



जम्मू केंद्रीय विश्वविद्यालय
Central University of Jammu
Rahya-Suchani (Bagla), Distt. Samba, Jammu, J&K - 181 143

No. CUJ/Proc./F. /2020/

Dated 11.01.2021

ADDENDUM – 01
Modification in Specification

Ref.: e-Tender Notice No. 15/2020-21

Item: Supply & Installation of **Bench Top Powder X-Ray Diffractometer**

S. No.	Item	Old Specification	Revised Specification
1.	X-ray Generator:	Max. continuous rated output: 600W or more Voltage: 10-30 kV in increment steps of 0.1 kV Current -0-20 mA in increment steps of 0.1 mA HT Stability better than +/-0.01% HV output for change in main of +/- 10 %. Safety key to enable and disable x-ray generation Regulation features include: arc suppression, over voltage, over current and over power. Automated tube warm up, tube ramping Necessary software and hardware for diagnostics capable of checking the equipment parameters/ calibration etc.	Max. continuous rated output: 600W or more Voltage: 20-40 kV in increment steps of 1 kV Current 2-15 mA in increment steps of 1 mA HT Stability better than +/-0.01% HV output for change in main of +/- 10 %. Safety key to enable and disable x-ray generation Regulation features include: arc suppression, over voltage, over current and over power. Automated tube warm up, tube ramping Necessary software and hardware for diagnostics capable of checking the equipment parameters/ calibration etc.
2.	X-ray tube:	X-ray Tube: 1500 Watt Long fine focus Cu ceramic x-ray tube Take-off angle: 6°	X-ray Tube: 1000 Watt or above Cu ceramic x-ray tube Take-off angle: 6°

3.	Goniometer:	<p>High Precision, Vertical $\theta/2\theta$ (inclined x-ray tube tower to prevent powders from spilling)</p> <p>Range: 1 ...150° 2θ</p> <p>Radius: 140 mm or Higher Scanning Speed: 0.01 ~ 100 degree/min or better Max Motor speed: 500deg/min or better Accuracy: $\pm 0.02^\circ 2\theta$</p> <p>Divergence: 4 fixed to be included</p> <p>Soller Slit: Incident and diffracted beam</p> <p>Receiving Slit & Anti-scattering slit(SS): As per Powder Application requirement</p>	<p>High Precision, Vertical $\theta/2\theta$</p> <p>2 Theta Range: -3 to 145° 2θ</p> <p>Radius: 140 mm or Higher Scanning Speed: 0.01 ~ 100 degree/min or better Slew speed: 500deg/min or better</p> <p>Soller Slit: Incident and receiving slit (2.5 Degree)</p>
4.	Optics:	<p>-Fixed slits as per powder xrd applications requirements. -Set of divergent and anti-scatter slits suitable to the design of the xrd system.</p>	<p>-Fixed slits as per powder xrd applications requirements.</p>
5.	Detector:	<p>High-speed silicon strip based detector with at least 500 Silicon Strips or more. Should be able to work in both 1D as well as 0D modes</p>	<p>High-speed silicon strip based detector with at least 256 or higher Silicon Strips or more. Should be able to work in both 1D as well as 0D modes</p>
6.	Sample stage:	<p>Rotating Sample Stage for optimized particle statistics</p>	<p>Rotating Sample Stage</p>
7.	Samples holder	<p>1. Multi sample holder : 01 (4 or above solid sample holder at a time)</p> <p>2. Amorphous Polymer holder : 06 (3 Double-sided sample holder and 3 Deep sample cups)</p>	<p>1. Multi sample holder : 01 (4 or above solid sample holder at a time)</p> <p>2. Amorphous Polymer holder : 06 (3 Double-sided sample holder and 3 Deep sample cups)</p>
8.	Software:	<p>Software should have a provision for the following: All active operations should be controllable through the software Simultaneous data collection and data processing facility</p> <ul style="list-style-type: none"> Facilities for peak search, peak match, and pattern treatment such as data smoothing, background subtraction, 2θ correction, Klug's Equation (Binary mixture), multiple pattern display $K\alpha_1$ & $K\alpha_2$ calculation and removal, integrated intensity calculation, relative intensity ratio (RIR) quantitative analysis and crystallite size. Crystallography 	<p>Software should have a provision for the following: All active operations should be controllable through the software Simultaneous data collection and data processing facility</p> <ul style="list-style-type: none"> Facilities for peak search, peak match, and pattern treatment such as data smoothing, background subtraction, 2θ correction, Klug's Equation (Binary mixture), multiple pattern display $K\alpha_1$ & $K\alpha_2$ calculation and removal, integrated intensity calculation, relative intensity ratio (RIR) quantitative analysis and crystallite size. Crystallography Open Database (Over 300,000 structures for Search-Match & Rietveld) Size-Strain Analysis

