



Advanced Instrumentation Research Facility

USER CHARGES

(All sample to be prepared by users at their end unless specified).

Please note that before bringing samples, consult concerned AIRF staff member(s).

Revised on 20th Dec, 2011

Instrument/ Laboratory	JNU	Other Universities/ Academic & Research Institutions	Private Industries/ For-Profit Laboratories	User Information
Transmission Electron Microscope (TEM)	<p>(a) Biological Sample preparation (preparation of blocks, sectioning and staining): Rs. 600/- per sample</p> <p>(b) Negative Staining Rs. 200/- per sample</p> <p>Viewing only: Rs. 250/- per sample</p> <p>Viewing + EDX: Rs. 500/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 600/- per sample</p>	<p>(a) Biological Sample preparation (preparation of blocks, sectioning and staining): Rs. 1800/- per sample</p> <p>(b) Negative Staining Rs. 600/- per sample</p> <p>Viewing only: Rs. 1200/- per sample</p> <p>Viewing + EDX: Rs. 1800/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 2400/- per sample</p>	<p>(a) Biological Sample preparation (preparation of blocks, sectioning and staining): Rs. 7200/- per sample</p> <p>(b) Negative Staining Rs. 1800/- per sample</p> <p>Viewing only: Rs. 4800/- per sample</p> <p>Viewing + EDX: Rs. 7200/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 8400/- per sample</p>	<p>Ten different views/ magnifications shall be provided per sample. Hereafter, Rs. 60/- would be charged extra per image.</p> <ul style="list-style-type: none"> Biological samples will be accepted only after primary fixation with suitable fixative. For TEM, samples should be trimmed into 1.0 -1.5 mm thick pieces (4 - 5 pieces for each sample). Fixation may be done in 2.5 % Glutaraldehyde and 2 % paraformaldehyde made in 0.1 M sodium phosphate buffer (pH 7.2). The fixed sample should be brought at AIRF, JNU in fixative or in phosphate buffer at 4 °C preferably between 10 am to 1 pm (Working days). Maximum of 10 samples per requisition form will be accepted.
Scanning Electron Microscope (SEM)	<p>Coating: Rs. 150/- per sample</p> <p>Biological Sample Preparation (Fixation, dehydration, critical point drying and coating): Rs. 250/- per sample</p> <p>a) High Vacuum Mode:</p> <p>Viewing only: Rs. 150/- per sample</p> <p>Viewing + EDX: Rs. 400/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 400/- per sample</p> <p>b) Low Vacuum Mode:</p> <p>Viewing only: Rs. 400/- per sample</p>	<p>Coating: Rs. 250/- per sample</p> <p>Biological Sample Preparation (Fixation, dehydration, critical point drying and coating): Rs. 750/- per sample</p> <p>a) High Vacuum Mode:</p> <p>Viewing only: Rs. 600/- per sample</p> <p>Viewing + EDX: Rs. 1500/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 1800/- per sample</p> <p>b) Low Vacuum Mode:</p> <p>Viewing only: Rs. 1200/- per sample</p>	<p>Coating: Rs. 600/- per sample</p> <p>Biological Sample Preparation (Fixation, dehydration, critical point drying and coating): Rs. 2400/- per sample</p> <p>a) High Vacuum Mode:</p> <p>Viewing only: Rs. 2400/- per sample</p> <p>Viewing + EDX: Rs. 3600/- per sample</p> <p>Viewing + EDX (Mapping): Rs. 4800/- per sample</p> <p>b) Low Vacuum Mode:</p> <p>Viewing only: Rs. 3600/- per sample</p>	<p>Ten images per sample would be provided. Hereafter, Rs. 60/- would be charged extra per image.</p> <ul style="list-style-type: none"> Biological samples will be accepted only after primary fixation with suitable fixative. The thickness of samples may be upto 1 cubic cm. Fixation may be done in 2.5 % Glutaraldehyde and 2 % paraformaldehyde made in 0.1 M sodium phosphate buffer (pH 7.2). The fixed sample should be brought at AIRF, JNU in fixative or in phosphate buffer at 4 °C preferably between 10 am to 1 pm (Working days). Maximum of 10 samples per requisition form will be accepted.

