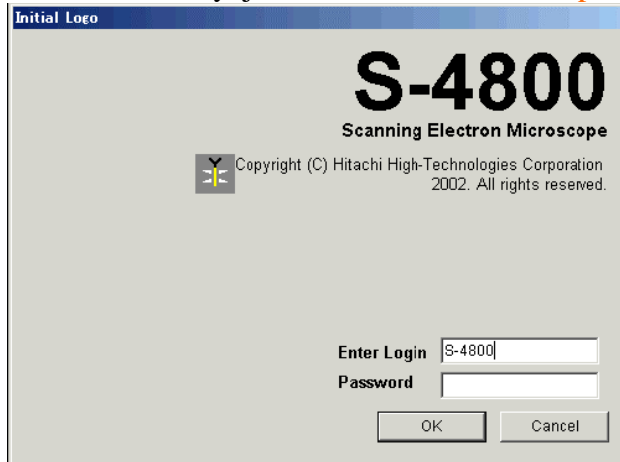


Loading Procedure for Hitachi 4800

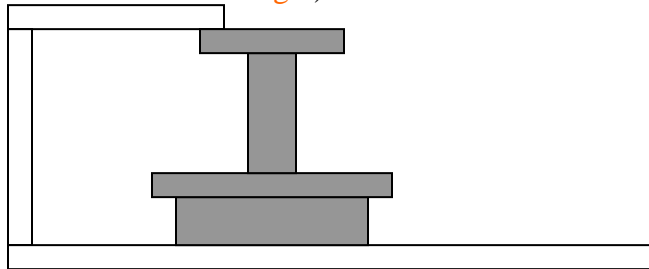
- 1) login the computer with your active directory passwd, SEM program will start automatically, just leave the **blank** when prompt for S4800 password



- 2) Turn on IR lamp and camera

Sample loading

- 1) Mount your sample to sample holder and check height (**make sure it is lower than the standard height**)



- 2) Check the computer monitor to make sure the stage is at **EXC (exchange position)**, use **mouse to select EXC** to move the stage to exchange position, and make a note in the log sheet.

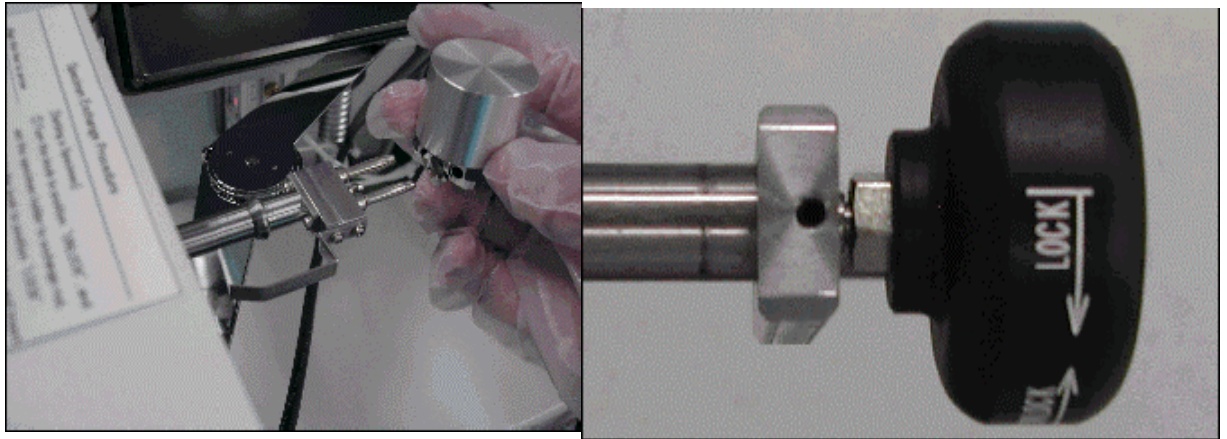


- 3) Press **AIR** button to **vent the load-lock**



- 4) After AIR button stop flashing (indicating vent complete), open the load-lock door (**Do Not use the loading stick** to open the door to avoid bending)

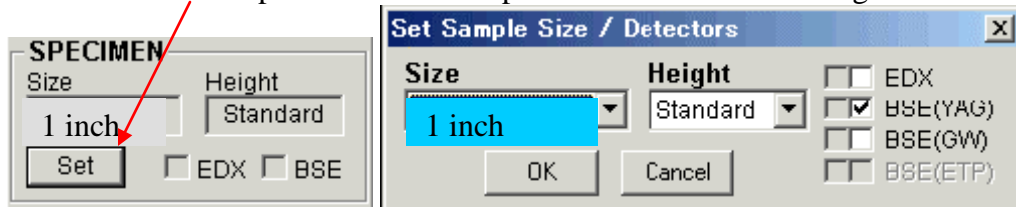
- 5) Push the loading stick out a little bit and mount your sample holder to the loading stick. (**Do Not touch the loading stick** to avoid removing the grease on it)



- 6) **Pull back the loading stick all the way out** to avoid it get suck in when start pumping later.
- 7) Close the load-lock door (**Do Not use the loading stick** to close the door to avoid bending)
- 8) Press **EVAC** to **pump the load-lock**
- 9) After EVAC button stop flashing (indicating loadlock pressure is low enough), press **OPEN** to **open the gate valve**
- 10) After OPEN (**take a few second, be patient**) button stop flashing (indicating gate valve is fully open) push the loading stick in. After the **sample holder engaged to the stage**, unlock the loading stick and pull back the loading stick **all the way out**.
- 11) Press **CLOSE** to **close the gate valve** while **keeping another hand to hold the loading stick** to avoid it from sucking in.

