COTTON UNIVERSITY

Panbazar, Guwahati- 781001

Notice Inviting Bids

" NIB No. CU/S&P/2026/02 Dt. Feb 02, 2026 "

Bids in sealed cover are invited from Original Equipment Manufacturers (OEMs) or their authorized dealers/suppliers/vendors or business partners in dual-bid {techno-commercial and financial} system with respect to procurement of Major Lab Equipments under **ANRF_PAIR Project of CU.** The deadline for the same is 5:00 P.M. of February 20, 2026. For details, please visit www.cottonuniversity.ac.in

S/d, Registrar,i/c

Registrar i/c
Cotton University
Panbazar, Guwahati- 781001, Assam

COTTON UNIVERSITY

Panbazar, Guwahati-781001, Assam, India

www.cottonuniversity.ac.in :: 0361-2601100/2733530 :: registrar@cottonuniversity.ac.in

Notice Inviting Bids

" NIB No. CU/S&P/2026/02 Dt. February 02, 2026"

Bids in sealed cover are invited from Original Equipment Manufacturers (OEMs) or their authorized dealers/suppliers/vendors or business partners in dual-bid {techno-commercial and financial} system with respect to Procurement of Major Lab Instrument/Equipments under **ANRF_PAIR Project** of Cotton University.

The bidding document pertaining to this notice, must be downloaded from the University's website i.e. **www.cottonuniversity.ac.in.** The sealed cover must be super-scribed as **"Procurement of Major Lab Instrument/ Equipments under ANRF_PAIR Project of Cotton University :: NIB No. CU/S&P/2026/02 Dt. Feb 02, 2026"** and addressed to **"The Registrar, Cotton University, Guwahati-781001, Assam".** The sealed cover containing the bid must be submitted during office hours **on or before 5.00 P.M. of Feb 20, 2026** in the **drop-box** arranged for the purpose. Bid opening might be done on the next working day in presence of the bidders, which will be intimated accordingly.

Hiren Deka 03/2/26
(Dr Hiren Deka) Registrar i/c
Registrar,i/c Cotton University
Panbazar, Guwahati- 781001, Assam

Memo No. CU/S&P/2025/31/ 1470-76 Dated 03/02/26

Copy for information and necessary action to:

1. The Director, Directorate of Information and Public Relations, Government of Assam; is requested to arrange for publication of the abstract ad {soft copy enclosed} of this notice in the immediately next issue of *'The Assam Tribune'*, and *'Amar Asom'*, as well as submit the invoice in triplicate format for claiming the release of payment
2. The P.S. to the Vice Chancellor, Cotton University
3. Dr. Abdul Wahab, Principal Investigator(PI) of **ANRF_PAIR Project** ,Cotton University.
4. The Finance Officer, Cotton University
5. The Systems Manager, Cotton University; is requested to arrange for uploading/posting of this bidding document in the University's website
6. The University's notice board
7. The office file concerned

Hiren Deka 03/2/26
(Dr Hiren Deka) Registrar i/c
Registrar,i/c Cotton University
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1. **Terms and Conditions:**

The following terms and conditions, which are the minimum criteria for this bid, shall apply herein:-

1.1. The sealed cover must be submitted in **two separate, sealed sub-envelopes** clearly super-scribed as:

i. **'Techno-commercial Bid',** consisting of documents, testimonials, etc. pertaining to all technical specifications/ details of item(s) in addition to commercial terms and conditions as well as other requisite compliances; and

ii. **'Financial Bid',** indicating per unit base rates, per unit prices, total prices and value of the items listed in the Techno-commercial Bid.

1.2. The **two separate, sealed sub-envelopes** mentioned in Clause 1.1 are required **to be placed inside a bigger sealed envelope** clearly super-scribed on the top of the same as **"Procurement of Major Lab Instrument/ Equipments for ANRF PAIR Project of Cotton University :: NIB No. CU/S&P/2026/02 Dt. Feb 02, 2026".** The **name and address of the bidder** along with **valid contact number(s)** must be mentioned **on each of the envelopes.** The **bigger sealed envelope** which is required to be **addressed to** "The Registrar, Cotton University, Guwahati-781001, Assam" must be **submitted** during office hours **on or before 2:00 P.M. of Feb 20, 2026 in the drop-box** arranged for the purpose.

1.3. **Techno-commercial Bid opening and evaluation** might be done on the in presence of the bidders. **Financial Bid of only the techno-commercially acceptable offer(s) shall be opened** for the purpose of evaluation. In case the Techno-commercial Bid evaluation remains incomplete that day, then the date and time of Financial Bid opening shall be intimated to the shortlisted bidder(s) separately.

1.4. **In case** the **date of bid submission** is declared a **holiday** by any jurisdictional authority, the **following working day** of the University shall be **treated as due date** for bid submission. The **bid received after due date and time or without sealed cover or in torn condition** shall be treated **as 'unresponsive' and disqualified,** and shall **not be entertained under any circumstances whatsoever.**

1.5. Going forward, any **addendum, corrigendum, notice of date extension, etc.** shall be **posted on the University's website** only. As such, it is in the bidder's interest to stay alert regarding such postings.

1.6. **All bids** received shall be **opened, scrutinized and evaluated by a committee constituted for** the purpose of **selection and recommendation** with respect to **Award of Contract (A.O.C.)/ Purchase Order (P.O.).**

1.7. **Evaluation of bids** shall be done **separately for each item/ category of items on the basis of the respective lowest offered per unit base rates, per unit prices, total prices and value or some other appropriate criterion/parameter adopted by the committee** constituted for the purpose.

1.8. **All pages** of the bidding document and supporting materials, annexure/enclosures etc. must be **sealed and signed** by the bidder or their authorized signatory. **All entries** by the bidder must be **legibly written.** Any **over-writing, corrections and cuttings** must bear **initials of the authorized signatory.** Ideally, **corrections** must be made **by writing again instead of 'shaping' or over-writing.**

1.9. An offer of **Replacement Guarantee encompassing immediate replacement of the 'to be supplied' item(s) against defects of manufacturing/ workmanship/ mishandling during storage and transit etc.** must be provided by the successful bidder.

