INDIAN INSTITUTE OF TECHNOLOGY KANPUR
DEPARTMENT OF CHEMICAL ENGINEERING
PG Research lab
STANDARD OPERATING PROCEDURE
FE-SEM

1. Startup Procedure (from STANDBY condition)

1.1 Open Nitrogen Cylinder valve, ensure the regulator output pressure is > 5 kg/cm^2

1.2 Press STANDBY button *to reinitiate*

1.3 Press PUMP *to vacuum the chamber*

1.4 Wait till

Column Pressure comes below 2.0 E-03 Pa

Chamber pressure comes below 2.0 E-03 Pa

The pressure indication bars become 'green'

1.5 Press VENT to vent the chamber. (Chamber for sample insertion opens only after completion of venting process i.e. chamber pressure comes to atmospheric)

NOTE: Make the sample ready before venting the chamber so that the chamber remains open for least period of time.

1.6 After fixing sample properly (hand tight the screws) close the chamber and press PUMP button holding the chamber door inward.

1.7 Release the chamber door as pressure reaches < 1.0 E +04

1.8 Wait for pressure reaches desirable level as stated in 1.4

1.9 Wait 5 mins

1.10 Press BEAM ON

1.11 Now the instrument is ready for sample measurement

2. **Standby procedure**

2.1 Save all images taken for measurement

2.2 Set HV to 1.00 KV

2.3 Set Beam intensity to 10.00

2.4 Set Speed to 2-3 level

2.5 Set Magnification to 1.00 kx

2.6 After stabilization to HV= 1.00 KV press BEAM ON button *to off the beam*

2.7 Press STANDBY *to standby the system*

2.8 Close Nitrogen Cylinder Valve

Emission Parameter Adjustment

1. Log off
2. Log in as ‘service’
3. Password – ivaiva
4. From menu > SEM > FEG HV Control
5. Set Limits

6. Set Maximum Emission
7. Press Enter

During restart from shut off

1. After Gun Pressure – Green
2. Service login
3. From Menu > SEM > FEG HV Control Panel
4. Power On

Other Troubleshooting

If beam becomes off immediately and GUN Pressure is RED check cylinder pressure

Any error shown in health status,
> Help > Send Log file > File – save and send to dkpanda@advscientific.com