

CENTRAL UNIVERSITY OF RAJASTHAN



राजस्थान केन्द्रीय विश्वविद्यालय
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CURAJ/Purchase/Tender/2022-23/145/4613

Date : 16-02-2023

CORRIGENDUM

This has reference to the tenders vide Tender No. CURAJ/Purchase/Tender/2022-23/4019 dated 12.01.2023 for the supply & installation of Single Crystal XRD under HEFA Grant at Central University of Rajasthan.

Mode of EMD have been amended as follows:

Mode of EMD: Bidders should send separate Account Payee Demand Draft/ Fixed deposit receipt/ Banker's Cheque /Bank Guarantee from any of the Commercial Banks/ payment online in an acceptable form/ Bid security declaration for EMD (Refundable without any Interest) in favor of "Registrar, Central University of Rajasthan" payable at Kishangarh/ Bandarsindri.

Technical specifications have also been amended for Single Crystal XRD as **Annexure –I**

Bid submission date is extended up to 27.02.2023.

All other terms and conditions will remain same.

Registrar

Revised specifications of SCXRD prepared after pre-bid meeting with the participating companies.

Sl. No	Technical Specifications: the suggest changes are highlighted in red
1	<p>X-Ray generator Technical Specifications: Source type: Mo Kα sealed dual Micro focus X-ray source with Copper & Molybdenum radiation with a power output of 50W or more. Completely Air-cooled/Water-cooled X-ray source (without any external chiller) will be preferred to achieve stable intensity and long tube life with very minimum or no maintenance. Two extra X-ray tubes of each source will be required. Note these tubes will be kept with vendor and request as and when needed. Effective focus size: Not more than 100 μm at the crystal position Brilliance: The minimum beam intensity at the sample should be $\sim 10^{10}$ ph/(s-mm2) or higher at beam Divergence ≤ 7.5 (mrad) for Cu and $\sim 10^9$ ph/(s-mm2) or higher at beam Divergence ≤ 5.0 (mrad) for Mo. Stability: 0.05% or less (under power supply variation, under long-time use). Maximum voltage output: 50 kV (Cu and Mo). Maximum current output: 1 mA (Cu and Mo). System should have software controlled fully automated/manually controlled divergence slit. Beam alignment kit including PIN diode should be provided. Vendor must quote their latest generation X-ray source. The X-ray source(s) should comply with statutory safety regulations. Fully X-ray protected enclosure as per international safety norms. The X-ray sources should be covered by 5 years warranty.</p>
2	<p>X-ray shutter, Rotary shutter Automatic software-controlled wavelength switching of X-ray source target material and focusing optics. Electronically controlled brightness of cabinet and sample lighting. Radiation protection cabinet. Enclosure doors must contain locks to ensure safety and must be linked to the shutter</p>
3	<p>Goniometer Technical Specifications: Type: Kappa, 4-axis goniometer Movement of ϕ, ω, χ, 2θ and the crystal-to-detector distance should Motorized. (In case of desktop beamline type vertical 2θ, χ and the crystal-to-detector distance must be motorized) Crystal-to-detector distance: Minimum of 31mm to Maximum of 240 mm or better. Sample illumination unit must be supplied. Goniometer must be compatible with automated crystal centering with the control software Goniometer with sphere of confusion less than ten micrometer, and telescopic two-theta arm.</p>
4	<p>Video system for crystal viewing Color CCD camera with lens system LCD monitor for crystal display Video crosshair and optical grid for crystal centering and monitoring. LED illumination HD Video quality</p>

