Global Tender Notification for the procurement of "RHEOMETER" at the Indian Institute of Science, Bangalore

(Last date of submission of tenders: 12-September-2021)

GTE APPROVAL NO: IISc-GTE-2021-075

Date: 11.08.2021

Dear Sir/Madam:

Please send your quotation valid for 120 days for the supply of equipment described below. Your quotation should clearly indicate the terms and conditions of the quotations, delivery, delivery schedule, entry tax, payment terms, warranty coverage etc. The tender should be submitted in two separate sealed envelopes – one containing the "Technical bid" and other containing the "Commercial bid", both of which should be duly signed and must reach the undersigned on or before 17:00 hours 12-Sept-2021.

The bids should be addressed to:

The Chairman
Department of Mechanical Engineering
Indian Institute of Science
Bengaluru 560012, India.
With attention to: Prof. Saptarshi Basu

The sealed bids should be sent to:

Prof. Saptarshi Basu,
Professor
Department of Mechanical Engineering
Indian Institute of Science
Bengaluru 560012, India.
Email to: sbasu@iisc.ac.in / saptarshibasukol@gmail.com

Please enclose a compliance statement along with the technical bid.

Section 1: Bid Schedule

1	Tender No	
2	Tender date	11 August 2021
3	Instrument	**RHEOMETER**
4	Tender type	1. Technical bid (part A) 2. Commercial bid (part B)
5	Place of tender submission	**The Chairman** Department of Mechanical Engineering Indian Institute of Science Bengaluru 560012, India. **With attention to: Prof. Saptarshi Basu**
6	Last date and time of tender submission	12-Sept-2021, 17:00hours
7	For Further clarification	**Prof. Saptarshi Basu,** Professor Department of Mechanical Engineering Indian Institute of Science Bengaluru 560012, India. Email to: sbasu@iisc.ac.in / saptarshibasukol@gmail.com

Section 2: Technical Specification

Description	Technical Aspect
Measuring head type	The motor should adhere to following specification: 1. Linear relationship between torque and driving current. 2. Less jitter.
Basic measurement modes	1. Controlled strain 2. Controlled stress
Minimum torque	1 nN.m or better (rotation); 0.5 nN.m or better (oscillation)
Maximum torque	220 mN.m or better
Torque resolution	0.05 nN.m
Motor bearings	Dual air bearings both in axial & radial direction
Speed range	10^{-8} (or less) to 314 rad/s

Motor control	Digital current source with high-speed digital signal processing
Angular frequency range	10^{-7} or less to 314 rad/s
Strain sensors	High resolution optical encoders
Measurement types	Rotational, oscillatory, direct strain amplitude and control stress oscillation, and transient (creep and relaxation), tack/squeeze.
Normal force	0.005 to 50 N or better, resolution 0.5 mN or better
Gap control (standard)	Automatic gap compensation
Sample loading	Automatic gap compensation
Sample loading	Automated electronic trim lock during sample loading and sample trimming
Pc interfaces	Direct USB interface, ethernet and serial interface
Temperature control device	Peltier based temperature control, ranges from 5 to 180 ^{o}C or better
Following measuring geometries shall be provided for biological samples, it should be cleanable and detachable for cleaning purpose and cleaning will be performed through autoclave / bleaching to remove bacteria and other inclusions or any foreign particles.	
Parallel plate geometries	Diameter: 25 mm & 50 mm (disposables & stainless steels)
Cone plate geometries	Diameter: 50 mm with 1 deg. Angle
Utilities	
Air compressor	100psi, 3.5 CFM oil free or better
Air dryer	Multistage membrane type including filter unit (microfilter) for removal of oil, particles and condensate.
Rheology software	
Analysis modules	Integrated modelling/curve fitting, rheo-optics adapter module, squeeze flow rheology and extensional rheology modules.
Testing protocols	Rotational with rate/control stress/combination of Controlled Shear Rate (CSR)+ Controlled Shear Stress (CSS),

