

Tender Notification for the Procurement of a Research Grade UV-Vis-NIR Spectrophotometer (Last Date for Submission: Friday, June 18th, 2021)

Best quotations are invited for the procurement of a **Research Grade UV-Vis-NIR Spectrophotometer** with 100 mm integrating sphere along with following technical specifications on C.I.P. Bangalore basis (by **Air Freight** only). Your quotation should mention the terms of delivery, delivery schedule, estimated delivery date, and payment terms. The tender should be submitted in two separate sealed envelopes: one containing the technical bid and the other containing the commercial bid, both of which should reach us, duly signed on or before 17:00 hours on 18th June 2021, Friday.

The bids should be addressed to:

The Chairman,

Solid State and Structural Chemistry Unit

Indian Institute of Science (IISc)

Bengaluru, India - 560012.

Kind attention: **Dr. Abhishake Mondal**

email: mondal@iisc.ac.in, chair.sscu@iisc.ac.in

The sealed bids should be sent to:

Dr. Abhishake Mondal

Solid State and Structural Chemistry Unit

Indian Institute of Science (IISc)

Bengaluru, India - 560012.

Ph: +91-9932207177

email: mondal@iisc.ac.in

Please enclose a compliance statement along with the technical bid.

Section 1: Bid Schedule

1.	Tender No	
2.	Tender date	01 st June, 2021
3.	Instrument	Research Grade UV-Vis-NIR Spectrophotometer
4.	Tender type	i) Technical bid (part A) ii) Commercial bid (part B)
5.	Place of tender submission	The Chairman, Solid State and Structural Chemistry Unit Indian Institute of Science (IISc) Bengaluru, India – 560012 Kind attention: Dr. Abhishake Mondal
6.	Last date and time of tender submission	18 th June 2021, Friday, 17:00 hours
7.	For Further clarification	Dr. Abhishake Mondal Solid State and Structural Chemistry Unit Indian Institute of Science (IISc) Bengaluru, India - 560012. Ph: +91-9932207177 <i>email: mondal@iisc.ac.in</i>

Section 2 - Technical Specification for Research Grade UV-Vis-NIR Spectrophotometer with 100 mm Integrating Sphere

Submit quote for one UV-Vis-NIR Spectrophotometer with following minimum specifications.

Principle: Double beam, double monochromator, ratio recording UV-visible-Near IR spectrophotometer, computer interfaced for control, operation, data collection and analysis. It should work in Transmission, Reflection and Absorption mode. A true double beam, double sample compartment, double monochromator optical system is required for ultra-low stray light performance where double pass single monochromators are unacceptable.

1. All reflecting optical system (SiO_2 coated) with holographic grating Dual blazed monochromator with **1440 lines/mm UV/Vis blazed at 240 nm and 360 line/mm NIR blazed at 1100 nm**, Littrow mounting, sample thickness compensated detector optics. pre-aligned tungsten-halogen and deuterium sources, R6872 gridless photomultiplier for high energy in the whole UV/VIS wavelength range, High performance Peltier-cooled PbS detector for the NIR wavelength range.
2. Instrument must allow **standard RS232C or USB** communication from Instrument to PC. This is important since we plan to use the computer for other applications. Other types of interfaces often cause computer conflicts that prevent us from achieving our objective.
3. Instrument must have a **modular, removable source compartment**. A removable source compartment is necessary to accommodate spectroradiometric measurements of light sources.
4. Instrument must incorporate a **modular, removable detector compartment**. The standard instrument must be compatible with 60 mm Integrating Sphere, 100 mm Integrating Sphere, 150 mm Integrating Sphere, and Universal Variable Angle Absolute Reflectance Accessory etc.
5. Instrument must incorporate a **modular, removable sample compartment**. Removal of both the standard sample compartment and the standard detector compartment should be allowable to accommodate large custom sampling accessories.
6. Instrument must incorporate **refractive index compensating detector optics**. This optical design minimizes wedge effects thus increasing the ease of mounting samples and the accuracy of our measurements.
7. Instrument must incorporate **factory pre-aligned tungsten-halogen and deuterium sources**. Pre-aligned sources maximize energy through-put that results in better signal to noise and precision.
8. Instrument must incorporate a **true non-measurement phase wavelength stepping**. In this design, the Sample and Reference signals from the chopper need to be measured while the

monochromators are stationary. A four-segment chopper design must provide individual reading for sample and reference, to increase measurement accuracy.

9. Instrument must incorporate **“flash” memory**, allowing the instrument firmware to be updated by PC download. Flash memory should permit us to add new accessories as they are developed without having to change out mother boards or other instrument electronics.

10. Instrument must incorporate a standard **sample compartment** of at least **200 mm wide, 220 mm high** and **300 mm deep**. Often, we need to run large samples. A smaller sample compartment limits the size of samples. In addition, the instrument must be configurable to allow a custom accessory area of at least **700 mm wide, 300 mm high, and 350 mm deep**.