Instrument/ Laboratory	JNU	Other Universities/ Academic & Research Institutions	Private Industries/ For-Profit Laboratories	User Information
Confocal Microscope Inverted Research Fluorescence Microscope FOR THIS FACILITY, PLEASE REFER TO CONFOCAL USER INSTRUCTIONS ON WEBSITE.	<ul style="list-style-type: none"> Rs. 250/- per hour for all samples including FRET, FRAP and FCS 	<ul style="list-style-type: none"> Rs. 1200/- per hour for all samples including FRET, FRAP and FCS 	<ul style="list-style-type: none"> Rs. 3000/- per hour for all samples including FRET, FRAP and FCS 	<p>Contact AIRF before preparing/submitting samples.</p> <p>This has a unique two- tiered, V shape optical design to accommodate a wide range of advanced research techniques giving bright images with minimal reflections or frame modifications. The IX71's modular frame and optical design provides nine access ports for multiple input or output devices. Up to four ports can have simultaneous access to a primary image. All the four ports are IR compatible.</p> <p>The camera system on this IX71 platform is DP71. It has special features:</p> <ol style="list-style-type: none"> 1.45 megapixel high resolution (1360x1024 pixels) images displayed live at 15fps. DP71's dedicated 2/3 inch CCD is cooled by a Peltier element to 10°C below ambient, ensuring high sensitivity, low noise image capture. You can choose and apply settings easily according to the specimen and observation method and then capture images quickly.
Circular Dichroism (CD) Spectrometer	Rs. 150/- per hour	Rs. 250/- per hour	Rs. 750/- per hour	Contact AIRF before preparing/submitting samples.
Stop Flow	Rs. 60/- per sample	Rs. 150/- per sample	Rs. 400/- per sample	Contact AIRF before preparing/submitting samples.
Cell Sorter and Flow Cytometer	<ul style="list-style-type: none"> Rs. 250/- per hour for Flow cytometry (including the sheath fluid charges) Rs. 350/- per hour for Sorting 	<ul style="list-style-type: none"> Rs. 500/- per hour for Flow cytometry (including the sheath fluid charges) Rs. 900/- per hour for Sorting 	<ul style="list-style-type: none"> Rs. 900/- per hour for Flow cytometry (including the sheath fluid charges) Rs. 2500/- per hour for Sorting 	Users will be provided the sheath fluid and sample tubes for their sample analysis.
Time Resolved Fluorescence Spectrometer (TRFS)	<ul style="list-style-type: none"> Rs. 60/- per hour 	<ul style="list-style-type: none"> Rs. 120/- per hour 	<ul style="list-style-type: none"> Rs. 300/- per hour 	Contact AIRF : i) Before preparing samples. ii) For available excitation wavelengths.
FTIR-Raman	<ul style="list-style-type: none"> FTIR: Rs. 100/- per sample RAMAN: Rs. 100/- per sample IR-Microscope: Rs. 200/- per sample 	<ul style="list-style-type: none"> FTIR: Rs. 400/- per sample RAMAN: Rs. 400/- per sample IR-Microscope: Rs. 800/- per sample 	<ul style="list-style-type: none"> FTIR: Rs. 1000/- per sample RAMAN: Rs. 1000/- per sample IR-Microscope: Rs. 2000/- per sample 	Contact AIRF before preparing/submitting samples.
Liquid Nitrogen (LN₂)	Rs. 15/- per litre	Rs. 25/- per litre	Rs. 60/- per litre	Contact AIRF.

