

TEM2
Operation of Transmission Electron Microscope: Tecnai 12

1. On right hand side **Microscope** red light should be on; **VAC** light on
2. Switch on monitor, and log on.
3. Double click microscope icon; column valves closed (Status in red column valves)
4. Load grid into specimen rod and insert into microscope, select specimen holder (**single tilt**) on computer and click return arrow. (Otherwise the light will not go out), wait until the red light on Compustage goes out, turn rod in anti-clockwise direction and **carefully** insert rod into microscope. Do not allow the rod to slam into the microscope.
5. Push HT button [next to the VAC button – right hand side of microscope]
6. Click HT. button and Filament button (goes yellow)
7. Open column valves.
8. To set specimen height find a spot/object on section and lace in center of field of view. Under Search, go to the Stage control tab and click wobbler.
9. Using the Z-axis double button (right hand control panel); tap up or down until the spot is centered and has stopped rocking. Stop wobbler.
10. To centre aperture, find a spot focus beam, Press diffraction, in low magnification and adjust so that the two spots stay in the circle.
11. Microscope is now ready to use.
12. To remove grid – close column valves by clicking on box (box goes yellow). Withdraw rod and turn clockwise as far as it will go and carefully pull out. The red light on the Compustage will light-up for a couple of seconds.

13. Switch on SIS camera box, Click icon for Analysis and tap the green button on the small box (this brings the CCD into the microscope column and will hide the image on the viewing screen)
14. Camera 1 for live image
15. Camera 2 for focusing
16. Camera 3 click and this captures image. To put scale bar on, go to image and drag down to add scale bar.
17. To save image go to File\save as, find your name and label image
18. Highlight the next number and repeat the procedure until you have finished capturing Images.
19. **Dell Computer.** Adobe Photoshop
20. Image adjust-auto level to get from a black image when 16 bit.
21. Database set up function.

Plate camera.

Click on CAMERA tab.

Open user tab [click right hand arrow]

Check under 'settings' – film type – Kodak 4489; emulsion setting – 4.0; data setting 2.8 [change if necessary]

Under 'options' you can set a user code –enter AND press return arrow [on left of box]

In the main plate camera window you can enter 'film text' – allows for specimen/experiment information to be recorded on the negative – enter information AND press return arrow [to left of box]

After reloading plate camera

Click on CAMERA tab.

Open user tab [right hand arrow]

Under 'stock' – choose 'default' (56 plates) or 'user' (however many plates you have put in – you can enter this number in the box) and click on 'Reset' button