11. Instrument must include a **software controlled, motorized common beam aperture mask**. A common beam aperture is required when one is measuring small samples. The ability to modify the sample beam size is required for accurate measurement of small samples. Some vendors also offer a small spot accessory to further focus the beam on small samples. This will give us unlimited capabilities to measure any size sample we choose with highest accuracy and precision.

12. Instrument must include software controlled, motorized 1% and 10% reference beam attenuators. Reference beam attenuators are need when one is measuring high absorbance samples.

13. An internal common beam depolarizer must be available to eliminate inherent polarizations, allowing accurate measurements of birefringent samples. Polarization causes spectral artifacts in our samples and must be eliminated.

14. Sample compartment polarization drive unit controlled by the software. This unit enables polarization measurements at varying angles automatically. This will greatly increase productivity in any lab.

15. Software control of accessories. The software must control the reference beam attenuators, slits, common beam mask, scan speed/response, common beam depolarizer, and sample compartment polarizer drive. It must allow one to be able to change all the aforementioned accessory parameters during the scan and over any specified wavelength range. Multiple parameter changes must be allowed throughout a scan. It must be able to vary the polarizer angle, common beam mask, scan speed/slit of each individual sample in an experiment and change the specified angle of the polarizer automatically. It must run the appropriate baseline correction for each sample to correct for the parameter changes automatically. This allows us to completely set up and run our samples while minimizing instrument error.

Optical Performance Requirements:

1. **Wavelength range: 250 - 2500 nm** or better with quoted Integrating Sphere. Should be future upgradable to 175- 3300 nm with dedicated Transmission detector.
2. **Wavelength accuracy:** UV-Visible within ± 0.08 nm, Near IR- within ± 0.3 nm. Or better
3. **Wavelength reproducibility:** Within ± 0.02 nm in visible range, ± 0.08 nm in NIR range or better
4. **Spectral Bandwidth:** 0.05–5.00 nm (UV-vis.); 0.2–20 nm (NIR)
5. **Resolution:** < 0.05 nm in UV-vis. and < 0.2 nm in NIR range or better
6. **Photometric range (Abs):** At least 8 Abs for UV- visible and 6 Abs for NIR or better
7. **Photometric accuracy (USING NIST FILTER):** At 0.5 A & At 1 A ≤ 0.006 ABS or better
8. **Photometric Linearity:** At 1 Abs; ± 0.0060 A (UVS) or better.
9. **Photometric Noise:** Within 0.0001 Abs (0 Abs, 190 nm), within 0.000045 Abs (0 ABS, 500 nm) and Within 0.00004 Abs (0 Abs, 1500 nm)
10. **Baseline flatness:** ± 0.0008 A without smoothening
11. **Light sources:** Deuterium and Tungsten Halogen lamp. Automatic adjustment should be present inside the instrument for automated wavelength accuracy validation and light source position.
12. **Stray light (%Transmittance):** < 0.00007 (At 220 nm, NaI ASTM method)
13. **Detector:** with 100 mm diameter High Performance PbS Integrating Sphere or better. for measurement of diffuse reflectance/ diffuse transmittance of solids, thin films and powder. Wavelength range: 250-2500 nm. Necessary sample holders should be included.

Include Suitable Compatible computer (latest configured Intel Core I7-10700 CPU, 8 GB DDR 4 RAM, 250 GB NVME PCIe SSD HDD, 1 TB SATA HDD, P-4 Cabinet With PSU, Logitech Key Board & Mouse-wired and Dell P Series 24-inch (60.96 cm) Screen Full HD monitor).

1. **Offer Warranty** Minimum 36 months from the date of Installation and a minimum AMC for additional 2 years, 2/3 services per year should be included in the AMC.

The following technical requirements should be strictly met and necessary documentation has to be enclosed along with the main quotation.

_ The UV-VIS-NIR Spectrophotometer unit has to be optimized for the standard test/reference.

samples and to be successfully demonstrated at our site.

_ Complete product catalogue describing all the required basic and optional items should be produced.

- Submit Technical Compliance with Proof documents.
- Submit Similar Equipment's PO copy, user list and performance certificate to demonstrate technical competence and service capability in India and Bangalore.

_ Installation should be done at free of the cost.

_ Technical and commercial bids should be submitted separately.

Section 3- Terms and Conditions:

2. All documentations in the tender should be in English.
3. Tender should be submitted in two envelopes (two bid system).
 - a) Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for conformance to technical specifications. The proposal should contain a compliance table with 4 columns in addition to the ones in the technical requirements table that has been included with this RFQ above. The compliance table should include all the items in the same order and format. The first column should describe your compliance in a "Yes" or "No" response. If "No" the second column should state, the extent of deviation. The "third" column should state the reasons for the deviation if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below. (suppliers who include any indication of prices in the technical bid will be automatically disqualified).
 - b) Commercial Bid (Part-B) – Indicating item wise price for the items mentioned in the technical bid, as per the format of quotation provided in tender, and other commercial terms and conditions.
4. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
5. The SEALED COVER superscripting tender number / due date & should reach the office of the Chairman, Solid State and Structural Chemistry Unit, Indian Institute of Science, Bangalore – 560012, India, **Kind attention: Dr. Abhishake Mondal** on or before due

date mentioned in the tender notice. In case due date happens to be holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.

6. Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:
 - a) To accept OR reject lowest tender or any other tender or all the tenders.
 - b) To accept any tender in full or in part.
 - c) To reject the tender, offer not confirming to the tender terms.
7. Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.
8. The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.
9. The vendor is responsible for the installation of the system at the institute.
10. The price quotation should include the cost of installation and training of potential users.
11. GST must be not more than 5% (Institute will provide you GST exemption certificate).
12. The system should be provided with at least three years of warranty, on all parts and labor, from the date of installation.
13. Imported items should be shipped on C.I.P. Bangalore basis (by **Air Freight** only).
14. The vendor should have qualified technical service personnel for the equipment based in India and should assure a response time of <48 hours.
15. Vendor must provide a user list (with contact details including emails and phone numbers) of at least at least five identical instruments in JNCASR, IITs, IISERs, NITs with above mentioned specifications. Details of such systems should be provided.
16. The lead-time for the delivery of the equipment should not be more than 6 months from the date of receipt of our purchase order.
17. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.
18. Wherever requested data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.
19. All guaranteed specifications may have to be demonstrated at the time of installation. Any necessary standard samples for that purpose should be brought by the service engineers.
20. Printed literature and published papers in support of all compliance with the prescribed specifications may be provided.

21. The vendor must provide a compliance statement in a tabular form concerning each technical specification in the tender document duly supported by the manufacturer's literature and published papers. Any other claim will not be accepted and may lead to rejection of the bid.
22. Technical evaluation by the institute may include a demonstration to verify functionalities and capabilities of the system quoted. The institute reserves the right to provide samples after opening the technical bids for verification of promised specifications. Any discrepancy between the promised specifications and measurements will be deemed as technical non-compliance.
- 23. The vendor must quote for a non-comprehensive AMC price beyond the three-year warranty, with a price lock in for 3 years beyond the standard 3-year warranty period, 2/3 services per year should be included in the AMC. Annual Maintenance Contract should be clearly mentioned after warranty period.**
24. The quote should also include additional spares sufficient for 3-years.
25. The payment will be through FOR-IISc Bangalore in INR only.
26. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

Annexure 1:

Details of the Bidder: The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Sr. No.	Type	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name:
Designation, Seal

Date:

Annexure 2:

Declaration regarding experience

To,

The Chairman,
Solid State and Structural Chemistry Unit,
Indian Institute of Science,
Bangalore – 560012,
India

Kind attention: **Dr. Abhishake Mondal**

Ref: Tender No: XXXXXXXXX

Dated: XXXXX

Supply and installation of Research Grade UV-Vis-NIR Spectrophotometer

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing Research Grade UV-Vis-NIR Spectrophotometer.

(Signature of the Bidder)

Printed Name Designation, Seal

Date:

Annexure 3:

Declaration of track record

To,

The Chairman,
Solid State and Structural Chemistry Unit,
Indian Institute of Science,
Bangalore – 560012,
India
Kind attention: **Dr. Abhishake Mondal**

Ref: Tender No: XXXXXXXXXX

Dated: XXXXX

Supply and installation of Research Grade UV-Vis-NIR Spectrophotometer

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender.

I hereby declare that my company / firm is not currently debarred / blacklisted by any Government / Semi-Government organizations / institutions in India or abroad. I further certify that I am competent officer in my company / firm to make this declaration.

OR

I declare the following:

Sr. No.	Country in which the company is debarred/ blacklisted / having pending case	Blacklisted / debarred by Government / Semi Government Organizations or Institutions / having pending case	Reason	Time Period

(Note: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

(Signature of the Bidder)

Printed Name Designation, Seal

Date:

Annexure 4:

Declaration of acceptance of terms and conditions

To,

The Chairman,
Solid State and Structural Chemistry Unit,
Indian Institute of Science,
Bangalore – 560012,
India

Kind attention: **Dr. Abhishake Mondal**

Ref: Tender No: XXXXXXXXXX

Dated: XXXXX

Supply and installation of Research Grade UV-Vis-NIR Spectrophotometer

Sir,

I have carefully gone through the Terms & Conditions contained in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully

(Signature of the Bidder)

Name:

Designation, Seal:

Date:

Section 5: Checklist

The following items must be checked before the bid is submitted.

1. Sealed Envelope "A": Technical Bid
Technical bid (each page signed by the authorized signatory and sealed) with the below annexures:
 - a. Annexure 1: Bidders details
 - b. Annexure 2: Declaration regarding experience
 - c. Annexure 3: Declaration of track record
 - d. Annexure 4: Declaration of acceptance of terms and conditions
 - e. Annexure 5: Details of item quoted.
2. Sealed Envelope "B": Commercial Bid

Your quotation must be submitted in two separate sealed envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.