UMF Equipment – Fischione Tomography Holder System

Dual-Axis Model 2040

The dual-axis tomography holder is for transmission electron microscopy imaging or analysis that requires in situ specimen rotation. Acquiring a dual-axis tilt series enhances the information contained in the tomogram. The dual-axis tomography holder features an optimal tilt angle range in narrow gap (~3 mm) pole-piece geometries, while maintaining microscope resolution. A fully jeweled mechanism provides ultra-precise, in-plane specimen rotation, while maintaining eucentricity. The FlexiClamp is a spring-type, annular ring which securely clamps the specimen into the specimen cup. It maximizes specimen visibility, even at high-tilt angles. A dedicated tool facilitates the use of the FlexiClamp. Initially, the specimen can be fully rotated through 360° to orient either the grid bars or a specimen feature to the alpha tilt axis. Once the specimen is properly oriented, the first tilt series is acquired. A two-position precision indexing mechanism provides 90° in-plane rotation. These features greatly facilitate the acquisition of a dual-axis tilt series.

Features:

- Fully jeweled mechanism for ultra-precise planar specimen rotation
- Optimized tilt in pole-piece gaps as small as 5 mm
- Ideal for room temperature electron tomography
- Maximizes tomographic data obtained from the specimen
- Maximum tilt range (up to ±70°)
- Extended field of view (up to 950 µm at 70°)

Please refer to https://www.fischione.com/products/holders/model-2040-dual-axis-tomography-holder for further details of the system. For inquiries, please contact Dr. Wei Lu (Tel: 34002077; Email: wei.lu@polyu.edu.hk).

Application:

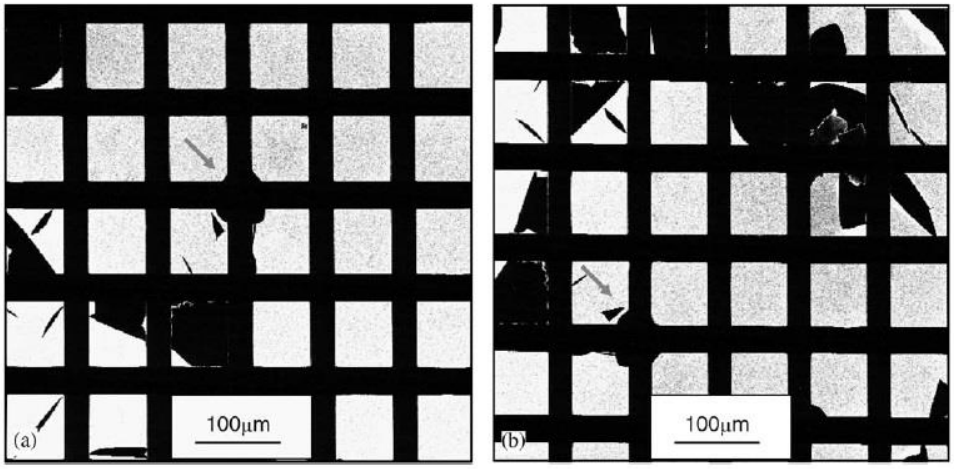

Fig. 5. Low-magnification STEM images that show the grid bars of the sample. The arrows indicate the center of the grid, and it can be seen that image (b) had been rotated 90° clockwise with respect to image (a) with an accuracy of less than 1°.

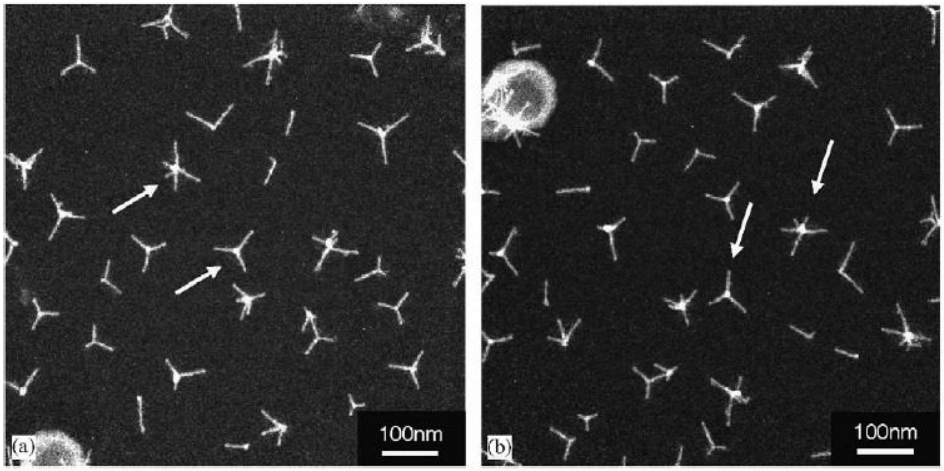

Fig. 6. Z-contrast images of CdTe tetrapods in two perpendicular orientations at 0° tilt. The arrows indicate the location of the same tetrapods in both images, and it can be seen that image (b) had been rotated 90° clockwise with respect to image (a).