

## Field Emission Electron Scanning Microscopy (FESEM) facility



### Instrument Details

**Model :** JEOL JSM 7610f

**Electron Gun** : Schottky type field emission (T-FE) gun (Zr/o tungsten emitter)

**Electron Beam resolution** (secondary electron image)

1.0 nm at accelerating voltage 15 kV

1.5 nm at accelerating voltage 1kV in GB mode

2.5 nm at accelerating voltage 1kV in SEM mode

### Magnification

LM (low magnification) mode : x25 to x19000

High magnification mode : x130 to x1000000

**Specimen stage** : Fully eucentric goniometer stage

X-axis : 70 mm , Y-axis: 50 mm, Z-axis : 1.0 to 40 mm, Tilt: -5 to + 70, Rotation : 360

### Image Modes

Secondary electron image (SEI)

### Accelerating voltage

SEM mode : 0.5 to 30 kV

GB mode : 0.1 to 3.9 kV

**Probe-current** : Order of  $10^{-13}$  to  $2 \times 10^{-7}$

### Detectors Available:

**EDS detector** : EDAX make LN2 free, peltier cooled, Octane plus model, ( $30\text{mm}^2$  and 127 eV resolution) with TEAM software support for live spectral, lines scan and mapping data collection facilities.

## Sample Preparation / coating facilities

		
<b>Sputter Coater : JEOL JEC 3000FC auto fine coater</b>	<b>Carbon Coater : JEOL EC-32010CC</b>	<b>Critical Point Drying (CPD): Bal-Tec 030</b>

### Instructions / Sample preparation guidelines:

1. The size of sample should be less than 12.0 mm x 12.0 mm x 10 mm (height). and side opposite should be flat (to enable sample mounting). The small sample height is better.
2. The samples should be dry and should withstand high vacuum ( $10^{-5}$  pa).
3. The surface of the samples should be clean and contamination free for the better results.
4. Biological samples will be accepted only after primary fixation and dehydration.

### FESEM user charges:

S.No	Facilities	Research scholar of University /Intuitions / R & D labs		Remark
		*Unpaid Research scholar/PG student	Institutions / Paid Research Scholar /sponsored project /MedicalUniversities	
1	Sample processing and mounting	Rs. 250/-	Rs. 250/-	per stub
2	Stub (Au/Pd/C/Pt) coating	Rs. 150	Rs. 300/-	per stub
3	FESEM- Imaging	Rs. 100/-	Rs. 300/-	per exposure
3	EDAX spectra	Rs. 1000/-	Rs.1000/-	per spectrum
4	CPD drying	Rs. 500/-	Rs. 500/-	per sample

### Note :

+18% GST will be charged extra as per Government of India Norms from time to time.

\*Rates of unpaid research scholar will be applicable subject to production of certificate from the Head of the Department of the user.

**Kindly Sent your request to The Director, BSIP or Convener FESEM through letter pad of your organization or guide for FESEM utilization. Request may send through email or by post.**

**Email : [director@basip.res.in](mailto:director@basip.res.in), [srikanta\\_murthy@bsip.res.in](mailto:srikanta_murthy@bsip.res.in),**

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