

Focal and Tilt Series Reconstruction

Exit Wave Reconstruction and Cs-Compensation Software

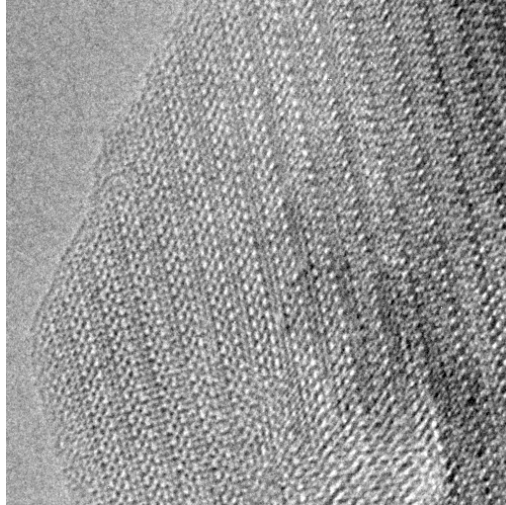
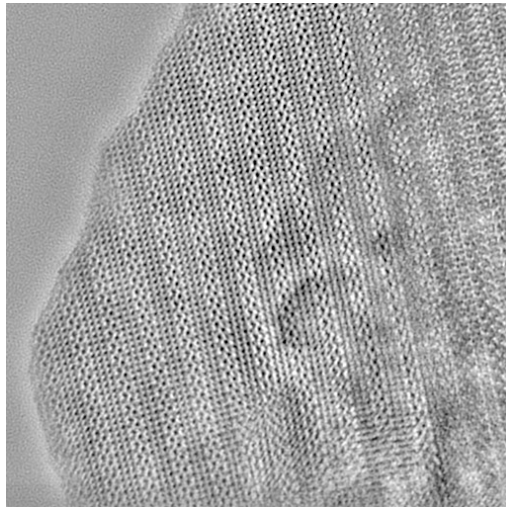


image at Scherzer focus



phase of reconstructed exit wave

FTSR works with a through focal series or tilt series of HREM images to reconstruct the wave function at the specimen exit surface.

FTSR uses a Wiener filter developed by Angus Kirkland et al. [1, 2].

Key Features

- ◆ Determines each defocus value as well as astigmatism from a small amorphous region or contamination layer.
- ◆ Compensates for spherical aberration as well as other aberrations.
- ◆ Extends resolution substantially, theoretically to twice the conventional axial limit, using a tilt series of HREM Images.

References:

- [1] R. R. Meyer, A. I. Kirkland and W. O. Saxton: A new method for the determination of the wave aberration function for high resolution TEM: 1. Measurement of the symmetric aberrations; *Ultramicroscopy*, 92 (2002) 89-109
- [2] R. R. Meyer, A. I. Kirkland and W. O. Saxton: A new method for the determination of the wave aberration function for high-resolution TEM.: 2. Measurement of the antisymmetric aberrations; *Ultramicroscopy*, 99 (2004) 115-123