

**Request for Quote (RFQ) from domestic (India-based) manufacturers, Indian original equipment manufacturer or its authorized Indian distributor for procurement of Rheometer with temperature controller**

**Bid description**

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| <b>Tender number:</b>                                 | MRC/SR/2021/RHEO   |
| <b>Tender date:</b>                                   | 20 <sup>th</sup> December 2021   |
| <b>Item description:</b>                              | Rheometer with temperature controller  |
| <b>Tender type:</b>                                   | Two bid system:<br>(i) Technical Bid (Part A)<br>(ii) Commercial Bid (Part B)                |
| <b>Place of tender submission:</b>                    | The Chairman<br>Materials Research Centre<br>Indian Institute of Science<br>Bangalore 560012 |
| <b>Last date &amp; time for Submission of tender:</b> | 08 <sup>th</sup> January 2022, 5:00 PM   |

Dear Sir/Madam,

This is a Request for Quotations (RFQ) from **domestic (India-based) manufacturers, Indian OEM, or its authorized Indian distributor only** for procurement of a Rheometer with temperature controller Peltier at the Materials Research Centre (MRC), Indian Institute of Science, Bangalore.

All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below.

With respect to this tender, the rules laid out by the Government of India in order No. P45021/2/2017-pp-BE-II issued by the Public Procurement Section, Department of Promotion of Industry and Internal Trade, Ministry of Commerce, and Industry, dated 4th June 2020, will be followed. As per this order, the government has defined a 'Class-I local supplier' as "a supplier or service provider whose goods, services or work offered for procurement, has local content equal to or more than 50%". A 'Class-II local supplier' is "a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%". **Only Class-I and Class-II local suppliers are eligible to participate in this open domestic tender.** Any "Non-local supplier," i.e., "a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%" is ineligible to participate in this tender.

The deadline for submission of proposals is 08th January 2022 by 5:00 PM with proper signature/seal. Proposals should arrive at:

**The Chairman**

**Materials Research centre**

**Indian Institute of Science**

**Bangalore 560012**

**India**

Direct all questions concerning the acquisition to Dr. Subinoy Rana by email only at: [subinoy@iisc.ac.in](mailto:subinoy@iisc.ac.in)

**General Terms and Conditions:**

1. Quote should come only from domestic Class-I and Class-II (India-based) manufacturers, Indian original equipment manufacturers (OEM), or their authorized Indian distributors.
2. The bid should be submitted in the two-cover system, i.e., technical and commercial bids separately in sealed envelopes. The technical bid should contain all commercial terms and conditions, except the price.
3. The technical bid must contain a point-by-point technical compliance document. The technical proposal should include a compliance table that should explain your compliance in a "yes" or "no" response against each item in this RFQ. If the answer is "no," the second column should state the extent of the deviation. The third column should state the reason 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 requirement below.

4. In the commercial bid, the price (in INR) should include delivery, installation, commissioning, and training (at least four users) at customer's location.
5. Provide certificates for the country origin of manufacturing for each line item. The 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.
6. The covering letter should clearly state whether the vendor is a Class-I or Class-II local supplier. Failing this, the bid will be automatically rejected. The vendor must be ready to produce the original certificate of the class whenever sought after.
7. The vendor should state the percentage of the local content and provide self-certification that the item offered meets the minimum local content requirement. They should also give details of the location(s) at which the local value addition is made.
8. The lead time for the delivery of the equipment should not be more than three months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
9. All the quotations must be valid for at least 90 days at the time of submission.
10. The vendor should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact information.
11. The vendor must not be blocked/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect should be provided.
12. Items in addition to that listed in the technical section that you would like to bring to our attention, such as datasheets, technical plots, etc., can be listed at the end of the compliance section.
13. Vendors are encouraged to highlight the advantage of their tools over comparable tools from the competitors.
14. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.
15. The Institute reserves the right to accept or reject any bid or to annul the bidding process and reject all bids at any time before the award of contract without thereby incurring any liability of the affected bidder or bidders.
16. After the purchase order award, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.
17. Please quote the price of each optional line item separately. The quotations should be on for-IISc Bangalore basis in INR only.
18. The vendor should have a good track record of having previously supplied a minimum of three Rheometers in IISc and 10 or more Rheometers in Karnataka region and should be able to provide End User Certificates from at least five users.
19. If the goods are found to be defective, they have to be replaced or rectified at the cost of the supplier within 30 days from the date of receipt of written communication from us.

20. 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.

