

Domestic Tender

This is a Request for a quote (RFQ) from domestic (India-based) manufacturers or their authorized Indian distributor for the procurement of **High-Pressure Bench-Top Multi-batch Stirred Reactors** at the Centre for Sustainable Technologies (CST), 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.

The deadline for submission of bids is 30 January 2023 (5 PM IST). Proposals should arrive at the Department Office, Room No. 405, Centre for Sustainable Technologies, Indian Institute of Science, Bangalore, Karnataka 560012, India.

Direct all questions concerning the acquisition to **Dr. Navneet Kumar Gupta** by email only at: nkgupta@iisc.ac.in

General Terms and Conditions

1. Quote should come only from the Class I or Class II (India-based) manufacturers or their authorized Indian distributor; among all qualified bids, preference will be given to Class I Local Supplier.
2. The bid should be submitted in the two-cover system, i.e., technical bid and commercial bid separately in sealed covers. 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 contain a compliance table that should describe your compliance in a "yes" or "no" response against each of the items in the table listed in this RFQ. If the response 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 table below.
4. 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. Please quote the price of each optional line item separately.
5. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).
6. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
7. All quotations must be valid for at least 90 days at the time of submission.
8. List of customers and references: The Bidder should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISc, IISERs, NITs, CSIR Labs, etc.). Please provide the details and contact information.
9. The Bidder must NOT be blacklisted/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.
10. Items in addition to that listed in the technical table that you would like to bring to our attention, such as data sheets, technical plots, etc., can be listed at the end of the compliance table.
11. Vendors are encouraged to highlight the advantage of their tools over comparable tools from the competitors.
12. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.

13. The Institute reserves the right to accept or reject any bid or to annul the bidding process and reject all bids, at any time prior to the award of the contract without thereby incurring any liability of the affected bidder or bidders.
14. After the award of the purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.
15. The vendor should have a good track record of having previously supplied similar equipment to government institutions. The vendor should be able to provide End User Certificates from at least five users.
16. The vendor is encouraged to provide recommendation letters from the user's university/institute, and the contact of people with the PO number.
17. 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.
18. The detailed technical literature and make of each component should be submitted by the bidders.
19. The quotations should be on FOR-IISc Bangalore basis.
20. Only vendors who are compliant with the technical requirements will be considered for commercial comparison. The bid is awarded to the lowest-cost vendors (referred as L1).
21. The commercial comparison is done as per Government of India rules, specifically GFR 2017. Note that GFR has recently been amended. We shall follow the GFR rules as they stand on the date the tender has been released.
22. As per recent edits to the GFR, there are three classes of vendors distinguished by their "local content". In the cover letter, vendors must mention what applies to them:
 - a. Class 1 supplier: Goods and services have a local content equal to or more than 50%
 - b. Class 2 supplier: Goods and services have a local content of more than 20% but less than 50%
 - c. Non-local supplier: Goods and services have a local content equal to or less than 20%

Service, Training, and Warranty

1. The vendor must have local dedicated Sales & Service team & Application lab in Karnataka or a nearby area (should be able to attend within 24 h).
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 their 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 a must for all the components. Please specify the service plan, like whether the local distributor will address the issue or the parent company. A minimum of 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 3 working days.
7. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.
8. Vendor to provide a copy of the Site-Preparation checklist.

9. If there is any delay in replacement or rectification, the warranty period should be extended accordingly.
10. Any problems that occurred during the warranty period should be rectified within 2 weeks.

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. They will be discussed by a technical group prior to making an informed decision.

Technical Specification: High-Pressure Bench-Top Multi-batch Stirred Reactors should be quoted as per the following specifications.