1.10. An offer of **On-site Comprehensive Warranty for a period of at least three (3) years [from the date of installation {and commissioning, if applicable} of the lab equipment]** must be provided by the successful bidder.

1.11. The **University reserves** the **right to call for any information and record** as well as **inspect the premises** of any or all of the bidders, **before as well as during award of the supply contract/ Purchase Order (P.O.) and subsistence of the warranty period.**

1.12. The University shall **deal with the representative(s) of the Original Equipment Manufacturer (OEM) or their authorized dealer/supplier/vendor or business partner directly,** and thus, **no other commission agents, middle-men, etc.** must be asked or encouraged by the bidder to represent their cause.

1.13. The bidder submitting their bid shall be **deemed to have read and unconditionally accepted all the terms and conditions** stated herein. Therefore, **counter-conditional bids shall be summarily rejected.**

1.14. **No correspondence** shall be entertained in respect of acceptance or rejection of bid.

1.15. **Unit rates, total prices, and value** in the **Financial Bid** must be **quoted in Indian currency, i.e. Indian Rupees (INR)** only.

1.16. **On-site delivery, on-site installation {and commissioning, if applicable} of the lab equipment** [besides any **on-site training {if necessary}**] must be done by the authorised representative(s) of the **Original Equipment Manufacturer (OEM) or their authorized dealer/supplier/vendor or business partner** entirely **at their own risk** and **free-of-cost** in their presence and **to the satisfaction of the authorized personnel of the University.**

1.17. The successful bidder must **deliver** the **ordered item(s)** at the **Cotton University** or **any other site(s) to be finalized in due course of time** by the authorized personnel. **Besides,** the former must also **collect item(s) for return,** if any.

1.18. The successful bidder must **provide adequate and prompt after-sales service and support, whenever and wherever called for at the designated site during such time in the day as may be specified for that particular place from time to time** which shall include **all working days/ shifts and even on holidays. Apart from delivering the required services,** as and when called for, the bidder must **discharge any other duties,** which in the opinion of the University are **within the scope of work** of the bidder, and that such duties must be carried out **with due diligence and care.**

1.19. The successful bidder must **not divulge any information, confidential or otherwise,** that he may come across. The **authorized** representative(s) of the bidder shall be granted **access/permission by the University to enter the premises only for the purpose of carrying out the contractual obligations in respect of the supply contract/ Purchase Order and not for any other reason or purpose. Prior permission from the authorized personnel of the University** must be obtained by the authorized representative(s) of the bidder in the event of them being required **to remain on the University premises beyond the stipulated time and/or on Sundays and fixed public holidays** for whatsoever reasons.

1.20. The **successful bidder and their representative(s)** shall be **liable to be dealt with suitably** in the event of **infringement of any law.** Any **financial liability arising on the University** shall be **deducted from the invoice of the bidder.**

1.21. If **any damage** is caused **to persons and/or property of the University** by the successful bidder or its personnel deployed in the University's premises in the course of execution of task/assignment under the supply contract/ Purchase Order, then the **bidder shall** be liable for the same and that they shall **indemnify the University** against such damages. The bidder shall also **render all assistance and cooperation** to the University in the event of any **inquiry relating to any such incident or accident.**

1.22. **No advance payment** shall be made to the successful bidder. **Payment** shall be made only **after due scrutiny, verification and certification** by the **authorized personnel of the University** who shall necessarily be officer(s)/official(s)/end user(s) designated by the University for the purpose regarding the successful execution of the allotted task/assignment by the authorized representative of the bidder.

1.23. The successful bidder shall **not delegate or sublet/subcontract the supply assignment or any part thereof to any other entity/company/agency/contractor/supplier/vendor or business partner** without the prior written consent/approval of the University; and such **consent, even if provided,** shall **not relieve the bidder from any liability or any obligation** under the supply contract/ Purchase Order.

1.24. **Statutory levies and taxes,** as applicable from time to time, might be **deducted at source** {as Tax Deducted at Source (TDS)} **from the invoice** of the successful bidder at the time of settlement of the same **unless the bidder produces a certificate {from the Income Tax authorities} to the contrary.** TDS certificate, wherever applicable, shall be issued by the University to that effect. Taxes, as applicable, shall be paid as per rules.

1.25. The successful bidder must **observe all the laws** and be **solely responsible for any prosecution or liability arising from breach** of any of those laws. The bidder must be **responsible for compliance with all central and state laws as per rules/ regulations/ bye-laws/ orders of the local authorities and statutory bodies** as may be in force from time to time **during the subsistence of the supply contract/ Purchase Order (P.O.) and period of warranty.** The bidder must **also indemnify the University and its officer(s)/official(s)/end user(s) from any claim or consequences/damages for any lapse or non-compliance** thereof. **If,** at any point of time, it is **found that** any type of **liability/ responsibility** has been **fixed on the University or its employees by any government or local body/authority** with respect to the **contract/ P.O.,** then the **total responsibility** must be **borne by the bidder.**

1.26. **Mere submission of the bid** does **not confer any right** on any eligible bidder **for being selected as a successful bidder** and to subsequently obtain the **Award of Contract (A.O.C.)/Purchase Order (P.O.).**

1.27. **Non-conformity** to any of the stipulated **terms and conditions** and/or non-submission of any of the documents/ testimonials/ fees etc., reference of which is made in the **'Enclosures-cum-Checklist' Section, shall amount to the bid being 'incomplete'** thereby **disqualifying the bidder** owing to which their **bid shall not be considered, but instead, summarily rejected** by the bid opening and evaluation committee.

1.28. The **bid shall be rejected if:-**

(i) the authenticity of any of the supporting documents is found to be fabricated or false or untrue or incorrect or forged or deceitful; or

(ii) the bidder is found to have been blacklisted by any government/ non-government organization/ Public Sector Undertaking in the preceding three(3) years; or

(iii) the bidder is convicted, punished, charge-sheeted in a criminal case involving moral turpitude; or

(iv) the bidder tries to canvass the bidding process or influence any official of the University, in any manner whatsoever; or

(v) the bid or any part of it is found to be conditional or contradictory in nature and interpretation.