	10x Magnification
5	<p>Detector Type: Noise-free, air cooled, high-resolution hybrid photon-counting pixel-array detector or Charge integrating Pixel Arrey Detector (CIPAD) technology based detector. High signal-to-noise detector with wide dynamic range and fast readout. Active Area: Minimum of the order of 77 x 77 mm² or any equally performing detector without compromising data collection time and the quality of the intensity data. Should be tuned to Cu and Mo K alpha radiation. Readout time: continuous readout with less than 14 ms (Must be suitable for shutter-less data collection) / 0 ms (in zero dead-time mode). Power consumption: 70 W. Purging gas: Nil Count rate: >1 x 10⁶ cps/pixel, maximum frame rate: 100 fps. Point-spread function: ≤1 pixel Module cooling: air cooling Pixel size: 135 μm x 135 μm or better. The detector should be covered by five years warranty.</p>
6	<p>Cryo-System Available temperature range: 80K to 400 K (controlled by software) Liquid nitrogen consumption: 0.6 liters/hour at 5 liters/minute gas flow, 1.2 liters/hour at 10 liters/minute gas flow Temperature stability: 0.1K Cool down time to 100 Kelvin: 20 minutes or less than that Auto pressure regulation: Must be there Line dryer units: 2 nos Must include Cryo-stream Controller, Gas Pump, magnetic auto refill system and Dry Air Unit Dewar vessel for Cryo system capacity 60L 1</p>
7	<p>Software The software must be fully automated from data collection through data reduction and processing for small molecule and protein crystallography. The software should be capable of parallel processing with data collection, integration of diffraction and solution of 3D structure. The software should provide fast and fully automatic structure solution and refinement during data collection of small molecules as well as for protein crystals. It should contain options., for instance., reciprocal space viewer, twin indexing, measurement of powder pattern, modulated structure. No public domain software is acceptable. The software should come with a multi-user, multi-site license with free continuous upgrades included as and when it happens. Software to run the goniometer and detector.</p>
8	<p>Microscope for crystal mounting Polarizing optical stereomicroscope with reasonable objectives to facilitate the mounting of micron level crystals. LED LAMP without Shutter and 10X eyepiece. A HD color camera with a minimum 5 megapixel resolution or better.</p>
9	<p>UPS for the entire system Suitable UPS with minimum 1 hours of battery backup must be supplied.</p>
10	<p>PC to control detector and goniometer Technical Specifications: Monitor: 27 inch LED; Intel core i7-8700 RAM: 16 GB Processor: 6 cores with 3.3 GHz clock speed Video RAM: 16 GB (unbuffered) Hard-drive: 256 GB SSD and 2 TB HDD</p>