	Oscillatory with strain / direct strain amplitude / control stress / combination of strain+CSS. Transient with creep(single/multi-level)/step-strain (stress relaxation) Combination with any modes above – e.g., transient+rotational or oscillatory+rotational. Elastic (G'), loss (G"), complex modulus (G*), Tan δ as a function of time, temperature, frequency, strain and stress in shear mode. Complex viscosity as a function of time, temperature, frequency, strain and stress.
Super-imposed testing	Steady shear over oscillatory simultaneous operation
Upgradability	The rheometer should be readily upgradable to the following and the same should be confirmed on manufacturer's website/catalogue with following specifications: 1. Second motor with axial force for DMTA applications in 3-point bending /dual cantilever & single cantilever modes and other compatible attachments Maximum force: 35 N or higher Maximum displacement: 9000μm or better Maximum frequency: 100 Hz or higher 2. Thermo-mechanical analysis (TMA) with an additional lower motor. 3. Microscopy attachment with polarizer and/or fluorescence filters and second rotational measuring drive allowing to visually monitor the stagnation

	plane of a sample in radial direction or with the help of a deflection mirror and a lower glass in axial direction while counter-rotation test is performed. 4. High temperature controls up to 600 ^{o}C for molten salts and metals.
Lab demonstration	Viscosity measurement of water must be demonstrated. Rheometery of one biological fluid (to be chosen later) should also be demonstrated.

Section 3: Terms and Conditions

1. All documentations in the tender should be in English.

2. Tender should be submitted in two envelops (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.

3. 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.

4. The SEALED COVER superscripting tender number / due date & should reach the office of **The Chairman, Department of Mechanical Engineering**, Indian Institute of Science, Bangalore – 560012, India, **With Kind attention: Prof. Saptarshi Basu** 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.

5. 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.

6. Any statutory increase in the taxes and duties after 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 later, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

7. The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

8. The vendor is responsible for the installation of the system at the institute.

9. The price quotation should include the cost of installation and training of potential users.

10. GST must be not more than 5% (Institute will provide you GST exemption certificate).

11. The system should be provided with at least three years of warranty, on all parts and labour, from the date of installation.

12. Imported items should be shipped on C.I.P. Bangalore basis (*by Air Freight only*) and all components and accessories indicating component-wise and itemized breakup. Provide certificates for country origin of manufacturing for each line items. Price of every line item in the commercial bid should be quoted along with the total quoted price for the instrument to be operational (installed and ready to use) in our facility.

13. The vendor should have qualified technical service personnel for the equipment based in India and should assure a response time of < 48 hours.
14. The Bidder should have supplied similar equipment in Central Universities preferably in centrally Funded Technical Institutes (IITs, JNCASR, IISC, IISERs, NIT). Vendor must provide a user list (with contact details including emails and phone numbers) of at least at least five identical instruments in IISc, JNCASR, IITs, IISERs, NITs with above mentioned specifications. Details of such systems should be provided.

15. 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.

16. 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 the above conditions without assigning any reason is reserved.

17. Wherever requested data must be supplied along with technical compliance documents. Technical bids without supporting data will be deemed as technically non-compliant.

18. 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.

19. Printed literature and published papers in support of all compliance with the prescribed specifications may be provided.

20. 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.

21. 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.

22. 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.

23. The quote should also include additional spares sufficient for 3-years.

24. The payment will be through FOR-IISc Bangalore only.

25. 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:

Date:
Seal:

Annexure 2:

Declaration regarding experience

To,
The Chairman,
Department of Mechanical Engineering,
Indian Institute of Science,
Bangalore – 560012,
India
Kind attention: Prof. Saptarshi Basu

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply of Rheometer

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 Rheometer.

(Signature of the Bidder)
Name:
Designation:

Date:
Seal:

Annexure 3:

Declaration of track record

To,
The Chairman,
Department of Mechanical Engineering,
Indian Institute of Science,
Bangalore – 560012,
India
Kind attention: Prof. Saptarshi Basu

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply of Rheometer

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)
Name:
Designation:

Date:
Seal:

Annexure 4:

Declaration of acceptance of terms and conditions

To,
The Chairman,
Department of Mechanical Engineering,
Indian Institute of Science,
Bangalore – 560012,
India
Kind attention: Prof. Saptarshi Basu

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Supply of Rheometer

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:

Date:
Seal:

Section 4: 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.