1.29. **If, at a later date,** it is **found that** any of the **information, documents, testimonials or certificates** submitted by the successful bidder is **wrong/ forged/ fake/ false/ manipulated,** then the **supply contract/ Purchase Order (P.O.)** shall stand **cancelled with immediate effect** and that the **Performance Security money** shall be **forfeited** without any claim whatsoever against the University.

1.30. **Selection shall not *ipso facto* (by itself) confer any right** on the successful bidder **to receive the Award of Contract (A.O.C.)/ Purchase Order (P.O.)** from the University and that it **shall in no way guarantee or ensure allotment of task/assignment.** The University reserves the **right to procure the goods from any other reliable entity/company/agency/contractor/supplier/vendor or business partner which might not be selected** as per this or any other bid.

1.31. The University reserves the **right to cancel the supply contract/ Purchase Order** by giving **a notice in writing without assigning any reason** whatsoever in lieu thereof. Any notice sent by the University to the address recorded in the bidding document of the successful bidder shall be deemed to have been properly served for any of the purposes mentioned herein.

1.32. The **decision** of Cotton University **on all matters connected with or incidental to selection** of supplier(s)/vendor(s) shall be **final and binding on all,** and that it **shall not be called in question on any ground. In case of any ambiguity or dispute that may arise in the interpretation of any of the clauses** in this bidding document, the **interpretation of the Registrar, Cotton University shall be final and binding on all.**

1.33. Cotton University reserves the **right to amend or withdraw any of the terms and conditions and also update/ modify/ relax/ waive/ supplement the minimum criteria/requirements at any point of time.** The University also reserves the **right to accept the offers in full or in parts or reject** the same **summarily or partly.** Additionally, the University reserves the **right to accept, consider or reject any or all of the offers without assigning any reason** in lieu thereof.

1.34. **The Registrar, Cotton University or any officer/official authorized** by the University, shall have the discretion to **review or ascertain and enforce due and proper observance of the laws, rules and regulations.** The **officer(s)/official(s) so authorized** by the University, or **the Registrar,** may **by himself, investigate into any complaint** in the case of any default on the part of the successful bidder vis-à-vis terms and conditions of the bid. **No bidder** shall be allowed **to be represented by any legal expert during** the course of any **mutual discussion, consultation, investigation, enquiry, appeal or any other proceeding** conducted by or before any officer/official of the University against the bidder.

1.35. In the event of any **ambiguity or dispute or difference between the parties involved** relating to or concerning the **interpretation of the supply contract/ Purchase Order** or any **alleged breach** thereof or any **matter relating to the contract or the bid,** the **same shall be settled** by the parties concerned, as far as possible, **by mutual discussions and consultations** between themselves. The dispute shall be so settled only when the same has arisen during or after the placement of the Purchase Order (P.O.) and/or during subsistence of the supply contract or its period of warranty; and

that the **decision taken by the Registrar, Cotton University** shall be **final and binding** on all parties concerned.

1.36. The **law of the land shall apply** to the supply contract(s)/ Purchase Order(s) arising out of this bid. **All disputes** in this connection and all matters arising out of the same shall be **settled** exclusively **in the courts falling under the jurisdiction of Kamrup Metropolitan district authority.**

Registrar i/c
Cotton University
Panbazar, Guwahati- 781001, Assam

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2. Enclosures-cum-Checklist:

❖ **Documents etc.** which must be placed **inside** the sub-envelope titled **'Techno-commercial Bid'** are:

i) Copy of **Proprietary Article Certificate (PAC)** or valid **Letter/Certificate of Authorization/ Dealership** or **Manufacturer Authorization Form (MAF) issued by Original Equipment Manufacturer (OEM)** exclusively against this particular bid number

ii) Copy of OEM's **Product Brochures/ Technical Literatures regarding the offered products** which include detailed specifications, images, sketches, diagrams, test reports, energy ratings, etc. as applicable

iii) **Statement/Table indicating Technical Compliance** stating the **University's required items' specifications** ***vis-à-vis*** the **bidder's offered items' specifications** in the letterhead of the bidder

iv) Copy of the **Certificate of Registration pertaining to GSTIN and document(s) indicating up-to-date GST filing, if any.**

v) Copy of **document(s) indicating Income Tax Returns (ITR) filing for last 02 Financial Years**

vi) Copy of **documents/testimonials [set(s) of purchase orders along with delivery challans and installation reports/certificates] indicating previous work experience of having supplied similar equipment to government or semi-government organisation(s)/ higher educational institute(s) of repute situated in north-eastern region of India, if any.**

Technical Specifications:

i. **Modular Photoluminescence Spectrophotometer**, Annexure -1
ii. **400 MHz NMR Spectrometer**, Annexure -2
iii. **ICP-MS with IC System**, Annexure- 3

❖ **Document** which must be placed **inside** the sub-envelope titled **'Financial Bid'** are:

- **'Schedule of Prices'** .

Name of the **Bidder:** .....

Address of the **Bidder:** .....

.....

Contact Number(s) of the **Bidder:** .....

E-Mail ID(s) of the **Bidder:** .....

Type of Business Entity of the **Bidder** *[Proprietorship/Partnership/Company]*: .....

Full Name {in BLOCK Letters} of the **Authorized Signatory**: .....