Instrument/ Laboratory	JNU	Other Universities/ Academic & Research Institutions	Private Industries/ For-Profit Laboratories	User Information
Energy Dispersive X-ray Fluorescence (EDXRF) Spectrometer	<p>Without standards: Rs. 250/- per sample</p> <p>With standards: Rs. 50/- per element</p> <p>Sample Preparation: Rs. 60/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Without standards: Rs. 500/- per sample</p> <p>With standards: Rs. 100/- per element</p> <p>Sample Preparation: Rs. 150/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Without standards: Rs. 1200/- per sample</p> <p>With standards: Rs. 250/- per element</p> <p>Sample Preparation: Rs. 300/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Contact AIRF before preparing/submitting samples.</p> <ul style="list-style-type: none"> ➤ Only solid samples in powder form with particle size <75μm can be analyzed. ➤ Min. quantity of about 1 gm sample required in case of plants and 2 - 3 gm in case of soil. ➤ Samples should be properly dried. ➤ The user should specify the elements to be identified. ➤ For very accurate and precise quantitative measurements, the user should provide the respective standards.
Wavelength Dispersive X-ray Fluorescence (WDXRF) Spectrometer	<p>Without standards: Rs. 250/- per sample</p> <p>With standards: Rs. 50/- per element</p> <p>Sample Preparation: Rs. 60/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Without standards: Rs. 500/- per sample</p> <p>With standards: Rs. 100/- per element</p> <p>Sample Preparation: Rs. 150/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Without standards: Rs. 1200/- per sample</p> <p>With standards: Rs. 250/- per element</p> <p>Sample Preparation: Rs. 300/- per sample</p> <p>Myler Film: Rs. 50/- @ 5 μm</p>	<p>Contact AIRF before preparing/submitting samples.</p> <ul style="list-style-type: none"> ➤ Only solid samples in powder form with particle size <75μm can be analyzed. ➤ Min. quantity of about 1 gm sample required in case of plants and 2 - 3 gm in case of soil. ➤ Samples should be properly dried. ➤ The user should specify the elements to be identified. ➤ For very accurate and precise quantitative measurements, the user should provide the respective standards.
X-ray Diffraction (XRD) System for Powder- Thin Films with low temperature attachment	Rs. 150/- per sample	Rs. 600/- per sample	Rs. 1200/- per sample	<p>Sample should be crushed and brought in powder form.</p> <ul style="list-style-type: none"> • Maximum of 6 samples per requisition form will be accepted. • Maximum of one requisition form per user will be accepted in one single day. Subsequent requisition forms of the same user will be accepted for booking and analysis only after all other users booked for that day, have finished their analysis. • The maximum time for analysis of one sample is one hour. After every one hour, the same sample would be treated as a new sample and charged accordingly.
XRD Protein Crystallization Laboratory	<p>Rs. 250/- per half day</p> <p>Consumables: Rs. 200/- Plates: Rs. 200/-</p>	<p>Rs. 500/- per half day</p> <p>Consumables: Rs. 500/- Plates: Rs. 250/-</p>	<p>Rs. 2500/- per half day</p> <p>Consumables: Rs. 1000/- Plates: Rs. 500/-</p>	<p>Contact AIRF before preparing/submitting samples.</p>

Instrument/ Laboratory	JNU	Other Universities/ Academic & Research Institutions	Private Industries/ For-Profit Laboratories	User Information
X-ray Diffractometer (XRD) - for Macromolecules & Protein Crystallography	Rs. 600/- per sample	Rs. 1200/- per sample	Rs. 2400/- per sample	Patterns and convolutions would be given. Contact AIRF before preparing/ submitting samples.
Capillary Electrophoresis	Rs. 150/- per three samples	Rs. 250/- per three samples	Rs. 600/- per three samples	Contact AIRF before preparing/ submitting samples.
Gas Chromatograph Mass Spectrometer (GCMS)	<ul style="list-style-type: none"> ● GC: Rs. 100/- per sample ● MS: Rs. 200/- per sample ● GC-MS: Rs. 300/- per sample <p>Note:- For any additional fragmentation spectra extra charges of Rs. 25 per peak</p>	<ul style="list-style-type: none"> ● GC: Rs. 200/- per sample ● MS: Rs. 400/- per sample ● GC-MS: Rs. 600/- per sample <p>Note:- For any additional fragmentation spectra extra charges of Rs. 25 per peak</p>	<ul style="list-style-type: none"> ● GC: Rs. 600/- per sample ● MS: Rs. 1000/- per sample ● GC-MS: Rs. 1500/- per sample <p>Note:- For any additional fragmentation spectra extra charges of Rs. 25 per peak</p>	<p>Out put to user- for GC = Peak separation profile + RT + Area.</p> <p>For GC-MS = peak separation profile + RT + Area + Base peak fragmentation profile.</p> <p>For any additional fragmentation spectra extra charges of Rs. 25 per peak.</p> <p>Conditions:-</p> <p>(a) User will provide detailed method protocol.</p> <p>(b) User will supply standards as per their requirement.</p> <p>(c) Interpretation of fragment spectra of MS is User's responsibility.</p>
500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer with solid state attachment (CP- MAS)	<p>i) Per Sample Charges: For ¹H NMR: Rs. 100/- per sample For ¹³C NMR and other nuclei: Rs. 150/- per sample</p> <p>ii) Experiments that require hourly blocks (1 Block equals 3 hours): 1 Block: Rs. 250/- 2 Blocks: Rs. 350/- 3 Blocks: Rs. 450/- 4 Blocks: Rs. 550/-</p> <p>iii) Additional Deuterated Solvent Charges: D₂O/ CDCl₃: Rs. 50/- per sample DMSO-d₆: Rs. 70/- per sample</p> <p>iv) Solid State Samples: For ¹H NMR: Rs. 300/- per sample For ¹³C NMR and other nuclei: Rs. 500/- per sample</p>	<p>i) Per Sample Charges: For ¹H NMR: Rs. 200/- per sample For ¹³C NMR and other nuclei: Rs. 300/- per sample</p> <p>ii) Hourly blocks are not available to external users.</p> <p>iii) Additional Deuterated Solvent Charges: D₂O/ CDCl₃: Rs. 100/- per sample DMSO-d₆: Rs. 150/- per sample</p> <p>iv) Solid State Samples: For ¹H NMR: Rs. 1700/- per sample For ¹³C NMR and other nuclei: Rs. 2500/- per sample</p>	<p>i) Per Sample Charges: For ¹H NMR: Rs. 500/- per sample For ¹³C NMR and other nuclei: Rs. 800/- per sample</p> <p>ii) Hourly blocks are not available to external users.</p> <p>iii) Additional Deuterated Solvent Charges: D₂O/ CDCl₃: Rs. 200/- per sample DMSO-d₆: Rs. 450/- per sample</p> <p>iv) Solid State Samples: For ¹H NMR: Rs. 6000/- per sample For ¹³C NMR and other nuclei: Rs. 9000/- per sample</p>	<p>Contact AIRF before preparing/ submitting samples.</p> <p><u>Important Note for Solid-state samples:</u></p> <p>(a) As a matter of AIRF policy, it has been decided that solid-state NMR experiments would be done three times a year.</p> <p>(b) Requests for solid-state experiments should be directly made to Dr. Pritam Mukhopadhyay, NMR faculty in-charge (pritam.jnu@gmail.com) or Dr. Ajai Kumar, operator in-charge (ajkumar33@gmail.com).</p> <p>(c) Due to shortage of trained personnel and complexity involved in solid-state NMR experiments, no special requests for emergency recording of solid-state samples would be entertained.</p> <p>(d) Samples for solid-state NMR should be sent to AIRF, JNU only after taking permission from the NMR faculty in-charge or operator in-charge.</p> <p>(e) Nuclei to be recorded have to be clearly mentioned.</p> <p>(f) Samples should be finely powdered and a minimum amount of 125 mg should be sent.</p> <p>(g) Please check the revised rates and send the exact amount.</p>

