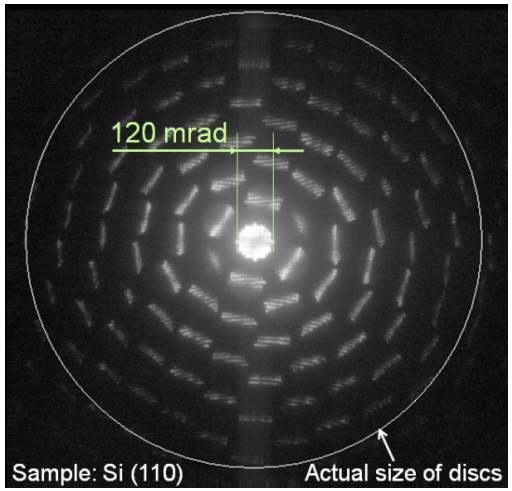
QED

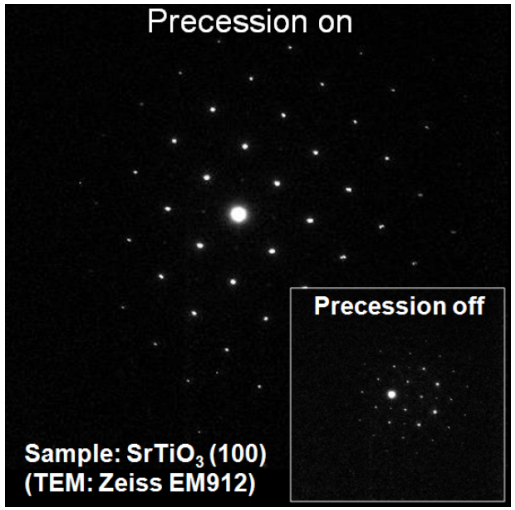
DigitalMicrograph Plug-in

Quantitative Electron Diffraction

Large Angle Rocking Beam Electron Diffraction (LARBED)
& Precession Electron Diffraction (PED)



LARBED pattern



PED pattern

QED controls the electron beam in your TEM to acquire LARBED [1] and/or PED [2] patterns.

QED accurately determines specimen thickness, absolute values of structure factors, and specimen surface orientation from LARBED data.

Key Features

- Automated calibration of illumination tilt/shift and diffraction shift coils.
- Very local diffraction information due to compensation of aberrations of the illumination system.
- Provides data for quantitative CBED and symmetry analysis even for very thin (e.g. < 10 nm) nano-sized samples [3].
- Provides tools for quantitative data extraction from LARBED, PED or conventional diffraction patterns.

References:

[1] C. T. Koch: Large Angle Rocking Beam Electron Diffraction; Ultramicroscopy, (2010) submitted, US Patent pending
[2] R. Vincent , P. A. Midgley: Double conical beam-rocking system for measurement of integrated electron diffraction intensities; Ultramicroscopy, 53 (1994) 271-282
[3] C. T. Koch: Many-Beam Solution to the Phase Problem in Crystallography, arXiv: 0810.3811v1 (2008).

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