Full Signature of the **Authorized Signatory** with Date:

Office Seal/Stamp:

iversity
Guwahati- 781001, As

Annexure 1

Equipment name and description: **Modular Photoluminescence Spectrophotometer**

Sl No	Parameters	Required Specifications
1	System	A modular photoluminescence spectrophotometer capable of comprehensive steady-state and time-resolved fluorescence and phosphorescence measurements across the UV–Visible–NIR spectral range. The system should include all essential hardware, software, and interfaces for both manual and electronic operations.
2	**Light Source**	▪ Continuous-wave xenon lamp with output flux equivalent to 450 W xenon source, demonstrated by a water Raman signal-to-noise ratio of ≥ 35,000:1 and by matching or exceeding spectral irradiance at all wavelengths. The lamp shall employ fully reflective optics and include an integrated, factory-matched power (output stability ≤ 0.5 % RMS) supply. ▪ Ozone-free Xenon arc lamp housing, supporting optional extended-UV operation down to 180 nm, without requiring external venting. ▪ Pulsed Xenon flash lamp with integrated power supply and computer-controlled repetition rate of up to ≥ 1000 Hz, delivering optical pulse widths of ≤ 1–3 µs for phosphorescence lifetime measurements spanning the microsecond to seconds timescale. ▪ For fluorescence lifetime measurements: ▪ a) Pulsed laser diodes with repetition rate of ≥ 100 MHz and pulse width ≤ 90 ps, with peak wavelengths at 375 ± 10 nm, 405 ± 10 nm, 450 ± 10 nm, and 510 ± 10 nm. ▪ b) Pulsed LED with a repetition rate of ≥ 25 MHz and pulse width ≤ 900 ps, with peak emission wavelengths at 295 ± 15 nm. ▪ c) Pulsed LED/Pulsed Laser diodes must support software-selectable burst mode, enabling measurement of longer lifetimes using the same source. ▪ d) USB-controlled diode driver/controller with built-in display, supporting interchangeable and hot-swappable pulsed diode heads. ▪ e) Single timing module capable of covering a lifetime range from < 20 ps to > 1 s (detector dependent). ▪ f) Automatic software selection of source repetition rate to optimally match the TCSPC lifetime measurement range.
3	**Excitation Monochromator**	• True double-monochromator design with coma-corrected Czerny–Turner optical configuration • Focal length: 700 mm or longer • Wavelength range: 200 – 900 nm • Wavelength resolution (step size): ≤ 0.01 nm • Compute controlled triple-grating turret with standard grating: 1200 lines/mm, blazed at 300–400 nm • Stray light rejection: ≥ 10^{10} • Motorized and computer-controlled entrance, intermediate, and exit slits (width range: 0.1 – 15 nm or better) • Computer controlled swing mirror for automated source selection
4	**Emission Monochromator**	• Optical layout: Single monochromator, coma-corrected Czerny–Turner configuration • Focal length: ≥ 320 mm • Wavelength range: 200–1700 nm • Wavelength step size: ≤ 0.01 nm

		• Grating turret: Computer-controlled triple-grating turret with two gratings installed • Grating 1 (UV–Vis): 1200 lines/mm, blazed 400–500 nm • Grating 2 (NIR): 600 lines/mm, blazed 900–1000 nm • Stray light rejection: ≥ 10^5 • Slits: Motorized, computer-controlled entrance and exit slits; slit width 0.1–15 nm or better • Detector selection: Computer-controlled swing mirror for automated detector routing
5	**Sample Compartment**	• Optics: All-reflective, mirror-based optical train • Geometry: Provision for T-geometry enabling installation of an additional emission monochromator • Temperature-controlled cuvette holder: Peltier-thermostatted, suitable for TCSPC lifetime measurements: −10 to +105 °C with programmable temperature ramp, fully computer-controlled • Front-face solid sample holder for solids, powders, thin films, etc. • Large enough to hold external optical filters • Gas-purgeable sample chamber (e.g., dry nitrogen) for moisture-sensitive measurements
6	**Detectors**	• Steady-state emission (UV–Vis, 230–850 nm or wider): TE-cooled photomultiplier tube (PMT); cooling setpoint ≤ −20 °C; dark counts ≤ 250 cps • Steady-state emission (NIR, 850–1700 nm or wider): Liquid nitrogen-cooled (77 K) solid-state photodiode or TE-cooled PMT; low-noise preamp included • Phosphorescence lifetime (UV–Vis–NIR, 250–1700 nm or wider): Liquid nitrogen-cooled (77 K) solid-state photodiode or TE-cooled PMT • Fluorescence lifetime (UV–Vis, 230–850 nm or wider): TE-cooled PMT; system IRF ≤ 200 ps • Reference detector for excitation correction: Silicon photodiode (linearity ≥ 0.5%)
7	**Performance**	• Steady-state sensitivity: ≥ 35,000: 1 (FSD) for the Raman band of water *(Excitation: 350 nm; Bandpass: 5 nm; Integration time: 1 s; no averaging; single scan; no optical filters in the beam path)* • Phosphorescence lifetime measurement range: ≤ 10 µs to ≥ 10 s (across 250–1700 nm) • Fluorescence lifetime measurement range: ≤ 20 ps to ≥ 10 µs • All pulsed LEDs and laser diodes must support operation in both TCSPC and MCS modes • Steady-state and time-resolved fluorescence anisotropy measurements must be fully supported
8	**Software and Timing Electronics**	• All necessary software and timing electronics must be supplied to enable full-capability measurement of steady-state fluorescence spectra, fluorescence/phosphorescence lifetime, and steady-state as well as time-resolved anisotropy. • The software must support multi-wavelength time-based acquisition (minimum 10 wavelength pairs simultaneously). • Advanced lifetime analysis, including distribution analysis via MEM and ESM for TCSPC measurements, must be included. • Global analysis, target analysis, and multi-exponential re-convolution fitting must be supported.

