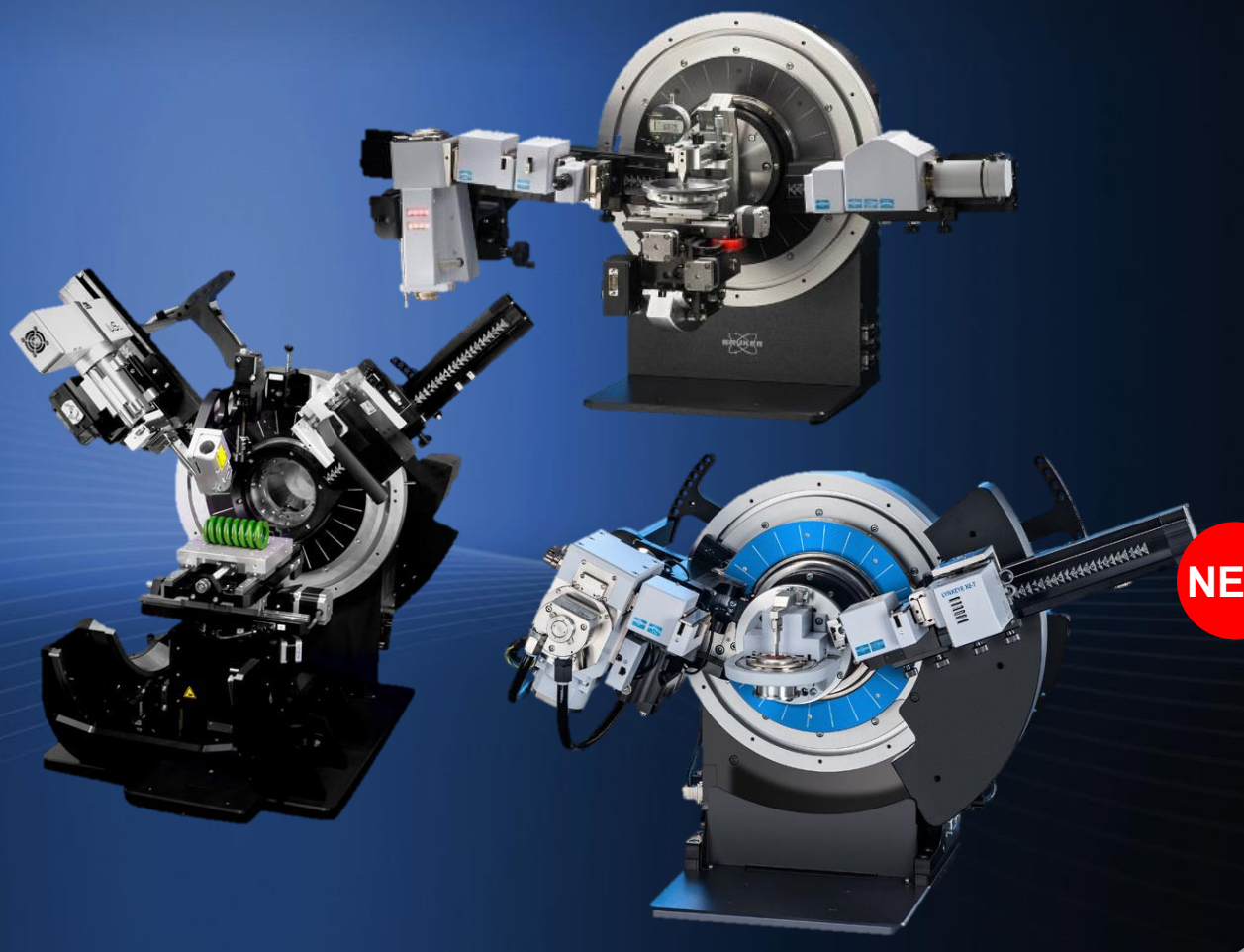
Quick-Change Artist

D8 DISCOVER

Premium Class XRD Solution

BRUKER X-Ray Diffraction Solutions

D8 DISCOVER Family



D8 DISCOVER

Ultimate Flexibility

D8 DISCOVER μ MR

Discover the world of
Microdiffraction

NEW

D8 DISCOVER Plus

Unrivalled Analytical Capability

D8 DISCOVER Plus

Unrivalled Premium Class XRD



Key Benefits

- Uncompromised Power of the **TXS-HE**
- Solid Foundation of **ATLAS**
- Solution Level **Integration**