		<p>Open Database (Over 300,000 structures for Search-Match & Rietveld) Size-Strain Analysis</p> <ul style="list-style-type: none"> ○ Scherrer Method ○ W-H plot 	<ul style="list-style-type: none"> ○ Scherrer Method ○ W-H plot
9.	Computer systems:	<p>Computer: Desktop PC with windows 10</p> <p>Interface: Ethernet</p> <p>Necessary software for operation and data acquisition, analysis.</p>	<p>Computer: Desktop PC with windows 10</p> <p>Interface: Ethernet</p> <p>Necessary software for operation and data acquisition, analysis.</p>
10.	X Ray Tube Cooling	Internal water cooling radiator and tank or External Cooling	Internal water cooling radiator and tank or External Cooling
11.	External Chiller:	Compact and suitable Chiller for smooth running of XRD with 3-year warranty or integrated Internal water cooling system is more preferable	Compact and suitable Chiller for smooth running of XRD with 3-year warranty or integrated Internal water cooling system is more preferable
12.	Power Requirement:	100-250VAC, 60 Hz, 10 A, Single Phase and Compatible UPS for Instrument along with all quoted accessories, operation for minimum 15 minutes of back up	100-250VAC, 60 Hz, 10 A, Single Phase and Compatible UPS for Instrument along with all quoted accessories, operation for minimum 15 minutes of back up
13.	Installation and commissioning:	The instrument to be installed tested and commissioned by representative of supplier at our premises to the satisfaction of user free of cost.	The instrument to be installed tested and commissioned by representative of supplier at our premises to the satisfaction of user free of cost.
14.	Training:	The supplier should provide the training on site free of cost.	The supplier should provide the training on site free of cost.
15.	Safety:	<p>The system should be housed in a high safety standard radiation enclosure as per National & international norms</p> <p>Standards</p> <p>Compliant with: CE, ANSI N43.2 or AERB</p> <p>Interlocked enclosure door for auto x-ray off.</p>	<p>The system should be housed in a high safety standard radiation enclosure as per National & international norms</p> <p>Standards</p> <p>Compliant with: CE & AERB</p>
16.	Warranty:	1 year from the date of installation	1 year from the date of installation
17.	Reference Sample:	NIST SRM or LaB6 to be included for instrument verification	NIST SRM or LaB6 to be included for instrument verification
18.	Vendors Requirements:	<ol style="list-style-type: none"> 1. The manufacturer must have successfully installed at-least five similar equipment in the premier institutions of India. 2. The manufacturer and/or their Indian representative should have service center in North India and. In case of breakdown or failure of equipment respective engineer 	<ol style="list-style-type: none"> 1. The manufacturer must have successfully installed at-least five similar equipment in the premier institutions of India. 2. The manufacturer and/or their Indian representative should have service center in North India and. In case of breakdown or failure of equipment respective engineer should attend the issue within 48 hours of intimation

		should attend the issue within 48 hours of intimation	
19.	Optional items		
	XRD Database	ICDD PDF-2 database	ICDD PDF-2 database

i.	Revised date and time for submission of e-tender	: 22.01.2021; 1400 hrs.
ii.	Revised date and time for opening of e-tender (Technical Bid)	: 22.01.2021; 1500 hrs.

All other terms and conditions of the above mentioned e-tender will remain unchanged. Further details and tender document are available on our website www.cujammu.ac.in and <https://cujammu.euniwizarde.com>

Sd/-

Deputy Registrar (GSW)