		• G-factor correction and depolarization correction must be built-in for accurate anisotropy measurements. • Automatic excitation and emission spectral correction, traceable to NIST standards, must be provided and user-updatable. • Integrated calculators must include: PLQY, FRET efficiency, CIE color coordinates, absorption, 3D EEM mapping for SWNTs/nanotubes and intracellular ion concentration analysis. • The software must allow complete instrument control, performance monitoring, acquisition of spectral and lifetime data, and comprehensive fitting and analysis within an integrated environment.
9	**Polarizers**	Glan–Thompson polarizers (250–2500 nm) must be installed in both the excitation and emission channels for steady-state and time-resolved anisotropy measurements.
10	**Upconversion Accessory**	• Continuous-wave laser (980 nm) source with power modulation control, output variables 0–2 W via an external laser controller. • Supplied with all necessary mechanical adapters, optical mounts, and interface fittings for direct installation at the front plate of the fluorimeter sample compartment. • Must include an integrated hot mirror and appropriate optical safety and rejection filters. • Laser should support both steady-state mode and pulsed mode operation through software. • Provisions for future upgradability with different wavelength lasers must be included.
11	**Photoluminescence Quantum yield (PLQY)**	• Suitable for measuring PLQY of solids, liquids, powders, and thin films. • Minimum 3-inch diameter integrating sphere. • Easily removable top cover for sample exchange without disassembly of the sphere. • Designed for direct installation inside the sample compartment, without requiring external optical fiber connections. • Pre-aligned, snap-on/snap-off mounting for quick and tool-free attachment.
12	**Fluorescence Lifetime Attachment**	All essential components for fluorescence lifetime measurements covering a range from 20 picoseconds or below up to the microsecond scale.
13	**Phosphorescence Lifetime Attachment**	All essential components for phosphorescence spectra and lifetime measurements covering a range from 10 microseconds or below up to several seconds.
14	**NIR Emission Attachment**	All essential components for NIR emission measurements extending up to 1700 nm or beyond.
15	**Essential Accessories**	• Peltier thermostatted cell holder (–10 °C to 105 °C) • Front-face solid sample holder • Glan–Thompson polarizer (200–2500 nm) • Integrating sphere (200–2500 nm) • 980 nm upconversion measurement accessory • Xenon arc lamps for steady-state measurements – 2 units • Fluorescence quartz cuvettes with lid, 3 mL – 2 units • Fluorescence quartz cuvettes with lid, 1 mL – 2 units • Long-pass filter set (UV–Vis–NIR range), 7 Nos. with cut-off wavelength (±10 nm) at 285, 395, 515, 610, 725, 830, and 1000 nm

		• Neutral density filter set, 6 Nos. with ODs 0.1, 0.3, 0.5, 1.0, 2.0 and 3.0
16	**Computer Workstation with Printer**	A computer workstation (minimum Intel core i5 processor, 16 GB RAM, 1 TB HDD, 24″ LCD monitor, Windows 11 Pro OS) with fully compatible control and data-processing software for complete hardware automation. Software upgrades and updates must be available for the lifetime of the instrument. A laser printer must be supplied with the system.
17	**Warranty**	Five (5) years comprehensive on-site warranty. Warranty must include all the consumables like lamps, filters, cuvettes, and any other standard wear-and-tear components.
18	**UPS**	2 KVA on-line UPS to run the entire system with minimum 30 minutes back-up must be supplied.
19	**After Sales Service**	The vendor must have a fully equipped service facility in Guwahati to ensure prompt and reliable after-sales service. A minimum of four preventive maintenance visits per year shall be conducted during the warranty period. All emergency service requests must be attended to within 72 hours; failure to do so will result in a corresponding extension of the warranty period. Vendor should provide enough training of operation to users.
20	**Pricing Terms**	The price should be quoted on an F.O.R. Institute basis. All applicable taxes, duties, clearing, and delivery charges up to our institute must be borne by the vendor.
	Quote as Optional	(a) Annual Maintenance Contract (AMC) for the equipment for the 6th and 7th years after installation. (b) Pulsed LED with a repetition rate of ≥ 25 MHz and pulse width ≤ 900 ps, with peak emission wavelengths at 340 ± 15 nm, for fluorescence lifetime measurement.

Registrar I/c
Cotton University
Panbazar, Guwahati- 781001, Assam

Annexure 2

Equipment: 400 MHz NMR Spectrometer

Part A: Technical Specifications

Sl. No.	Description
1.1	**Magnet:** • Advanced and latest technology superconducting magnet system with an operating field of 9.4 tesla and standard bore size (54 mm) with field stability of <10 ppb/hour or better. • Shortest possible Radial (less than 0.5 m) and Axial distance (less than 1.0 m) of 5 Gauss stray field from the centre of the magnet. Please specify the overall Magnet dimensions /ceiling height requirements. • Built-in cryo-shims & room temperature shims. • Liquid He hold time (365 days or more) and liquid N_2 hold time (minimum 14 days or better). • Please specify the total Liq. He and N_2 hold volume, refill interval and refill volume for He and N_2. • Liquid helium Boil off rate should be less than 14 ml/hour or less. Helium boil off rate should be mentioned in Magnet catalogue and the same should be submitted in Technical Bid • Digital level sensors for liquid He (mandatory) and N2. Alarm function for low helium level/nitrogen level. • All support accessories for cryostat (e.g. liquid He and liquid N2 transfer line). • Pneumatic/Automatic sample load/spin/eject system. • Standard test samples for multinuclear studies.
1.2	**Spectrometer Console:** • 2-channels RF systems for 1H, 13C, 15N, 31P, 19F, 29Si, 11B, 51V, 119Sn and 195Pt capable of performing all 1D and multi-dimensional NMR experiments. Mention the frequency scale of operation along with configuration and band width of each channel. • Automatic high performance gradient shimming for 1D and 2D along with lock, spin and insert/eject. • 2H lock channel with high precision phase and field correction. • Appropriate amplifiers/preamplifiers for each channel for observation or decoupling of 1H or 19F (at least 50W) and in the range of 31P to 15N /109Ag(at least 140W) for routine 1H detected HSQC/HMBC experiments also. • Observation of 1H with 19F decoupling and vice versa should be possible without compromising the sensitivity of the observed nuclei. • Variable temperature unit with all components for both high at least (up to +150° C) and low (up to -100 °C) temperature. • Software controlled Power Up and Power Down of the spectrometer control unit.
1.3	**Probe 1: Liquid Probe**

