Talos to Themis evaluation

Last updated: 02/21/21

The user will be evaluated in terms of 1) safe instrument operation and 2) technical proficiency.

Part 1: Specimen loading and unloading

Safe holder insertion/extraction into/out of the column

Safe loading/extraction of grid into/out of the holder

Plasma cleaner operation

Part 2: High-resolution (lattice) imaging from one of two test samples

a. Single crystal B = [110] Si
b. Au nanoparticles

Select appropriate FEG register

Set eucentric height

Center appropriate C2 aperture/beam conditions for HR-TEM

Correct Condenser astigmatism

Balance pivot points

Correct Rotation Center

Align to zone axis (if using single-crystal Si sample)

Center appropriate objective aperture

Safe operation of the Ceta camera for image collection

Correct objective astigmatism using the FFT

Properly focus and collect final high-resolution image

Part 3: Atomic-resolution HAADF-STEM imaging (directly following from Part 1)

Select appropriate FEG register

Correct coarse condenser astigmatism (using Ronchigram)

Correct rotation center (using Ronchigram)

Center appropriate C2 aperture (using Ronchigram)

Fine alignment to zone axis (if using single-crystal Si sample)

Proper detector contrast/brightness adjustment

Fine correction of condenser astigmatism using the HAADF-STEM image

Focus and collect final atomic-resolution HAADF-STEM image