**Service, Training, and Warranty:**

1. The vendor must have local dedicated Sales & Service team & Application lab in Karnataka.
2. The vendor must demonstrate that it has a proven appropriate set-up and capability to provide after-sales service efficiently and effectively. The supplier should have a similar system in his facility to that proposed in this tender for training purposes.
3. On-site installation, commissioning, and training shall be conducted by a qualified factory-trained engineer.
4. Support should be available from Monday to Friday, 8.30 am to 5.30 pm (excluding Public Holidays), local time.
5. A declaration of Conformity certificate and System Validation certificate must be provided. All modules must be GLP compliant.
6. Warranty terms and additional warranty options are must for all the components. Please specify the service plan, like whether the local distributor will address the issue or the parent company. Minimum three years of complete system warranty should be given. If the system requires service during the warranty period, the vendor must guarantee or replace of instrument for free. Vendor to have logistic support to ensure that over at least 95% of the service parts are readily available and upkeep delivery within 24 hours.
7. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.
8. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

**Technical requirements:** Please note that the requirements listed below are only guidelines. Vendors are requested to quote for equipment that meets the criteria to the best extent possible and list deviations, if any. Deviations are NOT an automatic reason for disqualification. A technical group will discuss them before making an informed decision.

**Technical Specifications:**

The Rheometer system shall include the following individual stackable self-contained modules, and it must be controllable, monitored, capable of performing system maintenance using a standard web browser. Modules must be connected via fiber-optic noise-resistant high-speed transmission technology to enhance the reliability and sensitivity of the system.

| Description         | Tender Specifications   |
|---------------------|---|
| Measuring head type | The motor should adhere to following specification: <ul style="list-style-type: none"><li>• Direct Current permanent magnet synchronous motor</li><li>• Motor having linear relationship between the applied torque and driving current.</li><li>• Less jitter.</li></ul> |

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| Programmable lighting on measurement surface  | Rheometer should have programmable measuring-gap illumination for trimming and gap setting   |
| Measurement types   | Rotational and Oscillatory   |
| Torque range (Rotation & oscillation)   | 1 $\mu$ Nm to 120mNm or better   |
| Motor bearing   | Air bearings both in Radial and Axial  |
| Strain sensor   | High resolution optical encoder  |
| Frequency range   | $10^{-4}$ to 628 rad/s or better   |
| Angular Velocity  | $10^{-4}$ to 157 rad/s or better   |
| Angular resolution  | 615 nrad or less   |
| Maximum speed   | 1500 rpm or more   |
| Modes   | Strain, Rate, strain amplitude and stress amplitude  |
| PC interfaces   | USB & RS232  |
| Measuring plates  | Parallel Plate of 60 mm diameter stainless steel<br>Cone Plate of 25 mm diameter 1 Deg stainless steel   |
| Air cooled Peltier temperature controller for Cone & Parallel Plates Measuring Geometries | Temperature range - Upto 165 Deg C or higher   |
| Testing protocols   | <ul style="list-style-type: none"> <li>• Rotational with rate/control stress/combination of csr+css,</li> <li>• Oscillatory with strain / direct strain amplitude / control stress / combination of strain+css</li> <li>• Elastic (<math>g'</math>), loss (<math>g''</math>), complex modulus (<math>g^*</math>), tan delta as a function of time, temperature, frequency, strain and stress in shear mode.</li> </ul> |
| Electronic Trim Lock  | The Rheometer should have electronic lock to hold the Measuring systems stable during Trimming operation. This lock should be automatically activated by the system software.  |
| Automatic Gap Control and Setting   | The Rheometer system should have facility to Automatically set the gap and also control the Gap during measurement irrespective of the sample conditions.  |
| Automatic Configuration   | Rheometer should be configurable automatically as soon as it is connected to the PC with Rheometer software.   |
| Compressor  | Reputed make Oil free Compressor shall be provided to generate compressed Air pressure of 6 to 8 bar.  |
| Software  | Software is a major part and should have the following features:   |

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|                      | <ul style="list-style-type: none"> <li>• The operation of the system should be straightforward and intuitive via Windows based software.</li> <li>• It should cover full one-point digital instrument control, qualitative and quantitative processing, report creation, and self-diagnosis.</li> <li>• The sample schedule wizard function should be standard.</li> <li>• There should be an online help function context sensitive.</li> <li>• The reporting format should be flexible and easy to use in any desired format.</li> <li>• The data can be converted to other formats. Spread Sheet software and word-processing software can be readily employed to provide data in tables or graphs through industry-standard protocols.</li> <li>• The software should allow automatic execution of system checks.</li> </ul> |
| Warranty             | 3 Years of Comprehensive Warranty Shall be provided for trouble free maintenance from the date of Installation.  |
| Service Support      | Vendor should have their trained Sales, Service, & Application Engineers locally in Bangalore to provide immediate support within 24 to 48 Hours.  |
| Customer's reference | Vendor should provide 5 to 6 customers reference of similar model in any NITs, IITS, CSIR Labs or any Government Customers.  |

**Other requirements:**

- The payment terms should be specified in the commercial proposal, which should be consistent with IISc's domestic purchase policies.
- Please provide details of the number of trained personnel in India, the number in the southern region, or Bangalore who can service the instrument.
- Please include other options currently available which can be added in the future.
- The vendor should attach product brochures along with the technical bid.
- The vendor should supply standard accessories with additional SS/plastic tubing, ferrules, wrenches, etc.

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