Sample imaging

1. Click "Set" to input the correct sample holder diameter and height to the software



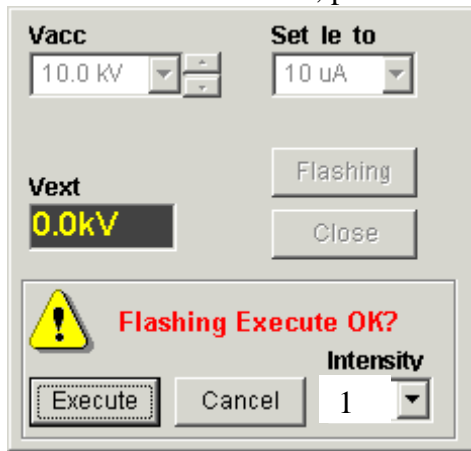
2. click "HOME" position to move the sample to the center



- Click HV dialog window to select V_{acc} and I_e (for conductive substrate, typically use 15keV, for insulating substrate or resist, typically use 5keV)



- When asked to flash, please use intensity 1, HV must be off to flash the tip.


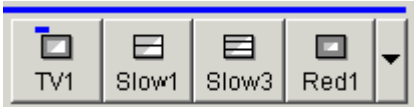


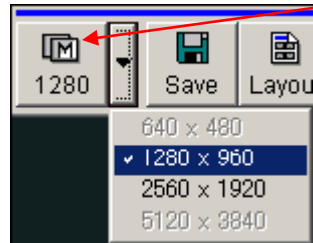
- Turn on the HV by clicking “ON”
- Click “H/L” to go to LM (low magnification) to find the area you need to look at



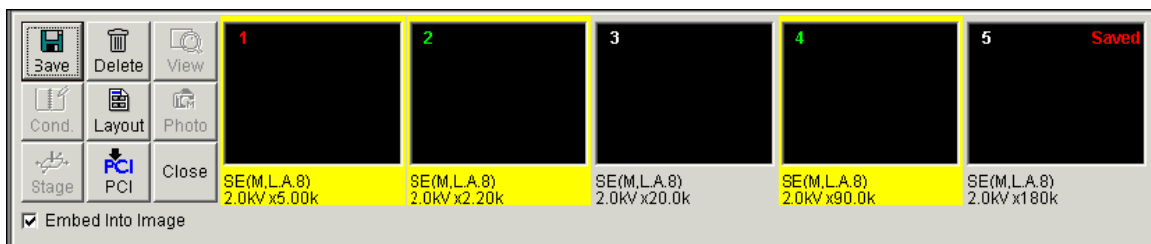
- Go back to High Mag after locating the area you need to look at
- Adjust “focus”, “astigmatism”, “brightness/contrast”, “Mag”



9.  can be used for automatic brightness contrast control.
10.  choose “Slow3” icon for slow scan image capture
11. Select the resolution “1280x960” is recommended, click on the icon to start image capture.

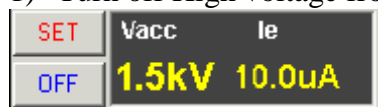


12. PCI software can be use for image analysis.



Sample unloading

- 1) Turn off High voltage from the computer



- 2) Move the stage back to **EXC** (exchange position) by using mouse to select **EXC**
- 3) press **OPEN** to **open blue valve**
- 4) After **OPEN** button stop flashing (indicating gate valve is fully open) push the loading stick in. After the **sample holder engaged to the loading stick**, lock the loading stick to sample holder and pull back the loading stick **all the way out**.
- 5) Press **CLOSE** to **close the gate valve**.
- 6) After **CLOSE** button stop flashing (indicating gate valve is fully close), press **AIR** button to **vent the load-lock**.
- 7) After **AIR** button stop flashing (indicating vent complete), open the load-lock door (**Do Not use the loading stick** to open the door to avoid bending)
- 8) Remove the sample holder from the loading stick

- 9) Close the load-lock door (**Do Not use the loading stick** to close the door to avoid bending)
- 10) Press **EVAC** to **pump the load-lock**

Access SEM image over network

1. Right click “My computer”
2. Select “Map Network Drive”
3. Choose any unused Drive letter
4. Enter [\\mntl-s4800.mntl.illinois.edu\image](http://mntl-s4800.mntl.illinois.edu/image) for folder
5. when enter your login name, you may need to put uofi\ before your netid
6. uncheck Reconnect at logon
7. Click “Finish”