	<p>DVD reader and writer Operating system: Windows 10 professional with 64 bits a. Multi-purpose (with scanner) Laser color printer b. USB Keyboard c. USB Optical Mouse</p>																																																						
11	<p>Other Accessories and consumables</p> <table border="1"> <thead> <tr> <th>Item</th> <th>Details of Spec</th> <th>Qty.</th> </tr> </thead> <tbody> <tr> <td>Goniometer Heads</td> <td>2 No's</td> <td>3</td> </tr> <tr> <td>Goniometer Base Type B3-R</td> <td>Package of 20</td> <td>1</td> </tr> <tr> <td>Goniometer Base Type B3-R</td> <td>Package of 40</td> <td>1</td> </tr> <tr> <td>Adjustable Crystal Mount</td> <td>5 Pack</td> <td>10</td> </tr> <tr> <td>Mounted Cryo-Loops</td> <td>0.05-0.1mm (18mm, 25 pack)</td> <td>1</td> </tr> <tr> <td>Mounted Cryo-Loops</td> <td>0.1-0.2mm (18mm, 25pack)</td> <td>1</td> </tr> <tr> <td>Mounted Cryo-Loops</td> <td>0.2-0.3mm (18mm, 25pack)</td> <td>1</td> </tr> <tr> <td>Crystal Cap</td> <td>Crystal Cap without Vial (60 pack)</td> <td>1</td> </tr> <tr> <td>Quartz Capillary Size 0.3mm</td> <td>25 pack</td> <td>1</td> </tr> <tr> <td>Quartz Capillary Size 0.5mm</td> <td>25 pack</td> <td>1</td> </tr> <tr> <td>Quartz Capillary Size 0.8mm</td> <td>25 pack</td> <td>1</td> </tr> <tr> <td>Parabar 10312 100ml</td> <td>Oil Based Cryoprotectant</td> <td>3</td> </tr> <tr> <td>Combo Oil Pack (Parafii, Al's, & Silicon oil)</td> <td>250ml of each</td> <td>5</td> </tr> <tr> <td>Capillary Sealants : Duco cement 29.5ml</td> <td>Duco Cement</td> <td>1</td> </tr> <tr> <td>Capillary Wax</td> <td>40 G pack (Approx)</td> <td>2</td> </tr> <tr> <td>Four Colour Mounting Clay</td> <td>16oz pack each color</td> <td>5</td> </tr> <tr> <td>Test Crystals</td> <td>1</td> <td>1</td> </tr> </tbody> </table>	Item	Details of Spec	Qty.	Goniometer Heads	2 No's	3	Goniometer Base Type B3-R	Package of 20	1	Goniometer Base Type B3-R	Package of 40	1	Adjustable Crystal Mount	5 Pack	10	Mounted Cryo-Loops	0.05-0.1mm (18mm, 25 pack)	1	Mounted Cryo-Loops	0.1-0.2mm (18mm, 25pack)	1	Mounted Cryo-Loops	0.2-0.3mm (18mm, 25pack)	1	Crystal Cap	Crystal Cap without Vial (60 pack)	1	Quartz Capillary Size 0.3mm	25 pack	1	Quartz Capillary Size 0.5mm	25 pack	1	Quartz Capillary Size 0.8mm	25 pack	1	Parabar 10312 100ml	Oil Based Cryoprotectant	3	Combo Oil Pack (Parafii, Al's, & Silicon oil)	250ml of each	5	Capillary Sealants : Duco cement 29.5ml	Duco Cement	1	Capillary Wax	40 G pack (Approx)	2	Four Colour Mounting Clay	16oz pack each color	5	Test Crystals	1	1
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12	Power Supply – Single phase or three phase as per Indian power supply.																																																						
13	User List – Manufacturer should have supplied at least 3 systems in India for similar configuration with single target or dual target.																																																						
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	<p>Installation and demonstration at site with operational training for a period of one week. Additionally, one week dedicated application training by application specialist from the manufacturer facility has to be provided. One technically trained person is required continuously for one year for operating the instrument.</p>
15	<p>Warranty 03-years OEM default warranty from the date of successful installation. Two years' additional comprehensive warranty to be quoted. The warranty should be in comprehensive manner means that it covers the whole system, including all accessories and spare parts, etc. All accessories/spare parts replaced shall be from OEM/supplier of same model or higher version. If within a period of 5 years after commission, any accessory/spare part is proved to be defective then such product shall be replaced by the manufacturer/supplier. Such replacement shall be the sole obligation of the manufacturer/supplier, including payment of charges for freight delivery, custom duty and transportation, if any for CURaj. In case of system breakdown during the warranty period, a competent/suitable Service Engineer of the supplier should make as many visits as are required to rectify the problem and replace the faulty parts, without any liability of cost to CURaj . Service response time must be within 3-5 working days for small issues and within 10-14 working days for major breakdown/hardware changeover; otherwise, the warranty period shall automatically be extended by the time taken to rectify the defects. The two maintenance visits every year (within the warranty period) by authorized service engineers are required. After completion of 5 Years comprehensive warranty the OEM/supplier should provide 5 Years of AMC.</p>
16	<p>CSD: Single user latest Crystal Structure Database (CSD) with at least three years license have to be offered.</p>
17	<p>Service facility in India: Supplier should clearly demonstrate the service set up in India for prompt service support along with number of service engineers specially trained on the offered system. The service must be very prompt in case of any problem regarding the SCXRD.</p>
18	<p>Air Condition: Two 1.5 TON Split AC including installation has to be quoted (locally).</p>
19	<p>Installation in India: Detailed lists of Indian users for SCXRD system and list of SCXRD machine installed in last financial year.</p>
20	<p>Manuals /Circuit-Diagrams and Instruction Sheets Manuals / Circuit-Diagrams and Instruction Sheets: All the manuals including circuit Diagrams and instruction sheets must be supplied in English for service engineer's reference. The offered SCXRD system model should preferably comply with the latest machinery directive, for electrical equipment and electromagnetic compatibility under fully CE compliant guidelines (or equivalent).</p>