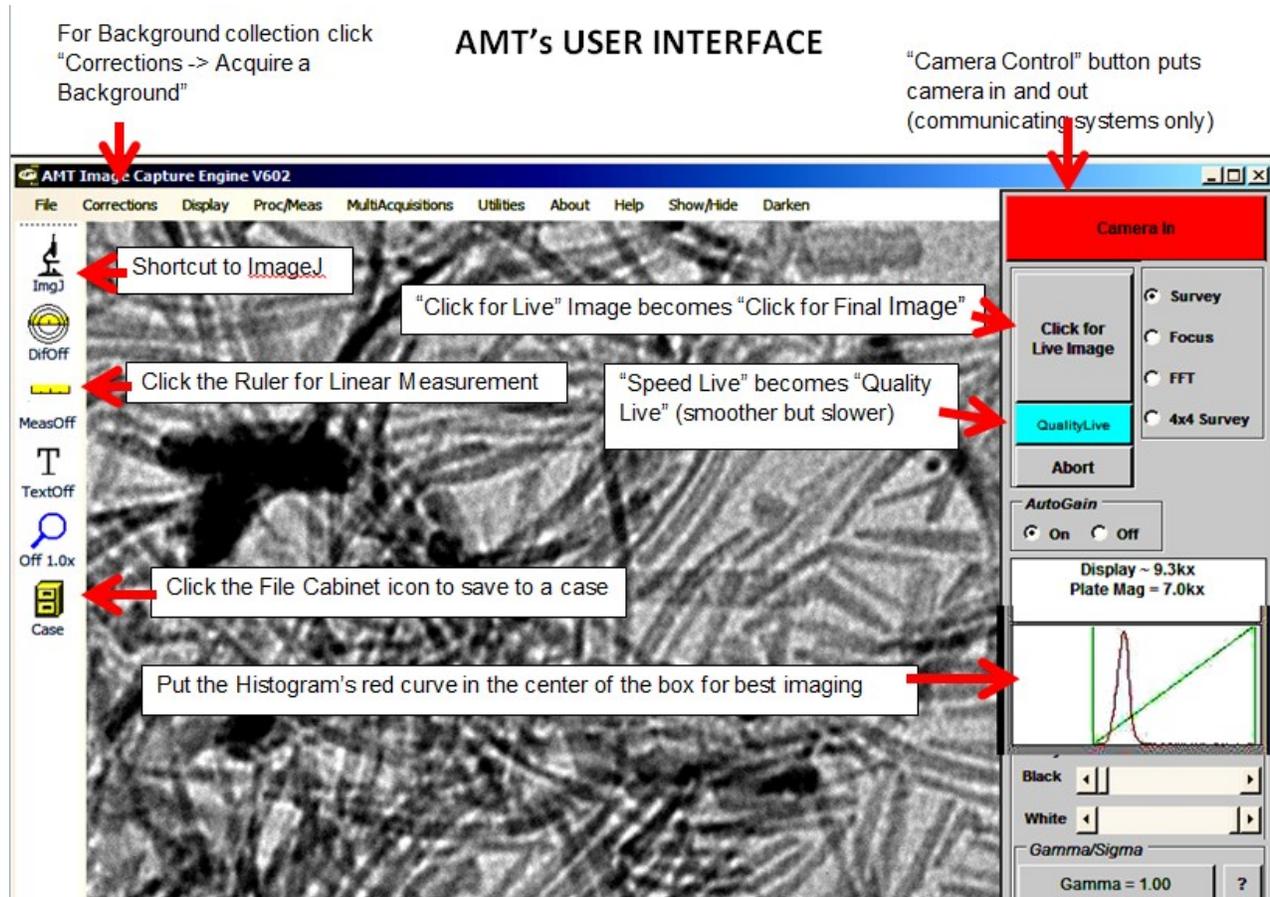


Everyday Procedures

This section can be printed as a short, summary manual for visiting users.