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Surface Plasmon Resonance (SPR) Spectrometer	Rs. 250/- per day SPR bare gold discs: Rs. 2500/- Chemicals and other consumables: Rs. 250/- per experiment <i>Note: Rates of gold disc may vary depending upon the specifications and Company price.</i>	Rs. 600/- per day SPR bare gold discs: Rs. 2500/- Chemicals and other consumables: Rs. 250/- per experiment <i>Note: Rates of gold disc may vary depending upon the specifications and Company price.</i>	Rs. 2400/- per day SPR bare gold discs: Rs. 2500/- Chemicals and other consumables: Rs. 250/- per experiment <i>Note: Rates of gold disc may vary depending upon the specifications and Company price.</i>	Contact AIRF before preparing samples.
Galvanostat-Potentiostat for electrochemical measurements	Rs. 250/- for each analysis Consumables: Rs. 250/- per day	Rs. 600/- for each analysis Consumables: Rs. 500/- per day	Rs. 2400/- for each analysis Consumables: Rs. 1000/- per day	Contact AIRF before preparing samples.
Quartz Crystal Microbalance	Rs. 250/- per day Quartz Crystal Ti/Au: Rs. 4200/- Consumables: Rs. 250/- per day <i>Note: Rates of crystal may vary depending upon the specifications and Company price.</i>	Rs. 600/- per day Quartz Crystal Ti/Au: Rs. 4200/- Consumables: Rs. 500/- per day <i>Note: Rates of crystal may vary depending upon the specifications and Company price.</i>	Rs. 2400/- per day Quartz Crystal Ti/Au: Rs. 4200/- Consumables: Rs. 1000/- per day <i>Note: Rates of crystal may vary depending upon the specifications and Company price.</i>	Contact AIRF before preparing/ submitting samples.
Live Imaging Laboratory <i>For fixed samples, the existing Confocal facility is to be used and the live imaging facility is strictly for only live samples.</i>	Rs. 400/- per hour for time lapse	Rs. 2200/- per hour for time lapse	Rs. 4800/- per hour for time lapse	Contact AIRF before preparing samples and for available facilities pertaining to live imaging. Instrument facilities available in this laboratory: 1. Real Time Laser Scanning Confocal Microscope Model A1R with motorized inverted microscope having Live Cell and Spectral Imaging (Nikon-Model Ti-E) 2. Fully Motorized Laser Total Internal Reflection Fluorescence (TIRF) Microscope (Nikon- Model Ti-E) 3. Integrated Live Cell Imaging Set-up (Model Biostation IM-Q) 4. Trinocular Research Microscope (anti-fungus type) for bright field, phase contrast, DIC, polarizing and digital camera attachment (Nikon-Model 80i) 5. Trinocular Microscope (anti fungus type) with digital camera system (Nikon- Model E200) <i>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</i>

