

Indent Serial No.

Date:

SCANNING PROBE MICROSCOPE (SPM) LABORATORY
CENTRAL RESEARCH FACILITY
INDIAN SCHOOL OF MINES, DHANBAD – 826004

[Please read the information given overleaf before filling up this form and put a tick (✓) in appropriate box.]

I wish to get (in words) number of samples (on the basis of one sample per slot) to be examined /analyzed by atomic force microscope (AFM). The nature of sample(s) is:

- (i) Hardness: Hard () [e.g. Metal, Ceramic, Semiconductor, IC, Wafer, Rock, Coal etc] / Soft () [e.g. Polymer, Rubber, Biological specimen etc] / Delicate () [e.g. Nanostructured thin films etc] / Others ();
 - (ii) Structural form: Bulk () / Sheet () / Film () / Nanostructured thin film () / Others ();
 - (iii) Expected height variation of surface roughness within an area of 90 μm × 90 μm: μm;
 - (iv) Expected surface feature size: μm / nm.
- (If 'Others' please elaborate)

I wish to study the sample using the Contact (), Tapping (), ScanAsyst () imaging mode of Dimension Icon () / MultiMode () SPM system.

Please allot me slots of samples. The data obtained will only be used for academic / research / development purposes and will not be used for any legal dispute.

User's Name (block letter): Name of Supervisor:
Dept./Centre Lab. Phone No. Cell No:
Email:

Signature of HOD / HOC / Supervisor / PI / Prof.-in-Charge

Signature of the user

Detail of amount deposited for the analysis

The estimated charge for the work ₹ (In wards) has been deposited through †DD (Number) / †Cash payment in the ISM Cash counter (Receipt No.) on (date).

† Please provide the original DD / CC of cash receipt along with this form.

Signature of the user

The Operator

Please allot time and complete the work.

Signature of the Laboratory In-Charge

The above work has been done satisfactorily on (Date) within number/s of slot and generated data have been delivered to me.

Signature of the Operator

Signature of the User

INFORMATION FOR USERS

1. Scanning Probe Microscope Laboratory of CRF, ISM, has two SPM systems (Dimension Icon and MultiMode) with one controller (Nanoscope V) from Bruker. So only one system is operated at a time. Presently imaging services by only Atomic Force Microscope (AFM) [contact and tapping modes] are being provided.
2. It is not possible to provide services from both the SPM systems on the same day for a user. Service schedule by a particular system is provided to a user only after obtaining service requisitions of at least four slots per day on that system.
3. The charges (inclusive of taxes) for the AFM imaging are as follows (per sample slot):
 - (i) Internal users (ISM): ₹ 500
 - (ii) External users from Academic and Research Institutes: ₹ 1000
 - (iii) External users from Industries: ₹ 2000

All payments must be made prior to booking the slot. Original of the payment slip (carbon copy for deposit in ISM cash counter in the head of CRF-SPM) or original Demand Draft (drawn in favour of Registrar, ISM) must be provided with the booking form.

Internal users should directly get in contact with the SPM Lab to book a work slot. External users may contact with,

Dr. A. K. Kar
Associate Professor,
Department of Applied Physics,
Indian School of Mines, Dhanbad – 826004, Jharkhand
Email: kar.ak.ap@ismdhanbad.ac.in
Phone: 326-223-5403

To avail concession for Academic and Research Institutes, an external user should also send a documentary evidence (i.e. a letter of request from an authorized signatory in your institute's / department's original letter head) for the same along with the filled up registration form and Demand Draft. Schedule of work slot will be informed by email.

4. Sample preparation guidelines:
 - (i) Samples should be prepared by the users.
 - (ii) Samples should be dry and moisture free.
 - (iii) There should not be loose particles on the samples and they should be very clean and dust free.
 - (iv) Size of the samples is restricted to as follows.
For Dimension Icon system: Diameter < 210 mm, Thickness < 15 mm; 210 mm vacuum chuck is available.
For MultiMode system: Diameter < 15 mm, Thickness < 5 mm.
 - (v) Roughness height variation of the sample surface is restricted to as follows.
For Dimension Icon system: 10 μm within an area of $\sim 90 \mu\text{m} \times 90 \mu\text{m}$ (maximum capability)
For MultiMode system: 2.5 μm within an area of $\sim 10 \mu\text{m} \times 10 \mu\text{m}$ (maximum capability)
5. The operator will not be responsible for any damage of the sample during operational procedure.
6. Samples are to be brought by the user to the facility on the date and time of appointment for analysis.
7. Analytical data are provided in CD to be brought by the user (unused i.e. blank and new).