

#		Features	Requirement
1.		Instrument type	Benchtop/Desktop
2.	X-ray tube	X-ray tube	Cu target with normal focus
3.		X-ray power	600 W
4.		Tube voltage	Up to 40 kV
5.		Stability	±0.01% or better
6.		Goniometer	Goniometer
7.	Goniometer scanning range		-3 to +145 ° or wider ( $2\Theta$ )
8.	Goniometer scanning speed		0.01° to 100° ( $2\Theta$ ) per min or better
9.	Accuracy		±0.02° or better
10.	Min. step width		0.005° ( $2\Theta$ )
11.	Slits		Divergence slit with the combination of variable and fixed mode, Scattering slit, Receiving slit, Soller slit must be included.
12.	Ni-k Filter		K $\beta$ reduction Ni filter
13.	Sample holder		Standard sample holder for accomodating foil/films and power samples with or without sample rotation.
14.		Radiation safety	The system must include all safety features with high radiation leakage proof.
15.	Detect or	Detector type	High speed Si strip
16.		0D/1D/2D detector	1D
17.		Dynamic range	Over 10 <sup>6</sup> CPS/line
18.		Water cooling system	In built or separate chiller
19.	Software	Software	Automatic profile fitting, peak search, K $\alpha_2$ elimination, multiple peak separation, integrated intensity calculations, Background subtraction and smoothing, $2\Theta$ correction, Phase identification, 3D crystal structure, Crystallite size and Lattice strength calculation, lattice constant refinement, residual stress and indexing etc. and other features must be included.
20.		Database	ICDD access (PDF-2 or 4) and ICSD access
21.		Rietveld software	For lattice constant quantitative analysis, crystallite size and lattice strain calculation using Rietvelt method must be included.

22.		Computer/Printer	In built or Separate PC and Printer
23.		Online UPS	5 KVA with min. 30 minutes back up.
24.	General Terms and Conditions	Warranty	Comprehensive warranty of one year for complete system including chiller (if external).
25.		Installation and Training	The instrument should be installed, tested to the satisfaction of user. Training for operation and maintenance of the instrument should be included in the offer.

**Minimum eligibility criteria:**

- ◆ The OEM should be in this business for at least 10 years. A 10 years old PO copy of similar equipment is to be included in the technical bid as evidence.
- ◆ The OEM should have at least five (5) installations of offered equipment in India. The PO copies/installation reports are to be included in the technical bid as evidence. In addition, satisfactory equipment performance reports, not older than three months, from these users are also to be included in the technical bid.
- ◆ The bidder (if not OEM) should be in the business for at least five (5) years with either one or multiple OEMs. Relevant PO copies need to be submitted as evidence.
- ◆ OEM must have trained the service engineer of the bidder. Relevant training certificate from OEM is to be attached as evidence.