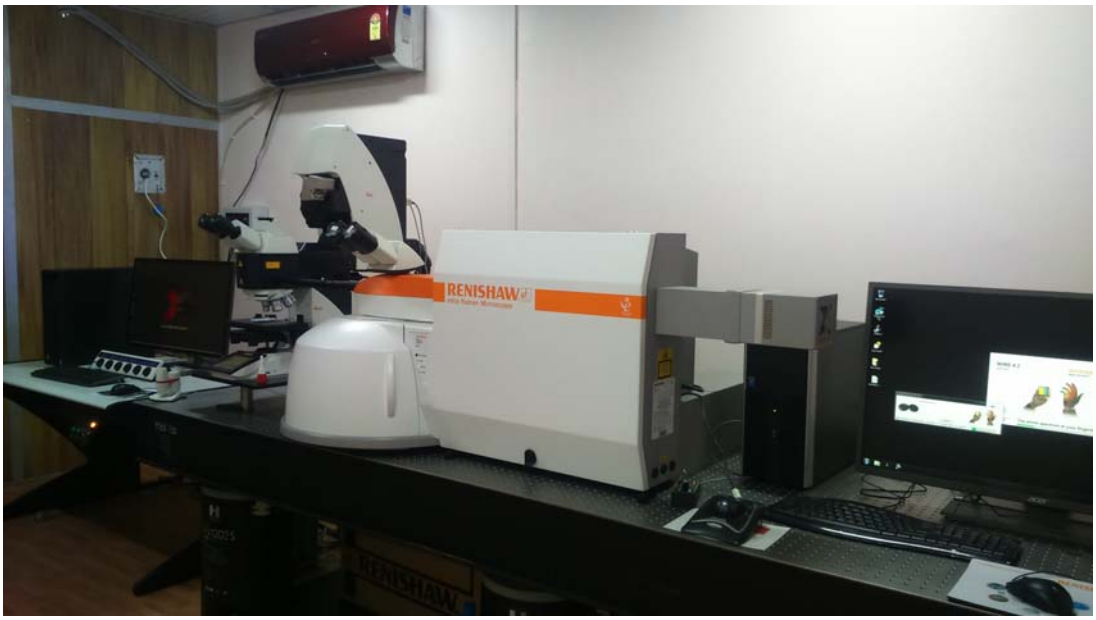
Automated Micro Raman Spectrometer



Model: RENISHAW InVia Raman Microscope

Specification:

- Spectral resolution (FWHM): 0.5 cm^{-1}
- Raman Spectral range: 100 cm^{-1} to 4000 cm^{-1}
- Spectrometer Range: 200 nm – 2000 nm
- Laser: Multiline Argon Ion Laser (514/488 nm).
- 5x, 20x, 50x, & 100x objectives**.**

Applications:

Raman Microscopy is applicable for the Phase and chemical identification, characterization of molecular structure, their bonding effect, environment and stress of any material of different disciplines *viz*. Geological, Physical, Chemical, Biological and forensic sciences.

Features:

- Micro-Raman spectrometer-In-Via reflex Raman spectroscopy system combined with research grade Leica microscope allows scatter, line, area mapping and confocal depth profiling.
- Renishaw Raman can be used with two types of lasers- 514 nm and 785 nm with different magnification lenses.
- Argon Ion laser 514 nm 20 MW-5000 hours usage.
- Renishaw Diode laser, solid state Near IR -3000 hour.

Capability:

- High resolution – better than 0.5 cm-1, Confocal depth profiling with step size as small as 0.1 µm.
- Long working distance objectives for liquid sampling.
- Macro sampling kit for liquid samples, High temperature cell unit with peltier heating and cooling stage, Fiber optic probe for macro samples with flexible sampling arm.
- Raman spectrometer can be used for getting characteristic vibrational frequencies of atoms which provides finger print by which chemical composition and structure of material can be identified, crystallographic orientation of the sample, identification of particles in micrometer dimension variation in composition can be mapped to provide images based on the distribution of molecular composition.
- Focusing can be done with the use of coarse focus, fine focus and super fine focus.