D8 DISCOVER Plus

Uncompromised Power



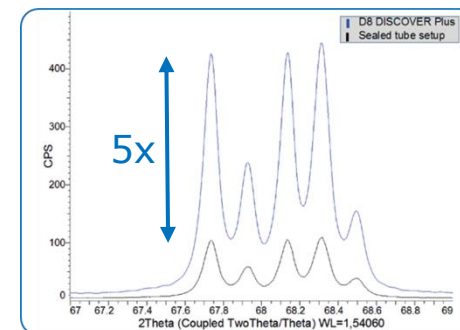
Compact for **maximum** yield

- 70% smaller design
- Large capture angle for optics
- Closer to the sample



Up to **5x** more intensity

- Improved Signal/Noise
- Better sensitivity in reasonable time



Optimized for **line** and **spot**

- 0.3 x 3mm filament
- Highest power density (6kW/mm²)



Minimal scheduled maintenance

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Solid Foundation of **ATLAS**



Vertical θ/θ configuration

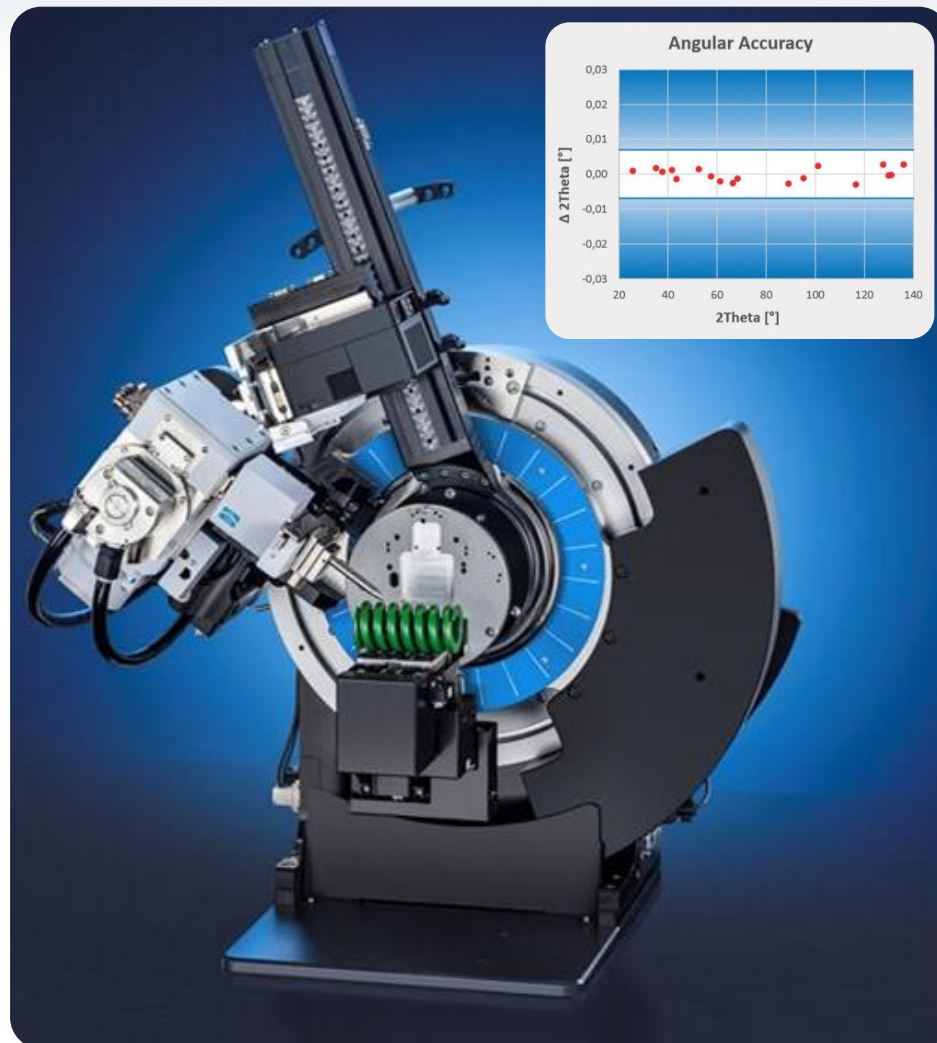
- Horizontal sample handling
- More options for sample stages