	• 5 mm multinuclear Z-gradient based broad band probe with automatic tuning and matching facility for observation of 11 nuclei with 19F decoupling or 19F observe nucleus with 1H decoupling and for observation of nuclei in the range of 31P to15N etc. with 1H decoupling/observe. There should be a single advanced probe which should be capable to handle all active nuclei such as 1H, 11B, 13C, 15N, 31P, 19F, 29Si, 51V, 195Pt and 119Sn without changing probe or any manual tuning. • Probes should be equipped for variable temperature experiments (atleast -100 °C to +150 °C) with suitable attachment/kit. **Desired Specification: Signal/Noise** 1H sensitivity > 540:1 13C sensitivity > 230:1 13C sensitivity (1H dec) >270:1 19F sensitivity (1H dec) > 540:1 15N sensitivity > 25:1 31P sensitivity > 110:1
1.4	**User Interface:** • A high performance state-of-the-art workstation (i5 processor, 16 GB RAM, 23.8 inch monitors, 1TB SSD drive) of reputed international brands (e.g., Dell, HP etc.) with tools/software/data cards for data acquisition, processing, plotting, structure verification, spectral simulation and multiple analyses of 1D (1D multinuclei and deuterium NMR, 1D ZS, 1D BASH and 1D psyche NMR), 2D (DEPT, HSQC, COSY, TOCSY, NOESY, HMBC, Pureshift-DOSY, F1-coupled BIRD HSQC, BIRD HSQC, PSYCHE-NOESY-pure shift experiment, *J*-resolved etc.) and 3D experiments. • An additional high performance state-of-the-art workstation for data processing (i7 processor, 16 GB RAM, 32 inch monitors, 2TB SSD drive) of reputed international brands (e.g., Dell, HP etc.) with tools/software/data cards for data processing, plotting, structure verification, spectral simulation and multiple analyses of 1D (1D multinuclei and deuterium NMR, 1D ZS, 1D BASH and 1D psyche NMR), 2D (DEPT, HSQC, COSY, TOCSY, NOESY, HMBC, Pureshift-DOSY, F1-coupled BIRD HSQC, BIRD HSQC, PSYCHE-NOESY-pure shift experiment, J-resolved etc.) and 3D experiments. • Data processing software should be compatible with Windows, Linux and Mac platforms. • Software for molecular structure determination, diffusion and kinetics analyses. • Computer assisted Structure elucidation software
1.5	• Anti-vibration leg/stand and suitable earth quake resistant platform (mention the lower limit of the damping frequency vibration)
1.6	• Autosampler with a capacity of 24 samples or above supplied with adequate number of spinners

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1.7	**Accessories:** • Best quality NMR sample tubes, 2D NMR sample tubes and caps-200 Nos or more. • Data processing license software for multi-user post run application-at least 5Nos. • Sample spinner/holder for 5mm NMR tubes: 24 for routine experimental use and 6 for low/high temperature experiments.
1.8	**Indigenous items** required for installation: • Liquid Helium for installation • Liquid Nitrogen for installation • Four Cryocans (50-55 lit each) with Nitrogen transfer lines. • 10kVA UPS with 4 hours of battery back up on full load. 3 years warranty on UPS and batteries should be included. • ISO-9001 certified oil free and soundless air-compressor complete with dryer with rating and specification capable of catering all the needs, with sufficiently big buffer tank along with the system. The vendor should quote both. 3 years warranty on the whole compressor system should be included. • All the requisite items and accessories for refilling of liquid He and liquid N2.
1.9	• Supply and refill of Liquid helium for a period of three years after magnet installation. This should be inclusive of all charges till delivery at Cotton University, Guwahati.
1.10	• Supply and refill of Liquid nitrogen (50 liters per week) for a period of five years after magnet installation. This should also include the weekly transportation charges till delivery at Cotton University, Guwahati.
1.11	• Supply of three filled Nitrogen gas cylinders (7 cubic metre) along with three stainless steel regulators (2 stage).

Part B: Mandatory Requirements

Sl. No.	Description
2.1	Delivery and installation at Cotton University-Guwahati.
2.2	Safe Delivery of goods is the exclusive responsibility of the vendor.
2.3	The vendor is responsible for the delivery/installation/commissioning/validation until Cotton University, Guwahati. The customer is not responsible for any mishap/breakdown/damage of the equipment while in transport and custom's clearance. The vendor has to take the full responsibility of the delivery of the equipment until installation/commissioning/validation at Cotton University, Guwahati.

2.4	Acceptance of the ordered goods is subject to successful installation and commissioning at Cotton University, Guwahati .
2.5	Vendor should confirm the supply of required amount of Liquid helium for its installation and regular refilling
2.6	• 3 years warranty (for the entire machine) from the date of successful installation of the equipment. Warranty shall include free maintenance of the whole equipment supplied including free replacement of parts. The defects, if any, shall be attended to on immediate and urgent basis. The warranty on the associated software should cover providing of upgraded version/s, if any, released during the warranty period free of cost. Also, the warranty should cover UPS and air compressor system maintenance and repairs. • Additional 2 years of comprehensive warranty on the equipment after expiry of the initial 3 years of warranty period. Warranty shall include free maintenance of the whole equipment supplied including free replacement of parts. The defects, if any, shall be attended to on immediate and urgent basis. The warranty on the associated software should cover providing of upgraded version/s, if any, released during the warranty period free of cost. Also, the warranty on UPS and air compressor system should be included.
2.7	Contact details of the concerned person supported by a Service Centre in North-East region for immediate service if required should be provided.
2.8	The vendor will have to arrange for all the testing equipment & tools required for installation, testing & maintenance etc.
2.9	Installation certificate will be issued only after satisfactory functioning of the instrument, demonstration of all the modules & onsite training at Cotton University, Staff and Students.
2.10	Demonstration of all the applications and facilities as per the demand of the users. Training on specialty applications mentioned below are required: • ^{1}H NMR sample preparation and full operation. • Demonstration on acquisition and analysis of 1D (1D multinuclei and deuterium NMR, 1D ZS, 1D BASH and 1D psyche NMR), 2D (DEPT, HSQC, TOCSY, COSY, NOESY, HMBC, pureshift-DOSY, F1-coupled BIRD HSQC, BIRD HSQC, *J*-resolved etc.) and 3D spectra. • Demonstration on acquisition of spectra at low and high temperature. • Multinuclear sample preparation and full operation. • Demonstration for safe NMR operation, data acquisition, analysis, print, store, transfer facilities. • Calibration, testing, and baseline analysis of standard and unknown samples. • Training on the NMR software for operations. • Demonstration of capabilities like for multinuclear probe, advanced NMR

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	techniques.
2.11	The Bidder should have established service base, preferably in the north-eastern part of India at least since last 5-10 years. All contact details, including email and phone numbers of the office/s and personnel of Bidder should be provided.