Do's or don't for RAMAN Laboratory:

- Only authorised/registered users are allowed to access the RAMAN laboratory;
- Non authorized users are not allowed to remove objectives of the microscope or attempt any maintenance;
- Users are not permitted to setup, alter and save new configurations of lasers and filters. The pre-programmed configurations are suitable to cover most of the applications in the Institute.
- There is only one on/off switch for the entire system. Do not touch any other on/off switch on the microscope, computer or power supplies.
- When completed your studies and imaging work please switch off the lasers and wait until they are properly shut down before exiting the WIRE software;
- Copy your images to CD, and DVD or network drive before you leave. There is no scope of long time storage of images left on the microscope operating system and may be deleted at any time without warning.
- Samples should preferably be solid or semi-solid or in powder form. For liquid analysis, please make inquiry in advance.
- Please make available the analysis related publications to expedite the sample preparation related protocols.
- Analysis of samples is restricted to generation of spectra in case Laser Raman Spectroscopy.
- Interpretation of spectra and imaging is available in certain cases and it will be chargeable extra.

Proposed Analytical charges

Facility	**LASER RAMAN Spectroscopy**		
Nature of Specimens	**Sponsored Projects Implemented in BSIP In Rs.**	**Academic & Research/ Institutions/IITs/IISERs/ Universities In Rs.**	**Private Industries/ for Profit Laboratories In Rs.**
At regular Temperature	800	1800	4800
At low Temperature	1500	2500	6500

Plus GST as applicable

BIRBAL SAHNI INSTITUTE OF PALAEOSCIENCES

(An Autonomous Institute under the Department of Science and Technology, Govt. of India)
53, University Road, Lucknow- 226007, India
REQUISITION FORM FOR USING LASER RAMAN SPECTROSCOPY UNIT

User Information

1. Name :
2. Designation :
3. Affiliation :
4. Address for communication :
5. Phone number :
6. Email address :
7. Special Instruction(s) :

Certification and undertaking by financially responsible person (HOD / Principal / Guide Director)**:**

I agree to pay the charges for this analysis and certified that the user is a student / employee of our organization. I assure you that, all publications arising out of research work, where in the analytical services of the BSIP, Lucknow have been made use of, the center shall be duly acknowledged.

DATE: Signature with date & seal
(HOD / Principal / Guide / Director)

Sample Information for Analysis:

1. Title of Project: _____
_____
2. Nature of the Project : Inhouse [ ] Sponsored [ ]
3. Number of sample and amount (Rs.): _____ (DD. No. with date and Bank details):
4. Nature of Sample : Powder / Solid / Liquid
5. Quantity of samples (> 5 mg is preferred) : _____
6. Molecular Formula or Structure (If known) : _____
7. The range of wavenumber (cm-1) of interest : _____
(If the range is not provided, the spectrum will be recorded from 100 to 3500 cm^{-1})

Is your sample photodegradable?	Yes		No		Don't know
Is there any absorption or fluorescence?	Yes		No		Don't know

(If yes, at what wavelength? Choose from the following)
488 nm 514 nm 785 nm

(To be filled by the Center Incharge)

Date of receipt of Sample : _____
Scheduled date of sample analysis : _____
Faculty in-charge for sample analysis : _____

Signature of Indenter Signature of Lab In-charge

Note:

The charges for external users have to be paid at the time of sample submission. All payments should be made in the form of a demand draft(**D.D**) in favor of **"Director, Birbal Sahni Institute of Palaeosciences"** payable at Lucknow. **Reports will be released only after payment is received.** Kindly send us the publication reference of all publication arising out of analysis done at the Center. (Journal name, Volume number, Names of the authors, Date of issue of the publication etc.