



NCFL's FEI Titan 300 Features and Specifications

Basic Specification

- Electron Source: Schottky thermionic field emission
- Acceleration Voltage: 200kV (300kV from March 2011)
- Pole Pieces: Asymmetrical X-Twin (Super Twin from March 2011)

- TEM point resolution: 0.26nm
- TEM line resolution: 0.12nm
- STEM HAADF resolution: 0.17nm

- Obj. Lens Cs/Cc: 1.57/1.64mm
- Probe Cs/Cc: 1.63/1.9 mm

- Specimen Holders: FEI single tilt (LB)
FEI double tilt (softloc, LB)
Gatan LN₂ cooling (double tilt, LB)

Spectroscopy

- EDS: EDAX r-TEM SUTW motorized retractable Si(Li) detector
 - Collection angle 0.3 Sr
 - Energy resolution 134eV (Mn K α , 1000cps with the time constant 100 μ s)

- EELS: Gatan Model 863 Tridiem GIF (2k x 2k UltraScan 1000FT CCD)
 - Distortion <1.75%
 - Chromaticity <1.5 μ m/eV
 - Deviations from perfect isochromaticity <1.25 eV in magnitude over the entire image field

Imaging

- Gatan 794 Multi Scan CCD (2k x 2k, 14bit dynamic range)
- Gatan Orius SC200D for 300kV (2k x 2k, 30fps, retractable from March 2011)
- Fischione Instruments Model 3000 Annular Dark Field Detector

Special Modes:

- Electron Tomography (TEM&STEM) :
 - Acquisition: FEI Xplore 3D
 - Reconstruction: FEI Inspect 3D Express
 - Visualization: FEI Resolve RT
 - Specimen Holders: Fischione Instruments Model 2020 (Single-axis) and Model 2040 (Dual-Axis)

- Low-Dose Exposure Technique
- Lorentz Microscopy (Focal length 23mm)