Based on proven **D8 goniometer**

- Long lifetime
- Maintenance-free

Enhanced to support **TXS-HE**

- Enhanced load capability
- Enhanced mechanical stability
- Enhanced Accuracy Guarantee
 - $\Delta 2\theta \leq \pm 0.007^\circ$



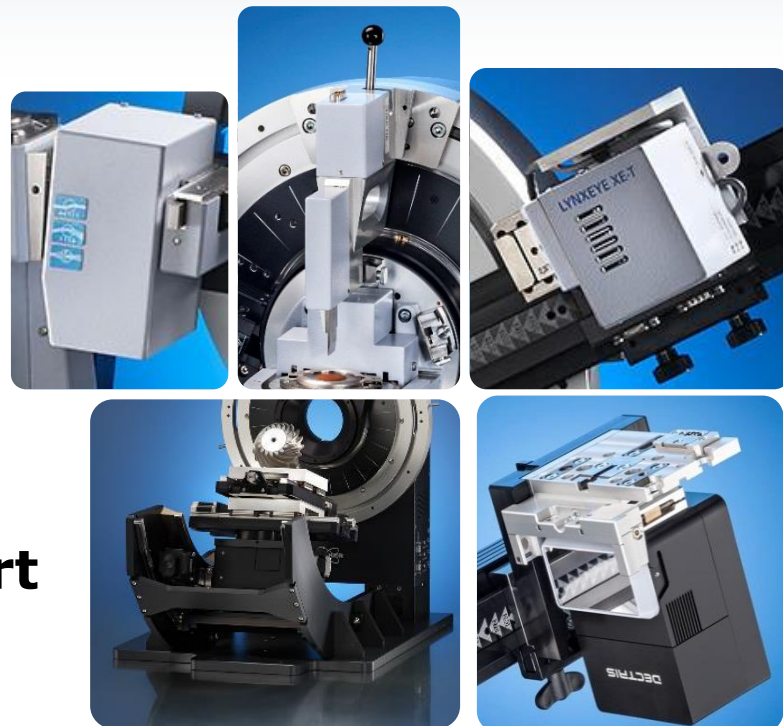
D8 DISCOVER Plus

Solution Level Integration



Optimized for D8 components

- Alignment-free Beam Conditioning
- Versatile Sample Handling
- Multimode Detectors

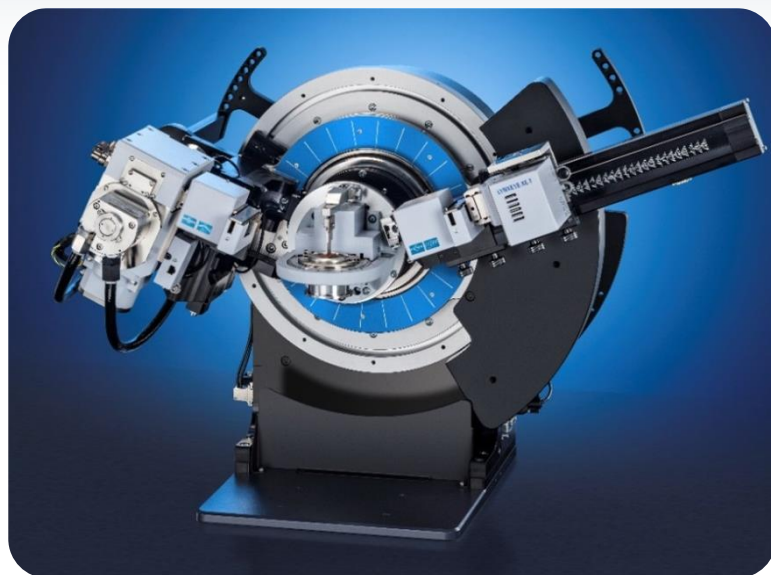


Comprehensive Software Support

- **DAVINCI** Component Recognition
 - Real-time Identification
 - Automatic Beam Compensation
- Plan.Measure.Analyze in **DIFFRAC.SUITE**

