

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE
2A & 2B , Raja S.C. Mullick Road, Jadavpur, Kolkata-

700032 NIT No. : IACS/CSS/SM/113

Date: 07.01.2022

Sealed tender in two bid system (Technical Bid & Financial bid) is invited from bonafide, resourceful and eligible manufacturer/exclusive distributor/vendors for the purchase of “**Research grade EMISSION SPECTROMETER for steady state and gated spectral measurements, time resolved spectral and decay measurements as well as quantum yield for both photo and electroluminescence**” with necessary accessories.

Part-I (Technical Bid) of the tender should contain technical specifications in detail as well as commercial terms and conditions. Part-II (Price Bid) should clearly indicate group-wise price, if needed, as mentioned in the technical bid. The Technical Bid and Price Bid are to be submitted in separately sealed envelopes, distinctly marked accordingly and both to be put inside another envelope, that should be sealed and superscribed with tender notice no. and due date. The bidders may submit bids duly signed in their own letterheads.

Completed tender bids should reach the office of the **Registrar, Indian Association for the Cultivation of Science (IACS), 2A & 2B Raja S. C. Mullick Road, Jadavpur, Kolkata-700032** on or before the scheduled date and time specified below:

Tender Notice No.	NIT No. IACS/CSS/SM/113 Date: 07-01-2022
Last date and time of submitting tender	31.01.2022 (2.00 PM)
Pre-bid meeting (online mode) to discuss technical specification and detail presentation by the representative(s) of the interested companies on the technical specifications of their instrument and application with representative data acquired in their instrument elsewhere.	14.01.2022 @3.30 PM through online mode (Interested bidders need to send participation request by 10/01/2022 to psusm2@iacs.res.in with cc to psusm2@gmail.com ; Meeting link will be sent upon receiving the request)
Date and time of opening tender (Technical Bids)	31.01.2022, at 3.00 PM
Place of opening tender	IACS
Date and time of opening of Price Bid	The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email addresses. The rest of the bids will be rejected.
Contact	Email: psusm2@iacs.res.in Tel.+91 33 2473 4971 [Ext 1564] /Mob. 09433806658

The technical bids will be opened first to judge/evaluate the technical specifications of the said instrument and thereafter the price bids of only technically qualified bidders will be opened.

Technical Bid Evaluation: The Technical Bids will be evaluated in the presence of the representatives of intending bidders who will be able to clarify technical aspects of their bids, if any, required by the Technical Evaluation Team.

Opening of price-bid: The Price Bids of the bidders qualifying the technical bid will only be opened, the date of which will be intimated to the short-listed bidders at their email

addresses. The rest of the bids will be rejected.

Please note that IACS will not provide any accommodation or reimburse any expenses to any of the bidders for attending opening of technical bid.

Quotations received incomplete or beyond the stipulated time will be summarily rejected.

Bidders should submit their past experience for supplying and successful installation of similar units to other research Institutes/Universities/other organizations in India and abroad. Please provide documentary proofs of such successful installation and supportive documents that the instruments are running successfully.

1. TECHNICAL BID

The technical bid should contain technical specifications and should be kept in a separate sealed envelope duly superscribed as “TECHNICAL BID” on the outer cover of the envelope as already detailed above. It should be clearly mentioned on the envelope as **“Research grade EMISSION SPECTROMETER for steady state and gated spectral measurements, time resolved spectral and decay measurements as well as quantum yield for both photo and electroluminescence.”**

Technical Specifications for “Research grade EMISSIONSPECTROMETER for steady state and gated spectral measurements, time resolved spectral and decay measurements as well as quantum yield for both photo and electroluminescence.”.

SL No	Item	Detailed Specifications
1.	Modular Open Architecture Research Grade Spectro Fluorometer	Spectrometer: Optics should maintain focus and wavelength compatible from 200 to 1600nm, having double monochromators at both excitation and emission sides with a focal length >300mm. Excitation Range: 200nm - >900nm, optimized in UV range (grating 1200 grooves/mm or above). Emission Range: 200 - >900nm optimized in visible range (grating 1200 grooves/mm or above). NIR Emission Range: 850 - 1600nm (grating 800 grooves/mm or above) Wavelength accuracy: ± 0.5nm or higher Resolution: 0.04 nm or better Bandpass: 0-30nm continuously adjustable from software. Step size: <200nm/sec Integration time: <2ms to 150 sec Emission Detector: Steady state and Photon counting (TCSPC/MCS) from 200 to >900nm (preferably upto 1000 nm) Reference Detector: Calibrated Silicon photodiode with correction files from 200 to 900 nm or higher. Signal to noise ratio: Water Raman Signal $\geq 30,000:1$ or higher Water Raman signal > 500,000cps All optical components compatible for a spectra region of 200nm to 1600nm b) Essential electronics and circuits required for Fluorescence, gated emission / phosphorescence spectral and decay