Part C: Special Requirements

Sl. No.	Description
3.1	Appropriate room layout/size requirements for the magnet and console and temperature required for NMR Room. Personal visit to installation site at Vendor's expense after order is received.
3.2	List of complete safety regulations should be specified.
3.3	The vendor should provide the total number of installations of 300-600 MHz NMR instruments installed in India and North-East Region. Please enclose full list of such users in India with contact name/email/phone is to be provided.
3.4	Requirements of space, electricity and other auxiliaries (e.g., gas lines, water, chiller, solvent sources, etc., if applicable) for the equipment should be specified

Part D: General Information

Sl. No.	Description
4.1	Detailed specifications as well as prices for each item should be mentioned in the quotation.
4.2	The technical specifications should be quoted in the same manner as described in the technical specifications desired in the tender. A compliance report should be attached in this regard.
4.3	Include standard configuration in the main quote and quote separately for optional items and other possible enhancements. However, optional items will not become part of comparison during commercial comparison.
4.4	Vendor should provide a certificate that the spares will be provided in future for a period of ten years at least.
4.4	Please specify the shortest possible delivery time for the equipment from the date of

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	opening of LC.

Part E: Quote as Optional

Sl. No.	Description
5.1	• An additional 5 mm multinuclear Z-gradient based broad band probe with automatic tuning and matching facility for observation of 1H nuclei with 19F decoupling or 19F observe nucleus with 1H decoupling and for observation of nuclei in the range of 31P to15N etc. with 1H decoupling/observe. There should be a single advanced probe which should be capable to handle all active nuclei such as 1H, 11B, 13C, 15N, 31P, 19F, 29Si, 51V, 195Pt and 119Sn without changing probe or any manual tuning. • Annual maintenance contract (AMC) for the equipment for the 6th and 7th years post installation of the equipment.

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Annexure 3

Specifications and purchase terms and conditions for Inductively Coupled Plasma – Mass Spectrometer (ICP-MS) with IC system

S. No.	Feature	Requirement
1.	Purpose and general requirements	The ICP-MS system should be capable of analyzing major, minor, trace and ultra-trace levels (%, ppm, ppb and ppt) of multi-elemental concentrations in a single run in a wide range of matrices including environmental samples (such as soil, sediment, geology, sludge, ash, aerosol, water, wastewater, food, plant, etc.), biological, and engineered material samples, among others. The system should possess the ability for speciation analysis (As, Cr, Hg, Se, etc.) using a coupled ion chromatography (IC) unit. The system must be compatible with LC such that coupling with these instruments may be done at present or in future. The system must be supplied with all peripherals, and model numbers of the equipment/additional units should be clearly mentioned.
2.	Basic Design	Latest technology bench-top quadrupole ICP-MS with IC system. The system should have the capability to eliminate polyatomic and isobaric interferences, and acid matrices effectively and should analyze the sample precisely. The system should be complete in all respects with built in features of hardware & software.
3.	Sample Introduction	• ICPMS should be quoted with concentric nebulizer, spray chambers, quartz torch for efficient matrix decomposition, sample ionization, and quartz injector. • Integrated computer controlled minimum 3-channel peristaltic pump with 10/12 roller suitable arrangements. • Integrated Peltier cooled spray chamber (-5 to 20°C or better) with an accuracy of ±3°C for effectively improving signal stability and reducing oxide interferences • System should have integrated and software-controlled accessories along with 100 fold or more dilution capabilities to handle total dissolved solids (TDS) more than 20% by Argon & or liquid dilution. All necessary accessories required for running high matrix high TDS samples should be included as standard supply.
4.	Plasma and Torch Setup	• RF power range: 500-1500W or better/ RF power range: 500-1600W or better • Solid state RF Generator: 27/34 MHz or higher • Torch Alignment: X,Y,Z automatic and computer controlled • Should have at least software controller variable 04 mass flow controllers to control plasma, auxiliary makeup, carrier gases and makeup/dilution gas

5.	Interface	• Cone Interface: Standard Ni and Pt sampler and skimmer cones. ICPMS system must have single interface to achieve all guaranteed performance specifications of ICP-MS instrument without any manual intervention or changeover for high matrixes, high sensitivity, and high TDS samples. • Ion Lens: off-axis ion lens or suitable design to provide high ion transmission and low backgrounds to deliver superior detection limits, sensitivity, and oxide ratio. • The vendor should provide a maintenance chart for all the components that require frequent maintenance and should indicate consumables that require frequent replacement.
6.	Collision Reaction Cell technologies	• System equipped with best in line technology: Capable of operating in Standard (No gas), Collision modes and Reaction mode (Pure or Premix gas form) for polyatomic interference removal. • Fully automated and software-controlled changeover between No gas and Collision gas mode of operation. • Should be factory fitted with MFC for collision gas • The system should be field upgradable with reaction gas line with MFC in future to use H_2/O_2 etc reaction gases.
7.	Mass Analyzer and Detector	• Quadrupole based, RF2.0 MHz or more • Mass Range: 2-260 amu or better to analyze all elements. • True Linear Dynamic range:10 orders ≤0.3cpsto ≥10^9cps or better without any hardware interchange or software adjustment • Scan speed: ≥3000 amu/s or more • Detector should be replaced free of cost during warranty period
8.	Performance Specifications	• Detection Limit ng/L (ppt) • Low mass (Be/Li):≤0.5 • mid mass Y/In≤0.2 • High Mass U/Tl/Bi: ≤0.2 • Sensitivity (M cps/mg/L) • Low mass (Be/ Li) :≥50 or more • Mid Mass In/Y : ≥160 or more • High Mass U/Tl/Bi : ≥80 or more ➢ Oxide ratio: CeO^+/Ce^+ <2%; ➢ Background noise (no gas mode) @ 4/9 amu or suitable: <1cps ➢ Mass resolution: Variable
9.	Vacuum system	Should have rotary pump and turbo molecular pump with split flow for extremely high gas throughput. Vacuum should be 5 x 10^{-6} mbar or suitable range in open valve condition and shall be 1x10^{-6} mbar or suitable range in closed valve condition or suitable specifications as per system design requirement
10.	Software	• Must supply original licensed copy of the proprietary instrument control software. • Windows-based software (compatible with the latest versions of Windows) with free lifetime upgradation availability of method templates

