

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

Sophisticated Analytical Instrument Facility (SAIF)

Focused Ion Beam - Scanning Electron Microscope (FIB-SEM)

NOTE:

PART A : To be filled if user requires FIB Milling, patterning / TEM sample preparation / 3D Slice & View

PART B : To be filled if user requires SEM imaging & EDS Analysis

PART A

Request Form for **FIB Analysis** for internal IITB users

(Details required for FIB Milling, patterning / TEM sample preparation / 3D Slice & View)

Applicant Details:

User Name:

Email ID: Mobile No.:

Name of Guide/PI:

Guide/PI Email ID: Guide/PI Mobile No.:

Sample information :

Number of samples	
Sample code	
Sample Composition & Sample dimensions (The sample size should be less than 10 mm x 10 mm x 4mm and base of the sample should be flat for mounting on sample holder) ** Sample Height/ Thickness should not exceed 4mm)	
Analysis Required (Tick the relevant analysis required)	FIB Milling / TEM sample preparation / 3D Slice & View If FIB Milling / 3D Slice & View is ticked then, What feature

	<p>size (estimated) are you looking to mill / image?</p> <p>_____</p> <p>_____</p> <p>If TEM sample preparation is ticked then, What are the dimensions required for TEM lamella?</p> <p>_____</p> <p>_____</p> <p>Any additional information _____</p> <p>_____</p>
<p>Sample type (you can select multiple options)</p>	<p>Powder (Not for Milling) / Solid / Solid but porous / Magnetic (Highly magnetic samples not possible) / Thin film / Other (Please specify)</p> <p>_____</p> <p>_____</p>
<p>Detailed description of the sample. (Briefly describe the method used to prepare or fabricate your sample before bring it for FIB related preparation)</p>	
<p>Nature of the sample</p>	<p>Non-Conducting / Conducting / Semi-Conductor</p> <hr/> <p>Magnetic /Non Magnetic</p> <hr/> <p>Is it electron beam sensitive? Yes/No → (Explain if Yes)</p> <p>_____</p> <hr/> <p>Is it volatile? Yes/No →</p> <hr/> <p>Is it flammable? Yes/No →</p> <hr/> <p>Is the material loosely bound under vacuum condition? (Yes/No) (Explain if Yes) _____</p> <p>If YES</p> <ol style="list-style-type: none"> Has sticky tape test been done by the user in case of solid / thin film on substrate? (Yes/No) (Explain if No) <p>_____</p> <ol style="list-style-type: none"> Has compressed gas blow test been done by the user in case powder on carbon tape? (Yes/No) (Explain if No) <p>_____</p>

<p>Please explain your reason behind preferring FIB (Milling / Cross section imaging / TEM lamella preparation) over other characterisation tools for sample preparation (Maximum 50 words)</p>	
<p>Have you prepared lamella using FIB earlier? If Yes, please provide details of preparation method and sample dimensions <i>If No, then</i> in case of TEM Lamella preparation, Request user to attach a ppt (please prepare a PPT describing your sample detail. Make a diagram describing the details requires for lamella preparation.)</p>	
<p>Is site specific sample preparation mandatory? If so, mention the specific area in the sample. (Publication related to this work would help):</p>	
<p>Note:</p> <ul style="list-style-type: none"> • Please share results that may be helpful for sample preparation and analysis • Samples for FIB related preparations should be well-polished / Uniform • The sample size should be less than 10 mm x 10 mm x 4 mm (height) in case of bulk samples and base of the sample should be flat for mounting on sample holder 	

PART B

Request Form for **SEM-EDS Analysis** for internal IITB users (Details required for SEM & EDS Analysis)

Applicant Details :

User Name:

Email ID: Mobile No.:

Name of Guide/PI:

Guide/PI Email ID: Guide/PI Mobile No.:

Sample information:

Number of samples	
Sample code	
Sample type	Biological / Composite Material / Thin Film / Crystalline Solid / Metal/Polymer/Ceramic/Composite/ Other (Please specify): *biological samples should be submitted after primary fixation
Detailed description of the sample (Refer Annexure I before filling)	
Sample form	Powder/Pellet/Suspension/On glass substrate/Film/Others.....
If sample is Pellet, thin film (Refer Annexure II before filling)	Mention sample dimensions.....
If sample is powder, Dispersion required (Refer Annexure II before filling)	Yes/No If Yes, Medium for dispersion.....
Nature of the sample	Non-Conducting / Conducting / Semi-Conductor
Sample is	Magnetic /Non Magnetic

Type of Analysis & Details of the Analysis required (Kindly tick):

SEM Image	Mode	Secondary Electron Image / Back Scattered Electron Image
	Analysis requirement	Surface Imaging / Cross Section Imaging / Surface + Cross Section imaging (*For powder and suspension samples only surface imaging is possible*)
	Sample to be mounted	Planar/Cross Section/ Powder directly loaded on sample holder/ Drop cast for liquid or suspension samples
	Expected Morphology	Brief description about shape
	Expected Particle Size	
EDS	Analysis requirement	Point EDS /area EDS/EDS mapping/ line scan
	List of expected elements (for EDS)
STEM Imaging		Please mention the sample thickness (Should be < 100nm)