		measurements.
2.	Sources	Xenon lamp sources for Fluorescence, Phosphorescence spectra and Phosphorescence decay. a) 450W or higher CW Ozone free Xenon arc lamp with suitable power supply. b) 15W or better Pulsed Xenon Lamp with suitable power supply, optical pulse width between 1µs to 3 µs. The repetition rate such that the maximum measurement window should be 10s or better. Laser and LED sources optimized and integrable to spectrometer for TCSPC measurements a) Two pulsed laser sources with variable rep rate 20KHz – 20MHz with wavelengths centered around ~375 nm and ~475 nm with a pulse width lower than 100ps. Integrated card for long lifetime measurements. Required electronics for TCSPC measurements. b) Pulsed Diode with variable rep rate 20KHz – 20MHz with wavelengths centered around ~300 nm. Integrated card for long lifetime measurements. Required electronics for TCSPC measurements.
3.	Detector	Photomultiplier tube with necessary accessories and peltier cooled housing- spectral range between 200 to >900nm (preferably upto 1000 nm) with a detector response time of 600ps or lower, Signal to noise ratio of 6000 or better.
4.	Sample chamber	1. Single cuvette holder with cooling inlet and outlets. 2. Front facing sample holder with focus adjustment for powder / thin films /slide (preferably with variable angle option). 3. Swing away mirror that allows switching between front-face and right-angle detection instantly. 4. Rapid peltier based variable temperature controllable holder from -20° to 100°C with magnetic stirrer and software controllable temperature range and ramping. 5. Set of UV-Visible-NIR cut off filter set and neutral density filters with required holders. 6. Continuously variable neutral density wheel at the TCSPC laser excitation with required holder. 7. Liquid nitrogen Dewar at 77k measurements with four quartz or fused silica sample tubes. 8. Integrating sphere (120 mm or above) for absolute quantum yield measurements (PLQY) for solid and liquid samples.
5.	Polarizers	Computer controlled variable angle crystal polarizers for both excitation (250nm to 900nm) and emission with a wavelength range of 250nm to >1500nm or better.
6.	Cryostat	Variable temperature with spectrometer software controllable cryostat with turbomolecular pump and necessary accessories with a temperature range from 77k to 500K and compatible with wavelength range (300 -900nm) of measurement or better range. Turbomolecular pump system should reach an ultimate pressure ~10 ⁻⁷ mbar or lower and a pumping volume of 100 L/s or greater with a backing pump of either oil free diaphragm or scroll pump.
7.	Electroluminescence measurements	Source meter, function generator and LED holder (or sample clamp) with suitable electrical connections and computer controlled software for the EL spectra and decay measurements.
8.	Cuvettes	4 Nos cuvettes with PTFE stopper for ambient temperature

		fluorescence measurements and 4 Nos cuvettes with PTFE stopper for low temperature (77K to 500K) to be used inside the cryostat. The low temperature compatible cuvettes preferably with no glued edges for low temperature measurements.
9.	Computer, Electronics, Software (online / offline)	Appropriate computer with necessary accessories and software for steady state and gated spectral, TCSPC and MCS measurement as well as for TRES and polarization anisotropy measurements and decay fitting and analysis. Data analysis software should be for three users.
10.	Online UPS	Online UPS with 30 min backup
11.	Warranty	Three years of comprehensive warranty with 48 hours response/rectification time and spare part replacement time of about 3weeks period if importing from abroad.
12.	Pre-installation certificates	These should be attached with tender documents
13.	Pre-installation requirements	These should be mentioned and intimated in advance.
14.	Compatibility of power supply	Main supply: 230 $\pm$ 10 volts, 50 Hz
15.	Installation & Training	Installation and student training as required (No extra cost).
16.	Duration	Estimated time of delivery after getting purchase order
Optional items/capabilities to be quoted		
1.	NIR Detector	Extended NIR capability: Range <850nm -1600nm. All items to be operational at NIR range with above mentioned components.
2.	Optional pulsed laser sources	Two pulsed laser sources with variable rep rate 20KHz – 20MHz with wavelengths centered around ~405 nm and ~510 nm with a pulse width lower than 100ps. Integrated card for long lifetime measurements.
3.	EQE measurements	Integrating sphere for EQE measurements with variable temperature capability.
4.	Circularly polarized measurements	Upgradable to measure the circularly polarized emission in the visible region from 300 -900nm
5.	Fast PMT for TCSPC	Fast PMT to integrate to TCSPC measurements with a response time of 40ps or better with arrange of 250nm to 850 nm.