Instrument/ Laboratory	JNU	Other Universities/ Academic & Research Institutions	Private Industries/ For-Profit Laboratories	User Information
Mass Spectrometry Laboratory	<p>(I) MALDI Analysis: Intact Mass: Rs. 200/- MS/ MS Protein Id: Rs. 200/-</p> <p>(II) RP/RP 2D nano LC: Rs. 1500/-</p> <p>(III) ESI-MS/ MS Analysis (charges per nano LC peak subjected to MS/ MS analysis: Protein Id: Rs. 300/-</p>	<p>(I) MALDI Analysis: Intact Mass: Rs. 300/- MS/ MS Protein Id: Rs. 600/-</p> <p>(II) RP/RP 2D nano LC: Rs. 3000/-</p> <p>(III) ESI-MS/ MS Analysis (charges per nano LC peak subjected to MS/ MS analysis: Protein Id: Rs. 600/-</p>	<p>(I) MALDI Analysis: Intact Mass: Rs. 1000/- MS/ MS Protein Id: Rs. 1500/-</p> <p>(II) RP/RP 2D nano LC: Rs. 8000/-</p> <p>(III) ESI-MS/ MS Analysis (charges per nano LC peak subjected to MS/ MS analysis: Protein Id: Rs. 5000/-</p>	<p>Contact AIRF before preparing/ submitting samples.</p> <p>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</p>
Femtosecond Laser Facility (Femtosecond Fluorescence Up-conversion)	<p>Rs. 100/- per hour</p> <p>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</p>	<p>Rs. 200/- per hour</p> <p>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</p>	<p>Rs. 1000/- per hour</p> <p>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</p>	<p>Contact AIRF before preparing/ submitting samples.</p> <p>For booking please contact AIRF: Mrs. Neetu Singh neetusingh@mail.jnu.ac.in or Mr. Sandeep Sarpal sandeepsarpal@rediffmail.com</p> <p>Please contact Dr. Sobhan Sen (faculty in-charge, Femtosecond facility) at sobhan.sen@gmail.com for details of sample preparation and other details.</p> <p>Instructions for the users:</p> <ol style="list-style-type: none"> The user has to run their samples first in the picosecond TRFS machine. And only if it is absolutely necessary to obtain the fast life-times of molecules which are not resolved in picosecond TRFS machine, only then the users will be allowed to run their samples in the femtosecond facility. The users should have sufficient knowledge of picosecond and femtosecond spectroscopy. As this instrument is not a turn-on-key system, and because of the absence of the technical staff for this facility, the users have to take help from Dr. Sobhan Sen to run their samples till AIRF appoint and train proper technical staff for this facility. Available excitation wavelengths are: 375 nm to 470 nm (for second harmonic), 280 nm to 320 nm (for third harmonic). Lifetime measurement window: 50 fs to 1.5 ns (after deconvolution). For now, the instrument is only aligned to do measurements with liquid samples.

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Physical property Measurement System (PPMS)	Rs. 500/- per day	Rs. 2000/- per day	Rs. 5000/- per day	Contact AIRF before preparing/ submitting samples. <i>The requisition forms submitted before 25 July, 2011 would be charged as per the user charges applicable.</i>

- All results would be given on a compact disc (CD) provided by AIRF.
- # Analysis other than routine shall be charged extra.
- ** AIRF will not supply any software copies for offline analysis.
- *** The above rates are subject to revision from time to time.

Note: The facility timings are from 9.00 am to 5.30 pm. On Saturday and Sunday and Government Holidays, the Facility is closed.

- **The Requisition forms for the users can be downloaded from the AIRF site or can be collected from AIRF Office.**
- For the users within JNU, the duly filled forms must be signed by the Supervisor and submitted at the AIRF office/ given to the respective instrument operator in charge for the booking of the user slot for instrument.
- The requisition forms from users outside JNU must be signed by concerned officials and submitted in person during sample analysis or sent before analysis by mail/ post/ courier along with the cheque/ Demand Draft drawn in favour of “**The Finance Officer - JNU payable at New Delhi**” for the amount calculated as per user charges given above for all samples/ analysis. Users coming from outside JNU and other stations may reconfirm the availability of time slots in advance just before coming.
- The Director’s decision shall be final in case of any dispute.
- The users shall be allotted the time slots as per the availability.
- **All users are required to acknowledge the use of AIRF equipments/ AIRF facilities and the person(s) providing the technical help in all their research publications/ articles resulting from the use of AIRF. A copy of such publication must be submitted to AIRF for reference and record.**