D8 DISCOVER Plus

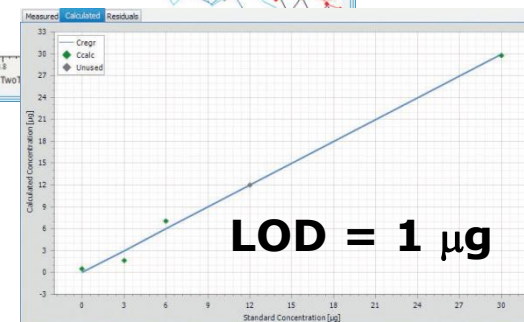
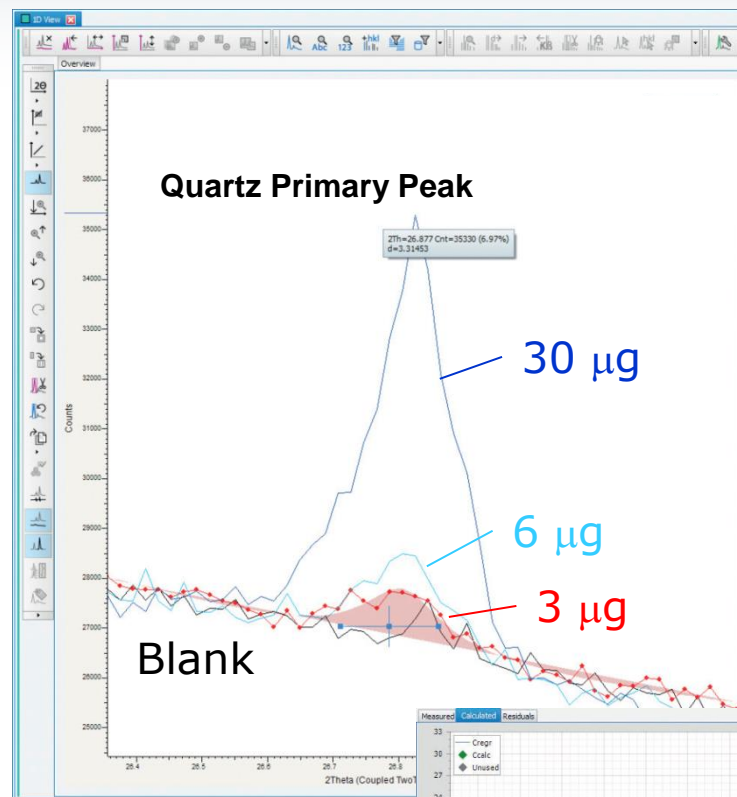
Low Limits of Detection



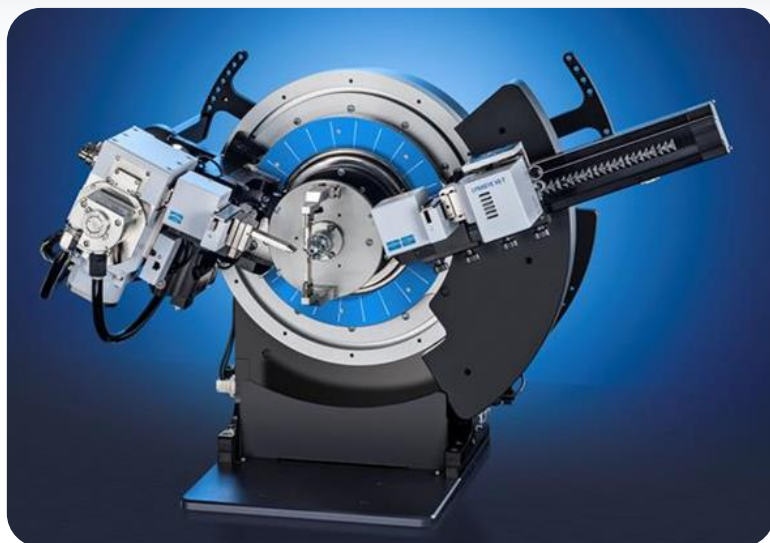
Bragg Brentano Powder Diffraction

- Respirable Quartz Standard
- TXS-HE (Cu) with LYNXEYE XE 1D detector
- 1 min scan time

