
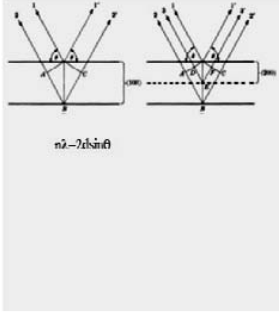
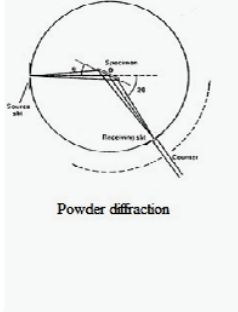


Name of Machine	X-ray Diffraction (XRD)		
Make	PANalytical, Netherland	Model	X'PERT ³ Powder
			
Specification			
<p>The salient features/Specifications of the system are as follows:</p> <ol style="list-style-type: none"> 1. X-ray diffraction facility at BSIP has state of an art facility that offers 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 and manufactured 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:			
<p>Powder method: polycrystalline sample, variable θ, fixed λ used in the determination of crystalline structure of materials in powder form.</p>			
Application			
<ul style="list-style-type: none"> • Geological samples (bulk mineralogy and clay mineralogy) • Nanomaterials • Particle size determination • Stress determination • Polymer Characterization 			
User Instruction			
<ol style="list-style-type: none"> 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. 			