NOTES / Pre-Qualification criteria:

A) Equipment offered must be a model from the current serial production range of the manufacturer. Offer should be supported with printed catalogue and depiction on company website.

B) The local vendor of OEM must attach a reference list of supplies (similar model) in last 3 year with contact details (Name, Phone, email address).

C) The company should be an original equipment manufacturer (OEM) of the EMISSION SPECTROMETER with expertise of manufacturing over 5 years, please attach exclusive authorization certificate specific for this tender with quote without which bid will be rejected. This criterion is proof of accountable service supported by vendor & OEM.

Warranty: Minimum 3 years. The warranty will be valid from the date of actual installation.

Proper installation and training should be provided by the vendor. Onsite after sales service, within 48 hours of reporting any problems, is mandatory. It is essential to have a technical person stationed in Kolkata.

A compliance table (see below) must be prepared and submitted along with the technical bid.

Sr. No	Tender specification	You offered instrument specification	Extent of compliance

2. PRICE BID:

The financial bid indicating (item-wise) price for the item(s) mentioned in the technical bid should be kept in a separate sealed envelope duly super scribed as “PRICE BID” on the outer cover of the envelop as already detailed above. Price bids of only technically qualified bidders will be opened and they will be intimated the date and time of the opening of price bid at their e-mails. Rest of the bidders will stand rejected.

PRICE: Price to be quoted on CIF Kolkata and also FOB basis.

3. BID SECURITY:

- An Account payee Demand Draft/Pay Order of any of the Nationalized Banks for Rs. 500,000/- (Rupees FIVE lakh only) drawn in favour of “Indian Association for the Cultivation of Science (State Bank of India, Jadavpur University Branch, A/C No. 11079699211, IFSC: SBIN000093, MICR Code: 700002048)” is to be furnished by the bidders except those who are registered with the Central Purchase Organizations, **National Small Industries Corporation or the concerned Ministry or Department**, as Bid Security money or Earnest Money Deposit (EMD). Alternatively, the Bidder shall have the option to furnish the EMD in the format of Bank Guarantee (BG) of any Indian Nationalized Bank preferably located at Kolkata.
- The Demand Draft for the Bid-Security should have at least 90 (ninety) days validity period of opening of the bids.
- In case of non-award of the work the Bid Security money would be returned to the unsuccessful Bidders.

4. PERFORMANCE SECURITY:

An Account Payee Demand Draft on any nationalized bank of India of 10% of the order value in the name of “Indian Association for the Cultivation of Science” is to be furnished by the successful bidder as Performance security. Performance security money should remain valid for a period of 60 days beyond the date of completion of all contractual obligations of the supplier including warranty obligations. Bid security money or EMD will be refunded to successful bidder on receipt of the Performance security money.

5. TERMS OF PAYMENT:

Payment will be made through irrevocable Letter of Credit in two instalments. 90% of the money will be released on submission of shipping of documents. Remaining 10% will be released after successful installation of the instrument.

6. GENERAL INSTRUCTIONS:

1. Validity of tender: Tender submitted should remain valid for at least SIX months from the date of opening the tender. Validity beyond six months from the date of opening of the tender shall be subject to mutual consent.
2. The tender should accompany a compliance chart. Without compliance chart, bidders will be rejected.
3. Incomplete and conditional tenders as well as tenders received after the due date will be summarily rejected without assigning any reason thereof.
4. At any time prior to the bid due date, IACS may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder during pre-bid meeting, modify the bidding documents. The amendment(s) will be notified on the institute website. Prospective bidders are advised to occasionally visit the website (www.iacs.res.in/tender) for any amendment.
5. Installation/Demonstration/Application training at site: Installation & user training at IACS, free of cost by the supplier.
6. Service facility: In India, preferably Kolkata, supplier should mention their details of service setup and man powers who are responsible for after sales support. Response time should be within 24 hrs.
7. The model number, make and a printed literature of the products should be submitted positively.
8. Proposed delivery schedule should be mentioned clearly.
9. Manufacturers / exclusive distributors / vendors should have history of supplying this type of instruments to this or other scientific organizations. Availability of a list in this regard would be preferred.
10. Authorized dealership certificate should be provided in case of principal manufacturing company is not quoting directly.
11. Guarantee certificate, users manuals etc. are to be handed over to the user after successful commissioning of the system.
12. In the event of date being declared a closed holiday for purchaser's office, the due date for submission of bids and opening of the technical bids will be the following working day at the appointed time.
13. In case of any dispute, the decision of IACS authority shall be final and binding on

the bidders.

14. For any clarification regarding technical specifications, information etc., please send your queries to Prof. SUDIP MALIK (psusm2@iacs.res.in)

15. The authority of IACS reserves the right to reject any or all of the tenders received without assigning any reason thereof.

Acting Registrar