**Extreme sensitivity in only
1 minute!**



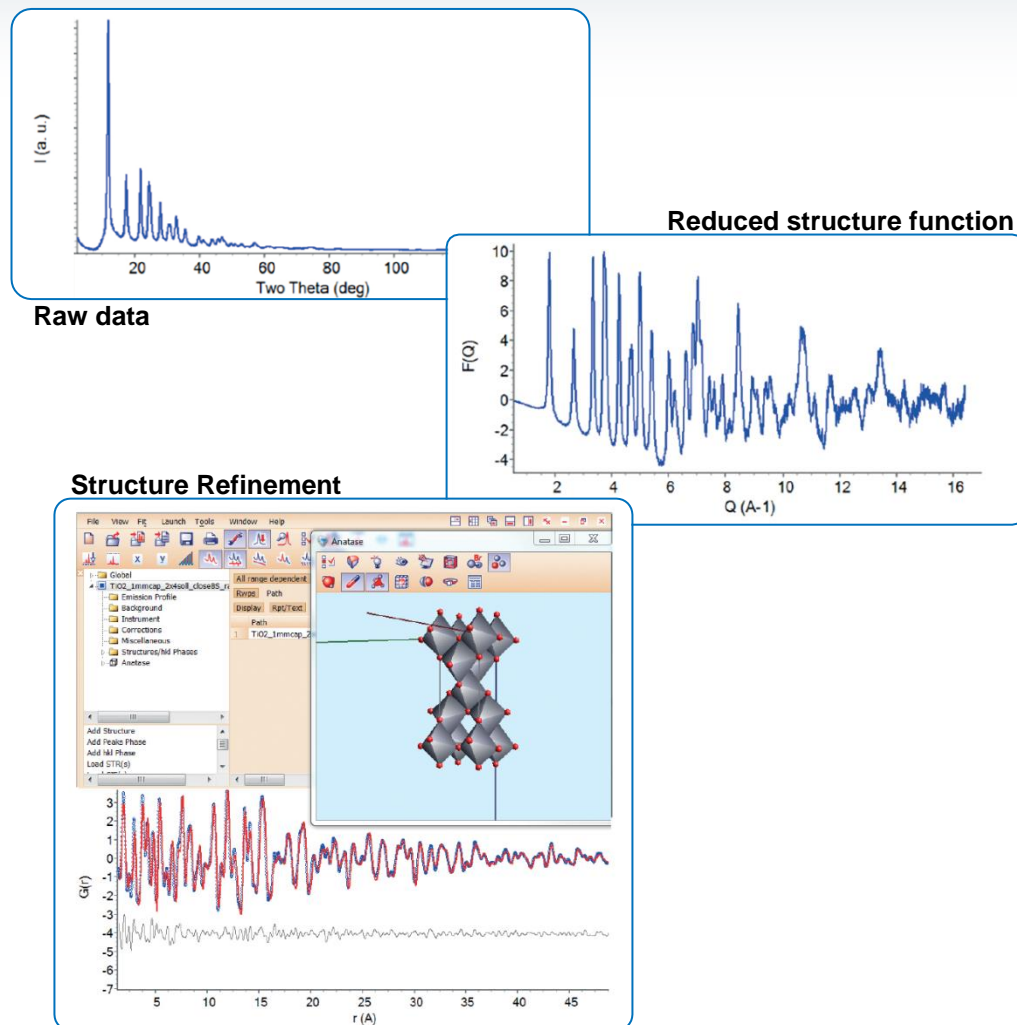
D8 DISCOVER Plus PDF Analysis



Transmission Powder Diffraction

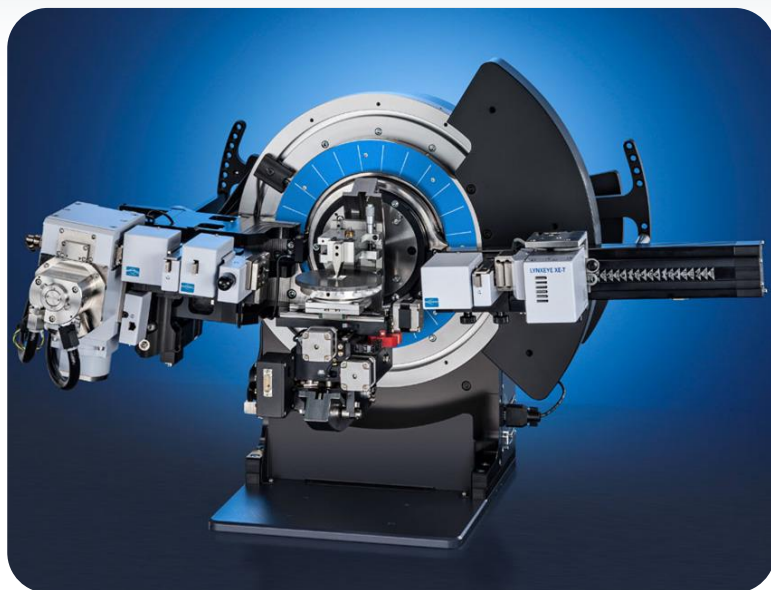
- TiO_2 Nanoparticles in Capillary
- TXS-HE (Mo) with Focusing Mirror
- 3.5 h scan time

**Fast PDF analysis with
hard radiation!**



D8 DISCOVER Plus

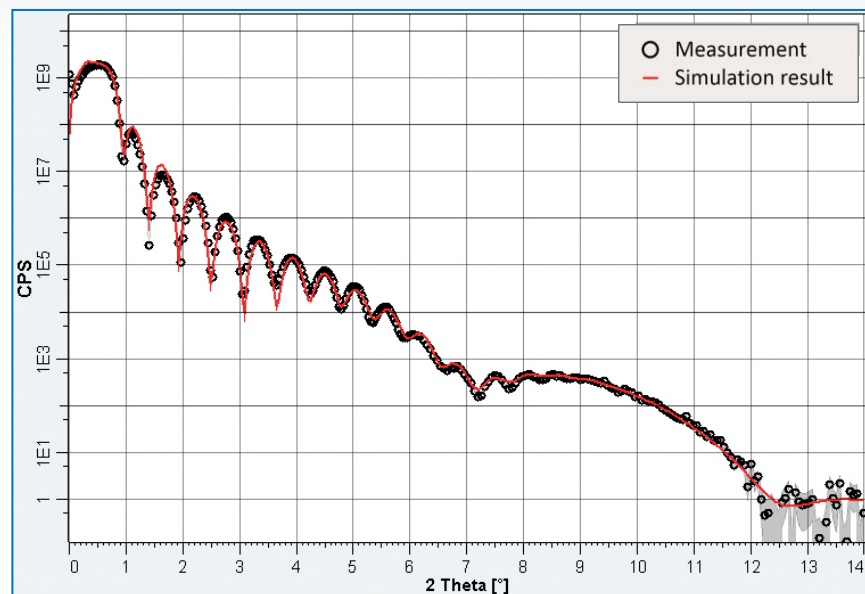
Film Thickness Determination



X-Ray Reflectometry

- 15 nm RuO₂ on Si
- TXS-HE (Cu) with Parallel Mirror
- 15 min / scan

Data spans 9 orders of magnitude!



Layer	Material	Thickness [nm]	Density [g/cm ³]	Roughness [nm]
Layer	RuO ₂	1,77	1,28	0,193
Layer	RuO ₂	14,85	6,97	0,288
Layer	SiO ₂	0,68	2,65	0,453
Substrate	Si	∞	2,32	1,078

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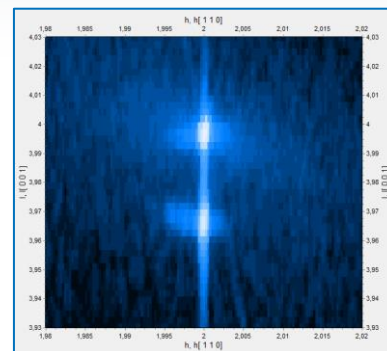
Epitaxial Thin Film Characterization



