

NCEM JEOL 200CX TEM driver license Checklist

User:

Approver:

Date:

1. Sign-on in log-book

Name, proposal number and affiliation	
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2. Safety

Understand emergency shut down procedure	
Know emergency contact numbers	
Know where liquid N ₂ protective equipment is	
Find updated operating instruction and notice (?)	

3. Prepare the TEM for your session

Check the vacuum gauge in 10^{-7} range and camera light green	
Check HT button on at 160kV and beam current is about 80 μ A	
Check specimen holder at position #1	
Check C2 aperture at #2, other apertures out and magnification at 5kX	
Set HT to 200kV. if lower kV needed, know how to lower down HT	

4. Fill up LN₂ in ACD

Check glass window covered	
Wear protective gear (goggles, mask, gloves), refill every 2 hrs	

5. Load specimen in holder

Know single tilt holders and double tilt holder	
Place holders properly on provided stand	
Load sample and tighten retaining screw gently	
Check sample snugness by gently tapping the big end the holder	

6. Insert holder

Check the sample stage locked	
Insert sample to pump down position	
Wait until red light goes off	
Rotate slowly and insert holder into column properly	
Check column vacuum under 10^{-6} range	

7. Start filament

Check column vacuum below 10^{-7} range	
Follow filament warm-up procedure (half division per 30 seconds after division 3)	

8. Carry out alignments

Find beam	
Eucentric height	
Gun tilt, gun shift and condenser stigmation	
Pivot points	
Current centering	
Objective stigmation	

9. Basic TEM operation

Bright field imaging	
Dark filed imaging	
SA diffraction	

10. Taking pictures on plates

Set exposure time and check film sensitivity	
Advance plate and take picture	
Demonstrate darkroom skills and proper reloading of plates and cassettes	

11. Shut down

Turn off filament slowly	
Set HT at 160kV and magnification at 5kX	
Set back sample position to 1 and tilt to 0, and lock specimen holder	
Remove holder properly, unload sample and put in protective housing	
Vent camera chamber, unload film/reload new canisters and reset number of unexposed plates (* Know do not reload not-fully-dried films to TEM chamber)	
Close nitrogen valve in next room	
Cover the window	

12. Sign-off in log-book

Record number of plates taken and any problems	
Check camera green light back on before leaving	