

NCEM PHILIPS CM200 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 V7 closed and SSC on and in cooling	
Check HT on at 200kV. If off, select 200kV and press HT on	
Turn on power to TV camera, TV monitor, GIF power supply, both computers, computer switch to B position	

4. Fill up LN₂ in ACD

Check glass window is covered	
Wear protective gear (goggles, mask, gloves)	

5. Load specimen in holder

Know type of holders	
Place holders properly on provided stand	
Load sample and tighten retaining screw gently	
Check sample snugness by gently tapping the big end the holder	
Check the pin protruding	

6. Insert holder

Check IGP is below 22	
Insert sample to pump down position	
Choose proper holder in CRT screen and connect cable	
Wait until red light goes off	
Rotate and insert holder into column properly	

7. Start filament

Wait until IGP is 22 below	
Follow filament warm-up procedure (Preset Extraction, and then turn 3 clicks every 30 seconds)	
Check IGP<22, then slowly open V7	

8. Carry out basic alignments

Find beam	
Set choose appropriate gun lens slowly	
Set and align appropriate C2 aperture	
Eucentric height	
Gun tilt, gun shift and condenser stigmation	
Align GIF	
Pivot points	
Rotation center	
Rough objective stigmation	

9. TEM operation for HREM, Nanoprobe EDS, EELS and energy filtered images

HREM alignment	
EDS spectra and profiles (requires separate training and qualification)	
EELS spectra and energy filtered images (requires separate training and qualification)	

10. Recording images

Acquire images on slow scan CCD camera	
Acquire images on plates	
Demonstrate darkroom skills and proper reloading of plates and cassettes	Not required

11. Shut down

Know additional shut down procedures for the last user of the day	
Return to HREM mode and select largest C1 aperture, <i>if needed</i>	
Close V7	
Remove EDS detector, <i>if needed</i>	
Reset holder	
Remove holder properly, unload sample and put in protective housing	
Cover window	
<i>Additional procedure for the last user:</i>	
Go to standby mode	
Turn off GIF power supply, CCD camera control and CRT monitor	
Computer switch back to B	

11. Sign-off in log-book

Record number of plates taken and any problems	
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