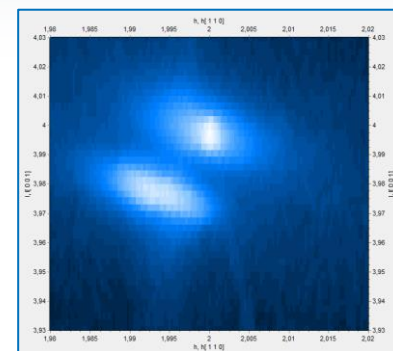
Rapid Reciprocal Space Mapping

- TXS-HE (Cu) with Parallel Mirror and 004 2B Mono
- Continuously Scanned 1D detector
- <25s per map

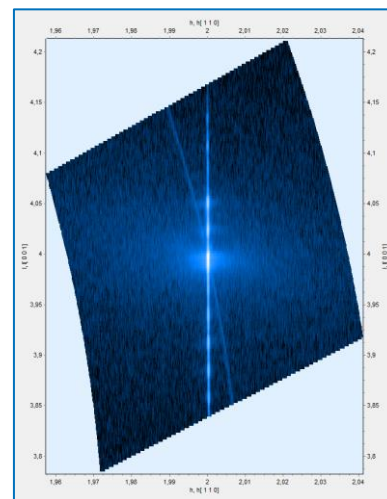
Fastest available RSM!



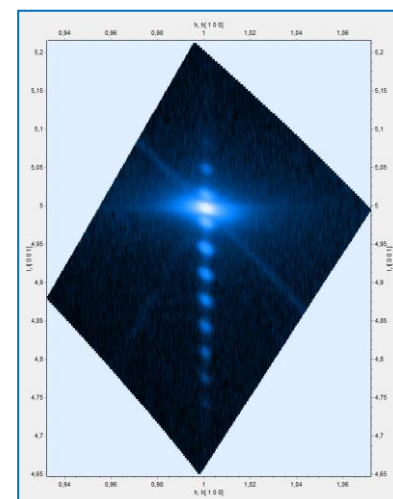
Strained InGaAs on GaAs



Relaxed InGaAs on GaAs



InP Superlattice



InGaN Superlattice

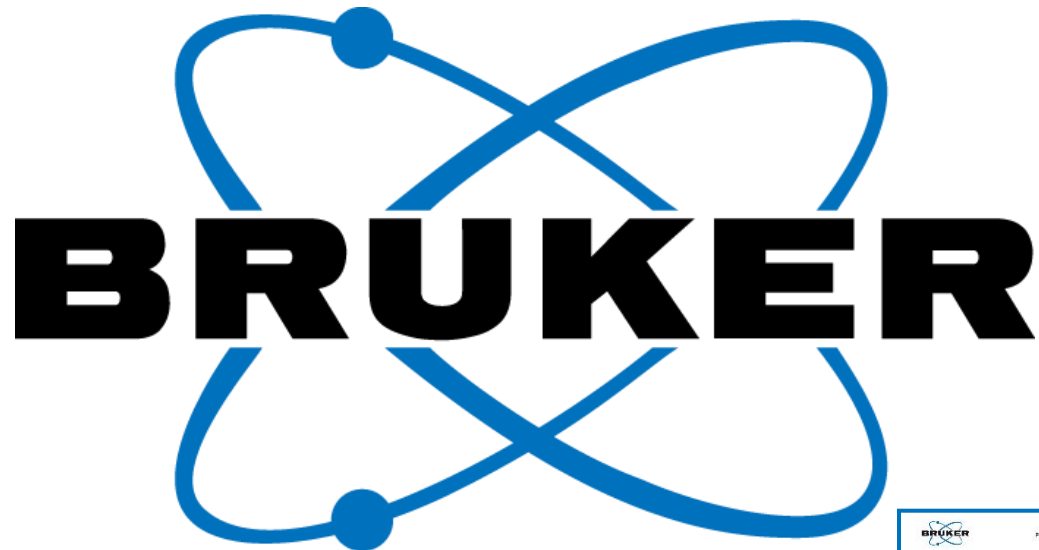
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Unrivalled Premium Class XRD



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 - Optimized for line and spot
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- Solid Foundation of **ATLAS**
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 - Based on proven D8 goniometer
 - Enhanced to support TXS-HE
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 - Optimized for D8 components
 - Comprehensive Software Support



Innovation with Integrity