High-Pressure Bench-Top Multi-batch Stirred Reactors	
<p>Four reactor modules, each vessel of 100 ml capacity, ID 40 mm Depth 83 mm SS316 Rated for 200 bar at 300 °C, PTFE/equivalent gasket stable up to 300 °C, Split ring closure with six compression bolts, Benchtop stand for the fixed head. Heater 600-watt 230 V in steel casing for each vessel, 90W DC Motor 3000 RPM, Belt drives with a pulley to control stirrer speed from 100 RPM to 3000 RPM, Magnetic Drive SS316 Torque 16 kgf-Cm with Cooling Jacket, Fixed Head with following features:</p>	
Specifications	<ul style="list-style-type: none"> • The volume capacity of each reactor should be 100 mL net (Solid bar stock without welding) • The vessel ID should be ~40 mm • The vessel's internal height should be ~83 mm • The minimum stirrable volume should not exceed 20 ml • Material of Construction: Stainless steel 316 • Design pressure: 200 bar or better • Design temperature: 300 °C or better • Heating type: Electrical ceramic band heater with cladding & insulation & heater temperature control for 300 °C (Temperature Control accuracy $\pm 1^{\circ}\text{C}$) or better • Motor and drive: Benchtop stand with 90W DC Motor 3000 RPM • Speed: 100 to 3000 RPM (Belt drives with a pulley to control stirrer speed) • Shaft sealing: Magnetic Drive (SS316) with Cooling Jacket, and it should be zero leakage magnetic drive • Stirrer: 2 Stage 4 blade turbine Stirrer • Gasket: Suitable up to 300 °C or better • Closure Type: Split ring closure with six compression bolts • Possibility of changing the reactor volume should be provided • Teflon/glass lining should be provided • Each reactor module should have an individual skid/structure and individual control panel • Dimensional tolerance for all components should be +/- 0.1 mm
Head with the following features	<ul style="list-style-type: none"> • Agitator: Shaft & PBT (4 blades) Type • Liquid Sampling Valve must be provided to withdraw liquid samples during experiments at high temperatures and pressures • Gas Inlet Valve must be Swagelok make • Gauge block assembly with 150 Bar Pressure Gauge or better

	<ul style="list-style-type: none"> • Vent/Gas Release valve • Type “K” thermocouple • Rupture Disc Burst Pressure 2000 psig • Ceramic Band Heater 450-watt 230 VAC • In steel casing with type K thermocouple
Control Panel and Display System	<ul style="list-style-type: none"> • The process parameters will be controlled and monitored through a panel • PLC Based control panel should be provided • Control the parameters like temperature (± 1 °C), pressure ($\pm 2\%$) & RPM (± 5 RPM) • Visual display and graphs on the HMI screen • Ramp Soak programming for temperature control • Safety Audio alarm with heater cut-off 230V 50Hz • Provision to connect to SCADA to be provided for future upgradation
Auto cooling system	Auto cooling system with water pump for forced cooling SS tank & hose pipes for exothermic reactor and faster cooling.
Skid	Each Reactor is designed to fix on skid mounted structure made up of heavy-duty aluminum extruded pipe. There should be arrangements to place each reactor individually with a separate control panel.
Accessories	<ul style="list-style-type: none"> • Some spare consumables (such as hose pipe, tubing, ferrules, etc.) must be provided for the first 3-5 years. • Additional Teflon/glass lining: 10 no. • Additional gas kets: 10 no.
Optional	SCADA system, including PC and software, should be provided as an option
Installation and commissioning	Installation and commissioning should be done within a week of delivery, and complete training should be provided to personnel at IISc

Warranty: Three years standard warranty to be offered on the entire system.

Training: The system should be accompanied by a Conformity Certificate.
Onsite demonstration and training for the faculty/scientists/students to be provided periodically for the handling of the system and its application.
A declaration of Conformity certificate & System Validation Certificate must be provided.
Suppliers should have an application lab and a local office, preferably in Karnataka.

Optional items: Total warranty of 3 years + 2 years AMC optional.

Other Requirements

1. The payment terms should be specified in the commercial proposal, which should be consistent with IISc’s domestic purchase policies.
2. Please provide details of the number of trained personnel in India, the number in the southern region, or Bangalore who can service the instrument.
3. Please include other options currently available which can be added in the future.

4. The vendor should attach product brochures along with the technical bid.
5. A set of basic experiments for performing routine checks of acceptable operation with clear instructions to be provided. A standard sample to estimate column efficiency should be included.
6. The quotations should be in INR only.

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