

Cryo-TEM Training - FEI Tecnai T

Training for TECNAI T is given by MIC for basic operation of the microscope. Basic operation includes loading/unloading samples, user alignment, and acquisition of images. For training and instrument-related questions, please contact Dr. Hansoo Kim (luminesc@tamu.edu; Tel. 979-862-8452)

- For the operation of the advanced TEMs previous experience in electron microscopy is recommended but not required.
- Trainees with no previous experience in transmission electron microscope are required to fill out the TEM questionnaire provided by MIC and submit at the first training session.
- For further reference future users can use the text book for TEM 'Transmission Electron Microscopy' by D. B. Williams and C. B. Carter
- There is no fixed time for user training - The number of training sessions is determined by the proficiency of the trainee. Advanced modes of operation will require additional training

Training sessions for basic operation (required before going to the cryo-TEM mode)

(Each session lasts about 3 hours)

- 1st session – explanation of the main components of the TEM: field emission gun/column/screen/camera with apertures, panels, and software. Demonstration of basic operation of the microscope, alignment.
- 2nd session – Practice of loading/unloading, user alignment, image collection with aid from MIC staff.
- 3rd to final sessions - Practice of loading/unloading, user alignment, image collection with or without aid from staff. These sessions repeat until trainees get fully used to the operation.

CryoTEM training

For cryoTEM training trainees need to be first qualified for basic operation of the TEM (room temperature TECNAI T). Then, one or two sessions of cryoTEM demonstration and two more sessions of hands-on practice are essential. The training contains disconnection/connection of the cryoholder, mounting/dismounting a cryoTEM sample onto the cryoholder, loading/unloading the cryoholder into the TEM column, and imaging. After the essential training sessions trainees need to practice a few more sessions until they become accustomed to its operation.

K2 camera training

Users who want to use the K2 camera can take a short training for the basic operation of the camera. For the full operation and maintenance of the camera users are required to contact Dr. Junjie Zhang (email: junjiez@tamu.edu) in the department of biochemistry and biophysics.

Operation test

Once trainees feel comfortable with operation of the microscope without any aid from staff they can take the operation test. This is to check whether they are capable of safely operating the microscope all by themselves. Normally it takes about 1 hour.

Advanced operations training

STEM training

For STEM imaging of qualified users. Typically, one session of 2-3 hours is needed.

Refresher Training

When a qualified user does not use the microscope for about 6 months and needs to refresh his/her memory, refresh training can be given. After not using the microscope for 1 year, the user is required to take the refresher training.