1. **Camera Out for TEM setup.** For sidemounts, make sure the mirror is in the retracted position. For bottom/mid mounts, make sure the TEM viewing screen is down. Going to crossover at low mag, or using a diffraction beam for alignment could burn your camera phosphor if the camera is in.
2. **TEM Setup.** Find the beam, align the TEM and center the beam. Insert your sample and find a region of interest. Get your sample roughly into focus using the TEM viewing screen or the binoculars. Final focus will be done using the camera.
3. **Spread Beam.** Turn the condenser knob clockwise (from crossover), spreading the beam past the edges of the TEM viewing screen, until it appears somewhat dark.
4. **Camera on.** The power supply to the camera needs to be turned on, and the AMT computer booted up. Your lab manager may have already done this.
5. **Open AMT.** The AMT icon is in the start button menu and probably also on the desktop. Give the program a few seconds to open completely.
6. **Click for Live Image.** On the right side of the AMT interface, click the button "*Click For Live Image*". This will start live imaging and if your system has auto-in it will also insert the camera. Otherwise you will see a dark live image until the next step.
7. **Camera In.** For sidemounts, flip the pneumatic switch on the bottom of the retractor to insert the mirror assembly. For bottom mounts use the button that raises the TEM viewing screen.
8. **Center the Histogram.** Once Live and inserted, check the light meter. That is the histogram on the right side of your display. If the red curve is in the left of the box the image the beam intensity is too low. If it is on the right intensity is too high. Use the TEM condenser knob to move the red curve near the center of the box. If the brightness goes 'off scale', take the camera out to readjust.
9. **Changing Mag.** Lower Magnification Gently! Reducing the magnification in large steps can create a small, intense beam that can damage the phosphor. It is best to lower magnification one step at a time. Observe the Live Image and keep the beam spread using the condenser lens (TEM brightness control). If the TEM has Intensity Zoom, use it.
10. **Acquire a Background.** Everyday someone in the lab should refresh the background correction. For this either pull the sample rod out to the park position, or find a large hole in the sample, so the beam has no obstruction (not even Formvar). This should be at the KV you will be working at, somewhere near the anticipated mag and with whichever apertures you will be using for imaging. Cover the TEM viewing window to block ambient light. Click the "*Corrections*" item on the upper menu and choose "*Acquire a Background*". The Background Control window will open, giving you the choice to "*Proceed*" or "*Cancel*". If you haven't already done it, center the Histogram. Place the histogram's red curve in the center of the box using the Condenser 2 (brightness) knob. Then click "*Proceed*" and wait while backgrounds are collected for all four imaging modes. Then you can put your sample back in and go Live.
11. **Scan and Focus.** Using "Live Imaging", navigate to your best region of interest, adjust the TEM mag and focus. "Focus" mode, the second radio button next to "Click for Live Image", is a tool to aid focussing. It zooms in and enhances the resolution. Navigating black or white features out of the field of view will improve contrast. For other ways to improve contrast see the topic "[Grayscale Manipulation](#)".



12. **Final Image.** When you have the image set up, hit "Click for Final Image" to collect it. It takes a few seconds to integrate.
13. **Save the Image.** After collecting a final image save it to your disk or network. If you are saving to a case which is already created, click the File Cabinet icon at the bottom of the left toolbar. In the "Camera Information" window make sure the mag and voltage are correct and click "Save With Caption". To create a new case click, on the upper menu, "File -> Case Study". If not saving to a case, but directly to a folder, click, on the upper menu, "File - Save As". Then navigate to your folder and type in a file name.
14. **Measurement.** For linear measurement have a final image displayed. Click the Ruler icon on the left toolbar to open the measurement window. Make sure the mag and voltage are correct and then click once on each side of a feature (do not drag). A list of your measurements appears in the measurement window.
15. **Camera Out.** When you are done imaging take the camera out for safety (for sidemount retract mirror, for bottom or mid mount lower TEM screen). Close the AMT software by clicking the upper right "X" or "File -> Exit".