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		• Should be able to control all accessories of the ICP-MS system including autosampler. The system software should support the following • calibration curve fit modes for quantitative analysis: linear least squares, weighted linear least squares, linear forced-through-zero least squares, quadratic, and method of standard additions (matrix-matched calibration). Software should be able to perform automated optimization of cell gas flow and single software control for ICP-MS and IC for speciation studies.
11.	Ion chromatography (IC) unit for speciation studies	Fully automated IC-ICP-MS operation for speciation studies for As, Cr, Hg and Se, etc. The IC system should also allow simultaneous analysis of various anions. Consumables and accessories should be quoted for the smooth operation of the system. The software should be able to identify the various components such as pump and column automatically. The IC unit should consist of a quaternary gradient, ion chromatography (IC) pump (5000 psi or more) with integrated degasser, autosampler (≥50 vials), and column oven. It should have advanced conductivity detector with thermal control capabilities. Standards and columns for speciation analysis of As, Fe, Cr, Hg, Se etc. should be provided. Columns for anions like F, Cl, NO_3 etc. The chromatography software module should be integrated within the ICP-MS software and should provide real-time status information on all vital analytical parameters for both the ICP-MS and the IC system. Suppressor control should be included. Additional accessories and consumables: Non-metallic PEEK tubing (2-3 sets), RF coil (3 nos.), Nuts and Ferrules (2 nos. each), 6-8 Cation Standard Mix 50ml, 6-8 Anion Standard Mix 100ml: Nitrate Standards Kit, Set of 6 Standards, 10 ml.
12	Microwave digestion system for sample preparation	A microwave digestion system capable of sample preparation with acid mixtures using programmable pressure-temperature ramping should be supplied with the ICP-MS system. Microwave digestion system should be capable of digesting inorganic/organic samples including soil, sediment, sludge, aerosol, water and wastewater, biological samples, chemicals, etc. The system should have 12 or more vessel rotor, microwave power ≥1600 W, vessel volume: ≥80 ml, maximum operating temperature: ≥240°C (designed temperature ≥450°C), maximum operating pressure: ≥50 bar (designed pressure ≥100 bar), IR/contactless temperature sensor for temperature monitoring of each vessel, integrated keypad/touch screen control, pressure-activated venting, chemical- (especially, acid) and corrosion-resistant cavity chamber and vessels,

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		TFM/PTFE vessels, flexibility in terms of customized method creation, compliance with international safety standards, and method compliance with US EPA 3052, US EPA 3051A, ASTM D4309-96.
13	Upgrade Path	System should be compatible to be future upgraded with LC hyphenation for speciation studies
Items for installation requirement		• All necessary pre-installation requisites/consumables including chemicals, acids, gases and standards for complete installation and demonstration of the instrument need to be supplied. • Gas cylinders with regulators (minimum number of cylinders required are mentioned here): Argon - 10 Nos., Helium - 02 Nos., reaction gas cylinders: Methane/Oxygen/Hydrogen – 02 Nos. as per system requirement to comply with all applications and regulations. • Gas Panel as per requirement and suitable 25-30 KVA online UPS with minimum 60 min backup. Manifold with four-cylinder capacity for Argon. • Gas line installation • Suitable exhaust fumes hood assembly for ICP-MS. • Suitable exhaust fumes hood assembly for microwave digestion system. • Compact and low-noise chiller unit(s) as per manufacturer's recommendation. • Auto-tuning standards. • Suprapure acids and chemicals: 5L Nitric acid, 5L Hydrochloric acid, 2L Hydrogen Peroxide, 4L Hydrofluoric acid. • A suitable granite-top table for ICP-MS, IC unit and • i7 PC with 32 GB RAM, 1 TB hard disk, two 24-inch TFT/LED monitors along with laser printer. • A separate suitable granite-top table for the microwave digestion system • 1.5 Ton split air (2 units).
Standard Accessories Required		**i)** ICPMS Autosampler: Minimum 200 vials or more capacity, 10 ml or suitable volume vials **ii)** NIST calibration standards with minimum 21/23 elements including that mentioned above 1000 ppm (100ml) **iii)** Single element (10 ppm, 200 ml) standards for Hg, As, Cr and Se including Al, Cu,Zn,Fe etc. **iv)** Tuning solution – 200 ml or more **v)** Internal Standard Mix – 100 ml **vi)** Separate complete HF resistant kit
Spares/Consumables		Spares/consumables need to be provided including Ni sampler, skimmer and hyper skimmers cone, Pt sampler, skimmer and hyper skimmers cone, Standard nebulizer, Standard Spray chamber, Standard injector & torch, tubings, Autosampler vials, Standard autosampler probe and complete tubing set, torch, Ion lens etc.

		Above spares/consumables need to be provided in 1 set/2nos. as applicable
Warranty		Five years of comprehensive warranty from the date of installation without any additional cost to the purchaser. The warranty should cover ICP-MS, IC unit, microwave digestion system, UPS, fume hood, and other items including all accessories, consumables 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 sole obligation of the manufacturer/supplier, including payment of charges for freight delivery, custom duty and transportation, if any. In case of breakdown during the warranty period, a competent 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. 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. Also, two maintenance visits every year (within the warranty period) by authorized service engineers are required. Annual calibration of the equipment shall be a part of the warranty. It shall also be mandatory to perform calibration after every major repair/breakdown. Two years AMC should be cover after the expiry of the warranty period.
Training		The supplier must provide one-week comprehensive training on operation, application and maintenance of the instrument after installation at Cotton University
Delivery and Installation		Equipment must be supplied within 15 days of PO received and installation must be completed within a week of delivery of equipment
Post delivery and installation service		Service must be provided of any type related to the terms and conditions within or after expiry of warranty after 48 to 72 hrs of communications

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