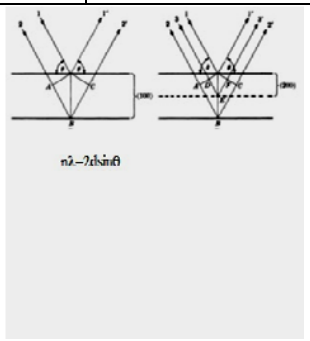
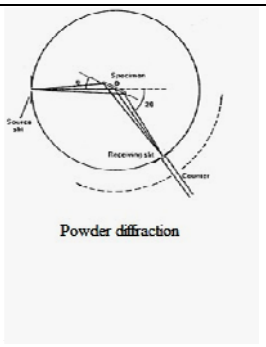
Name of Machine	X-ray Diffraction (XRD)		
Make	PANalytical, Netherland	Model	X'PERT^3 Powder





Specification

The salient features/Specifications of the system are as follows:

1. X-ray diffraction facility at BSIP has state of an art facility that offers a wide range of materials characterization using X-rays for Bulk materials, nanomaterials, and geological samples.
2. Grazing incidence diffraction for thin films.
3. Grazing incidence diffraction for powder samples.
4. X'pert Powder – Multifunctional XRD Cu LFF High-Resolution X-ray tube (designed andmanufactured by PANalytical)
5. Flat Sample Stage for mounting powder samples as well as MPSS (multipurpose sample stage)
6. **Detector**: PIXcel – World's most advanced linear detector developed by Medipix Technology in collaboration with CERN.
7. ICDD Database, PDF 4 Database available.

Working principle:

Powder method: polycrystalline sample, variable θ, fixed λ used in the determination of crystalline structure of materials in powder form.

Application

- Geological samples (bulk mineralogy and clay mineralogy)
- Nanomaterials
- Particle size determination
- Stress determination
- Polymer Characterization

User Instruction

1. For Bulk mineralogy sample weight should be ~5-6gm.
2. For XRD analysis of bulk sediment samples, a -200 mesh powder sample will be accepted otherwise grinding charges will also be applicable as per the rate list.
3. For clay mineral analysis-oriented slides should be provided by the user otherwise clay separation charges will be applicable as per the rate list.
4. In the rate list only, single scan charges are given. For clay mineral analysis scanning after glycolation and heat treatment, additional charges will be applicable as per the total number of scans.
5. Only scan results will be provided; Identification and Quantification will not be provided.
6. Minimum ~1-2 gm powder samples should be provided by the user for nanoparticles and other crystalline samples.

Contact Person

In-Charge	Dr. Kamlesh Kumar (0522-2742978) **Email** Kamlesh_Kumar@bsip.res.in
Staff:	Dr. Amrit Pal Singh Chaddha: apsingh.chaddha@bsip.res.in (0522-2742978)

The rate is INR (18% GST will be charged Extra)

Instrument	Student	Govt. Organization/Universities	Private Organization
Sample Grinding (75µm)	100	200	300
LOI (Loss on Ignition)	200	300	400
Bulk powder/clay slide (per Scan)	1000	1500	2000
Thin films (per Scan)	2000	2500	3000
Micro diffraction (per Scan)	3500	4500	6000

Guideline

1. The analytical data/spectra provided cannot be used as certificates in legal disputes.
2. Service charges (including GST) will be payable in advance (Draft/RTGS/NEFT) infavor of "The Director, BSIP, Lucknow". Payable at Lucknow
3. Separate samples should be sent for different analysis. Samples will not be analyzed until payment is received.
4. In the case of prepared samples, the user must specify the procedure that how the samplewas prepared (complete methodology).
5. In all correspondence related to analysis, our reference number must be mentioned.
6. Individual Scientists and Research fellows should send their applications and samples through their project head. Discounts in analysis charges for research fellows of universities/institutes will be decided by the Director in consultation with the respective lab.
7. Interpretation of data/spectra will NOT be done.
8. It is mandatory for users to acknowledge the facility in their research work and communicate the same to the respective laboratory and the Director, BSIP, Lucknow for onward communication to DST, New Delhi.

For a Lab visit, it is mandatory to make a prior appointment with the Director, of BSIP before your visit. The application should be sent through the department/Senior official of the institution/Company.

No deviation will be allowed for the timings.

To be filled in by the user while submitting the form

Date of submission:

REQUISITION FORM

BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW

53, University Road, Lucknow, Ph. 0522-2740008, 2740399

(XRD Facility)

Website: www.bsip.res.in, Email: xrdlab@bsip.res.in

(Geochemistry Lab)

(Information to be filled in by the user)

Name: _____

Address: _____

_____

Email and Mobile No.: _____

Category (In-house/sponsored/Govt. organization/private): _____

Number of samples: _____

Sl. No.	Sample ID	Type/Nature of Sample	Quantity	Year of collection	Lat./Long.	Remarks, if any
1						
2						
3						
4						
5						

To be filled in by the user while submitting the form

Date of submission:

SAMPLE INFORMATION FORM

BIRBAL SAHNI INSTITUTE OF PALAEOSCIECES, LUCKNOW

53, University Road, Lucknow, Ph. 0522-2740008, 2740399

(XRD Facility)

Website: www.bsip.res.in, Email: xrdlab@bsip.res.in

(Geochemistry Lab)

(Information to be filled in by the user)

Name: _____

Address: _____

_____

Email and Mobile No.: _____

Category (Inhouse/in-house sponsored/Govt. organization/private): _____

Number of samples: _____

Nature of samples (with details): _____

Scientific Objective of this study: _____

_____

Additional information, if any: _____

_____

Location (Lat & Long):_____

Exposed Section/Trench/Core/Others: _____

(For office use only)

Lab Reference No.:

R.P.C.C./ Registrar: Kindly raise the bill for the above

Total Charges:

Taxes:

Grand Total: