INFORMATION BOOKLET

ON

QUOTATION CALL NOTICE

WORLD BANK FUNDED (OHEPEE)

(CENTRAL INSTRUMENTATION FACILITY)

(Ref: 3175/Dev-I, Dated: 01.06.2023)

SAMBALPUR UNIVERSITY

JYOTI VIHAR, BURLA-768 019, ODISHA

Ref. No. 3175/Dev-I ***Dated: 01.06.2023***

QUOTATION CALL NOTICE

Sealed quotations in duplicate are invited from the interested Manufacturers/Authorized dealers/Registered firms to supply the following items for the World Bank funded (OHEPEE) CIF to the Sambalpur University, on 'FOR' destination basis. The last date of submission of quotation is 30.06.2023**.** Valid copy of VAT/PAN/GST No. and a bank draft of 2.0% of the quoted price as EMD, drawn **in favor of COF SU OHEPEE** of any nationalized bank **payable at State Bank of India, Jyoti Vihar Branch, Burla, code No.6672.** The EMD should be enclosed along with the quotation; otherwise, the quotations will be rejected. The Registrar reserves all right to reject any or all quotations without assigning any reason thereof.

Terms & conditions:

1. The quotation shall be submitted with technical specifications and quoted price in a sealed cover. On the top of the envelope please mention **"OHEPEE- CIF- instrument name"**, for which quotation is being submitted in bold.
2. The sealed quotations will be received up to 4.00 P.M. on all working days upto 30.06.2023 by speed post / registered post only at the **Deputy Coordinator, IDP-OHEPEE, Development Section-I, New Administrative Building, Sambalpur University, Jyoti Vihar-768 019, Sambalpur, Odisha.**
3. The suppliers must be either the manufacturer of the instruments/equipment or the authorized agent/representative of the manufacturer. In the case of agent/representative, certified valid copy of the agency/authorization issued by the manufacturer should be enclosed with the quotation.
4. In the event of any item being available on Rate Contract, the quotation for that item shall not exceed the Rate Contract approved by DGS & D (GoI). The existence, price and terms and conditions of all Rate Contract items shall be disclosed by the tenderers.
5. The quotation should include apart from the price of the instruments/equipment –
   a) Warranty period details (extended warranty period separately).
   b) The cost of recommended essential spares.
   c) List and cost of consumables/standards etc., required from time to time with all necessary details.
   d) AMC after warranty period (to be shown separately).
6. **The rates/price should be quoted in the currency of the country where the instruments/equipment is manufactured or Indian currency (Indian currency is preferred)**.

7. Delivery of the instruments shall be at the "Central Instruments Facility Centre", P.G. Department of Biotechnology & Bioinformatics, Sambalpur University, Jyoti Vihar-768 019 unless otherwise specified. **The price shall be inclusive of all taxes, transportation cost and cost of installation/commissioning, trial operation, comprehensive training and clearance charges (FOR Sambalpur University, Jyoti Vihar).** Necessary documents for clearing the consignment through customs authorities will be provided by us and the supplier or agents of manufacturer arrange the clearance of the consignment on payment basis. **Sambalpur University is granted with DSIR certificate for customs and central excise duty exemption**.

8. The successful tenderer should supply the instruments/equipment within a period of 12-16 weeks from the issuing date of purchase order by the COF, Sambalpur University.

9. **100% advance payment will be made against proforma invoice and Bank guarantee of 20% of the quoted value. The Bank guarantee will be released after the successful installation of the equipment.**

10. The EMD of the successful tenderer will be refunded after completion of the supply and installation of the equipment to the satisfaction of the Deputy Coordinator, IDP, Sambalpur University.

11. Documents such as instrument operation, calibration, maintenance, drawing, descriptive literature etc., if any, along with original instruction and data analysis manual should be supplied by the successful tenderer along with the equipment.

12. Instruments/equipment should be unpacked in the presence of the Deputy Coordinator, IDP, Sambalpur University. The consignment will be accepted only after inspection.

13. Inspection certificates of the instruments / equipment inspected by the qualified engineer of the manufacturer and packed in accordance with the terms and conditions of this order must be enclosed.

14. During the warranty period or later whenever the firm is called upon to attend to the rectification of the defects/faults in the consignments, the firm shall attend to the repair work within 48-96 hours. They should render timely back up service whenever called upon. **A certificate to the effect should be attached to the tender**.

15. **A certificate to the effect that instruments/equipment supplied is fully operational and no additional accessory or spare is required to make the instruments/equipment run should be issued along with the delivery challans/invoice**. The Deputy Coordinator, IDP, Sambalpur University reserves the right to refuse payment in the event of not furnishing this certificate at the time of supply.

16. The Registrar, Sambalpur University reserves all the right to accept/reject any tender without assigning any reason thereof.

17. **Once the rate is approved by purchase committee, supply order is placed on the successful tenderer for supply of the equipment/instrument.** The decision of the Purchase Committee shall be final and binding.

18. All disputes subject to Court of Law in the jurisdiction of Sambalpur.

P.T.O

List of equipments and their specifications

(1) Scanning Electron Microscope with LN2 free energy dispersive x-ray spectroscope (EDS) and Sputter Coater:

Detailed Specifications:

1. Electron Source	Factory Pre-Centered Tungsten filament. The source alignment should be automatic.
2. Resolution	Should be 3 nm or better at 30kV, 15 nm or better at 1 KV; in High Vacuum mode and 4 nm or better at 30 KV in Low Vacuum mode with factory Pre-centered Tungsten Filament.
3. Accelerating Voltage	0.5KV to 30KV, with incremental step of 10 volts for the entire range.
4. Displayed Magnification	Should be Minimum 5x to 3,00,000 x or higher and continuously variable.
5. Vacuum System	Should give Fast vacuum using air cooled Turbo Molecular Pump/ Diffusion Pump. Safety measures for electron column against any vacuum failure. Low Vacuum pressure should be extended up to 100 Pa or higher for biological / non-conductive specimen observation.
6. Electron-Optics	The SEM should be equipped with suitable Condenser lens and Objective lens. The system should have adjustable aperture from outside for both imaging and analysis purpose. The analytical working distance should be 8.5mm or better to enhance the X-ray signal collection by EDS.
7. Stage Specification	5 axis Motorized- Eucentric Stage (over entire working distance and Tilt). Movement facility are as follows: • X = 80 mm or higher, Y = 40 mm or higher, Z = 48 mm or higher, Tilt = -10 ° to +90°, Rotation = 360° (continuous). Facility to accommodate multiple specimens should be provided.
8. Specimen Chamber Specification	• Large Specimen Chamber with internal diameter 150 mm and height 48 mm or more. • Minimum number of spare ports in the chamber should be 5 for integrating accessories & detectors in future. • Sample size: 150 mm in diameter or better.

	• Sample height: 48 mm or better.
9. Detectors & Scanning Parameters	1. Secondary Electron Detector & Backscattered Electron Detector 2. Facilities for Scanning control, Image Storage, Image Processing and Detector control 3. Auto gun control and gun alignment, auto bias and auto saturation of gun condition. 4. Automatic / manual control of other features like focus, brightness and contrast etc. 5. Precision Zoom Condenser Lens should be offered as standard. 6. Zeromag function should be quoted as standard for seamless transition from optical image to SEM image.
10. Image display & Processing	1. 23 inch LCD or higher 2. Noise reduction by average or integration method
11. Image format	BMP, JPEG or TIFF
12. Integrated Computer Environment Operating System	High-end Computer system with CPU Minimum Intel Core i7 or better 11th Gen or better, and Hard disk (1TB or more) and CD/DVD writer drive, UPS. Licensed Microsoft Windows 11 or higher, 64-bit based, Mouse / Keyboard control, Multi Touch Screen mode should be provided for easy and fast operation.
	Fully mobile and Touch Screen SEM and can be moved by operator from one location to another.
13. SEM System Disk Drives	Hard disk, Mouse & Key board system control etc
14. Software	Complete software for the SEM and related accessories for data acquisition, analysis and interpretation should be included in the system configuration.
15. Digital Store	Excellent image storage capability with resolution 1280x960 pixels or better. Total Wireless Control through Ipad / remote PC Touch Panel Control system
16. LN2 Free EDS (Energy Dispersive X-Ray Spectrometer)	Advanced Liquid Nitrogen (LN_2)-free SDD type Energy Dispersive Spectroscopy system with suitable window for low energy X-ray transmittivity and must be compatible with the SEM system: Liquid Nitrogen free integrated Peltier cooling system, LN2 free detector, active detector area 60 mm^2 or higher with 133 eV resolution, must have mapping, quantitative, qualitative analysis. The EDS should detect energy of element starting from B (5) to U (95). Complete with hardware and software. Real Time Display of EDS during high

	magnification observation should be quoted as standard. A software package for fast and accurate elemental analysis with an easy-to-use user interface for EDS data collection and analysis, software functions like point ID, mapping, Line Scan, Multi point analysis must be provided. Single GUI for SEM and EDS for easy, smooth, and fastest operations.
17. Sputter Coater	1) Sputtering method should be Two -pole horizontal electrode discharge with Magnetron Sputtering. 2) Pressure should be at least 4 PA or less. 3) Chamber Size: at least 86 x 100 mm, should be with a hard glass made chamber cover for safety. 4) Target size: 49.5 (OD) x 0.1 mm (T). Target electrode 20 mm. (OD) 5) Specimen Stage Size: at least 70 mm or higher and Specimen size at least 40 mm x 30mm or higher. 6) Specimen stage height must be adjustable to the target. 7) Evacuation speed at least 30 L/ min.
18. Accessories and Consumables for SEM:	
1. Adhesive Carbon Tape – 05 rolls, 2. Specimen stub: 20 nos 3. W Filaments for SEM – 36 nos 4. Desiccator for reducing moisture in vent air: 1 no. 5. Multiple specimen holder: 1 no. 6. Joystick for stage control: 1 no. 7. Control Panel for controlling important SEM parameters like magnification etc.: 1 no. 8. Online UPS with at least 30 min Battery Backups.	
19. Pre-Installation requirement	Pre-installation details, such as, room, floor plan, size, electrical requirement, EM field & vibration levels etc. should be sent immediately after the placement of the order and the installation site should be surveyed physically to check its suitability by the vendor. A copy of the pre-installation requisites should be enclosed along with the technical bid. Necessary environmental requirements, i.e., temperature, humidity etc. during the operation (and unused hours) of SEM & EDS should be specified clearly.

20. Installation, Commissioning & Training	The installation, commissioning and demonstration of complete system should be carried out by the supplier at free of cost. After successful installation and commissioning, on-site operational training for the deputed personnel to be provided for required days (at least one week) at no additional cost.
21. Service Facility	The supplier must have sufficient nos. of service engineers in India and in East region as well to provide prompt service.
21. Warranty	The entire system should be covering One Year of Comprehensive warranty from the date of installation and commissioning of the equipment (the date after completion of training).
	Provide charges for 4 years AMC in the quotation (additional)
22. Price	The price should be FOR Sambalpur University, Jyoti Vihar, Burla.
Documentation:	All the operation and maintenance/repair manual, application notes are to be provided with supply.
Detailed lists of users in India with contact details.	

(2) Non Cryo Bench Top Nuclear Magnetic Resonance spectrometer

Detailed Specifications

Magnet	Permanent Magnet - should work without cryogens/air compressor
Operating Frequency	80 MHz or higher
Nuclei:	1H, 19F, 13C, as a standard in single probe, no probe changes over desired.
Sensitivity:	S/N: 280:1 or better for 1% ethyl benzene
Resolution:	Less than or equal to ≤ 0.4 Hz at FWHM (full width at half maximum)
Magnetic Field Strength:	1.9 Tesla or better
Lock:	Deuterium & non-deuterium options with solvent suppression
NMR experiments:	1D, homo- and hetero-nuclear 2D experiments, including COSY, NOESY, HSQC, APT etc
Software:	System should be supplied with data acquisition software and processing software
Sample Tube:	5 mm o.d. NMR tubes with a length of at least 7 inches (100 nos.)
Accessories for Operation:	Branded Desktop computer with Intel i5 processor or higher, 1TB hard disk or higher, 22" LED monitor or higher, 8GB RAM or higher with Keyboard, Mouse, and other accessories. Branded B/W Laser Jet Printer. 5KV UPS with 20 minutes Back up.
Warranty:	The entire system should be covering One Year of Comprehensive warranty from the date of installation and commissioning of the equipment (the date after completion of training).
	Provide charges for 4 years AMC in the quotation (additional)
Training:	Operation, maintenance and software training related to NMR and other facilities to be arranged at our site after installation.
UPGRADABILITY:	Should be upgradable to Online reaction Monitoring and Autosampler with at least 18 sampling positions.
Price	The price should be FOR Sambalpur University, Jyoti Vihar, Burla.
Documentation:	All the operation and maintenance/repair manual, application notes are to be provided with supply.
Pre-installation requirement	Pre-installation requirement should be provided in detail.
Detailed lists of users in India with contact details.	

(3) Particle Size & Zeta Potential Analyzer.

Detailed Specification

Instrument type and Parameters to be measured	Particle Size, Zeta Potential, Molecular Mass, 2nd Virial coefficient, Transmittance Refractive Index, Temperature control Range: 0°C - 90°C
Condensation Control	Dry Air/ Nitrogen
Laser Source	Solid state / diode laser source of 658 nm with Laser power 40 mW
Detector	Avalanche Photo Diode Detector
Measurement angles	Multi-angle scattering with minimum three angles for size detection (i) 175 ° for back scattered (ii) 15° for forward angle and (iii) 90 ° for side angle.
Particle Size Measurement Specification	**Measuring Principle:** Dynamic light scattering **Alignment:** Automatic and Manual **Particle size for measurement:** 0.3 nm to 10 µm. **Particle concentration:** up to 50% w/v. **Minimum concentration (Protein):** 0.1 mg/ml(lysozyme) **Minimum Sample volume:** 50µl or low for particle size
Zeta Potential Measurement Specification:	**Measuring Principle:** Laser Doppler Velocimetry with the Electrophoretic Light Scattering using Continuously monitored Phase Angle Light Scattering **Measuring Angle:** 15° **Sensitivity:** 0.1mg/ml (lysozyme) **Maximum sample conductivity**: 200 mS/cm or higher **Zeta potential Size range**: 3.8 nm to 100 µm or better **Zeta potential range**: ±1000 mV or higher **Maximum sample concentration**: 70% w/v or better **Minimum sample volume**: 50 µL or less for zeta potential **Cuvette Type**: Disposable, reusable and organic solvent compatible
Molecular Mass Measurement Specifications	**Measuring Principle**: Static Light Scattering **Molecular-mass range**: 980 Da – 20 MDa or better **Sensitivity:** 0.1mg/ml (lysozyme) **Measuring Angle:** 90°
Transmittance Measurement	**Size Range:** No limit **Measuring time:** 10 s **Min Sample Volume:** 50 µl
Refractive Index	**Measuring range:** 1.28- 1.50 **Accuracy:** +/- 0.5 % or better **Min Sample Volume:** 1 ml
Software Specifications	Up gradation of software: Free of Charge through the life of the Instrument. Operating Software: The software should be capable to handle Instrument operation & Instrument data.

Standard Supply with Instrument	For particle size: 100 Nos of disposable type 1 Nos of Glass/Quartz Cuvettes for organic solvent Standard – 1 No 220 nm NIST traceable standard For Zeta Potential: 10 Nos of Reusable type for aqueous base samples Cuvettes should be compatible with high concentration samples, otherwise 5 Nos of special cuvettes should be supplied with system Cuvette for the organic sample zeta potential analysis. Standard – 1 No Zeta potential reference For Zeta & Size both in a single cuvette without changing the sample 1 Nos of low volume min 50 micro Quartz Cuvette for organic sample without changing the sample for Size & zeta analysis
PC & Printer:	I3 SPECIFICATION 4gb ram, 500gb hdd, win7, 18.5" LED Display, 3 year warranty (or Equivalent) & Black & White Laser Jet printer – 1no. each
Future Up gradation:	Titration/Dosing System Accessories for the automatic pH titration with the system
Warranty:	**3 years warranty from the date of installation.**
Training:	Operation, maintenance and software training related to particle size analyser and other facilities to be arranged at our site after installation.
Documentation:	All the operation and maintenance/repair manual, application notes are to be provided with supply.
Pre-installation requirement	Pre-installation details, such as, room, floor plan, size, electrical requirement should be sent immediately after the placement of the order and the installation site should be surveyed physically to check its suitability by the vendor. A copy of the pre-installation requisites should be enclosed along with the technical bid.
Price	The price should be FOR Sambalpur University, Jyoti Vihar, Burla.
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Registrar