

Telephone : 91-532-227+1122, 1123
 Fax : 0532-2545341, 2545822
 GRAM : MNNIT
 Website : http://www.mnnit.ac.in
 Email : spo@mnnit.ac.in,
 fip@mnnit.ac.in



मोतीलाल नेहरू राष्ट्रीय प्रौद्योगिकी संस्थान इलाहाबाद,
 इलाहाबाद-211004 (भारत)

Motilal Nehru National Institute of Technology Allahabad
 Allahabad-211004 (India)

An Institute of National Importance as Declared by NIT Act, GOI, 2007

INVITATION FOR SUPPLY OF MICRO-REACTOR TEST RIG
(For Contracts value estimated to cost less than Rs.25 lakhs)

1	Closing Date/Time for submission of Quotations	05/03/2014; 14:30 Hrs.
2	Opening Date/Time of Quotations	05/03/2014; 15:00 Hrs.
3	Quotations to be submitted at	The Office of Faculty-In-charge (Purchase) M.N.N.I.T. Allahabad, Allahabad-211 004 (U.P.)
4	Place of opening of quotations	The Office of Faculty-In-charge (Purchase) M.N.N.I.T. Allahabad, Allahabad-211 004 (U.P.)
5	Tender Fee	Rs. 200.00 (Non-refundable), in form of a Demand Draft drawn in favor of DIRECTOR, MNNIT Allahabad.
6	Earnest Money Deposit (EMD)	Rs. 40,000/- (Rs. Forty Thousand only) , in form of FDR/Bank guarantee, from any of the Commercial Banks, drawn in favour of "Director, MNNIT Allahabad" payable at Allahabad, and valid for a period of 45 days beyond the final bid validity period.

To,

Dear Sir

You are invited to submit your most competitive quotation for the following items. The quotation should be sent directly to the undersigned under Sealed Cover marked "Quotation Reference No., Date", and "The Due Date":

Sl. No.	Description of item with Specification	Quantity (No.)
1	MICRO-REACTOR TEST RIG Full Specification as per ANNEXURE 'B'	01

The sealed tenders must be submitted in the Office of the Faculty In-charge (Purchase), on or before **due date & time as mentioned above** in the office of the undersigned, in the presence of bidder's authorized representatives, who choose to attend and shall sign a register evidencing their attendance.

The tender/quotations NOT submitted in the prescribed format or Incomplete in any respect will be outrightly rejected.

Faculty in-Charge, Purchase
 MNNIT Allahabad

GENERAL TERMS & CONDITION (GCC)

1. **Bid Price:**
 - (a) The contract shall be for the full quantity as described above. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.
 - (b) All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price.
 - (c) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
 - (d) The prices should be quoted in Indian Rupees only for indigenous items. For items/imported items, the prices should be quoted in foreign currency.
 - (e) Each bidder shall submit only one quotation.
2. **Validity of Quotation:**

Quotation shall remain valid for a period not less than **120 days** after the deadline date specified for submission.
3. **Evaluation of Quotations:**
 - (a) The purchaser will evaluate and compare the quotations determined to be substantially responsive, i.e., which
 - (i) are properly signed; and
 - (ii) conform to the terms and conditions, and specifications.
 - (iii) will be with tender fees, and EMD required, if any.
 - (b) The Quotations would be evaluated separately for each item.
4. **Award of Contract:**

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

 - Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
 - The bidder whose bid is accepted will be notified for the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order if falls under Govt. purchase rules, i.e., GFR-2005
5. **Formats and Signing of Bid:**
 - Each & every pages of the submitted bid must carry the page numbers.
 - The bidders are not allowed to make additional and alteration in the tender document, any additions and alteration in the tender document, any additions and alterations shall be at bidder's risk. Conditional/modified tender are liable to be rejected.
 - The tender/quotations NOT submitted in the prescribed format or Incomplete in any respect will be outrightly rejected.
 - If the bid submitted without compliance sheet details of items the bid will be outrightly rejected.
 - The bid shall be typed or written in indelible ink and shall be signed by the Bidder/Tenderer or a person or persons duly authorized to bind the Bidder/Tenderer to the Contract. All pages of the bid, except for unamended printed literature, shall be initialed by the person or persons signing the bid.
 - Any interlineations, erasure or overwriting shall be valid only if they are initiated by the persons or persons signing the bid.
 - The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.
6. **Payment condition:** 100% Payment shall be made only after satisfactory delivery of items in good condition and receive satisfactory report by competent authorities after completion of the works. Advance payment is not permitted.
7. Normal Commercial warranty/ guarantee (if applicable) to the supplied goods.

INSTRUCTIONS/GUIDELINES TO BIDDERS (ITB)

1. Bidders who had supplied the Government departments, PSUs/NITs/IITs/IIITs and reputed Institutions and Organizations should only apply.
2. The bidder should enclose the clential list with contact address along with Phone/Fax for reference, for the quoted item.
3. Please quote the prices of F.O.R. Motilal Nehru National Institute of Technology Allahabad, Allahabad.
[NOTE: Custom/Excise Duty Exemption Certificate will be provided by MNNIT Allahabad after receiving your request letter for the same.]
 - MNNIT Allahabad avails Custom Duty Exemption in terms of Government Notification N. 51/96-Customs dated 23 July, 1996, and Central Excise Duty Exemption in terms of Government Notification N. 10/97-Central Excise dated 01 March, 1997, as amended from time to time.
4. The Bidders are requested to submit their Quotation with EMD in the form of Demand Draft/ Bank Guarantee/ Short term Deposit of the cost of items in favor of "The Director, MNNIT, Allahabad" payable at Allahabad. Quotation without EMD will be summarily rejected. EMD's of all Bidders will be returned back after the purchase order /contract agreement is issued to successful bidder.
5. Successful Bidders must have to submit the performance security @ 5% of the purchase order or contract value and it will be retained up to the warranty period.
6. The bidder should enclose relevant documents wherever necessary to substantiate his eligibility.
7. The Institute is eligible for and can provide necessary documentation for Custom/Excise and Octroi exemption on demand, if permitted under rule.
8. Motilal Nehru National Institute of Technology Allahabad, Allahabad, reserves the right to reject, accept any or whole or part of any of the tender without assigning any reason thereof and no claim will be heard. In case of dispute, the decision of The Director, MNNIT, and Allahabad will be final and binding.
9. If the successful bidder is not able to supply the goods items within the delivery date specified in the purchase order, the purchase order will be automatically treated as cancelled after expiry of delivery date period. The vendor will have to submit an undertaking in this regard that this condition is acceptable to him. In case of extra ordinary circumstances the vendors must send a request for extension of validity of purchase orders, with proper justification prior to the expiry of validity date for consideration.
10. In case of sophisticated items, an on-site training needs to be provided with no extra cost.
11. The quotation must be accompanied by leaflets/operation manuals/books etc.
12. Wherever applicable the vendors must quote the branded /desired items.

CHECK LIST
(ON THE LETTER HEAD OF THE BIDDER)

The Bid will be the compilation of following documents, along with required supporting documents. No document in support of minimum eligibility criteria will be accepted / entertained after opening of tender.

Sl. No	Documents
1.	Cover letter by bidder (On the Letter Head of the Bidder)
2.	Tender Fee
3.	Earnest Money Deposit (EMD), if required
4.	Cliental List for quoted item
5.	Annexure-A : Bid Proposal Sheet (On the Letter Head of the Bidder)
6.	Annexure-B : Technical Specification of Item
7.	Annexure-C : Compliance of bidder with reference to the 'Micro Reactor Test Rig' (On the Letter Head of the Bidder)
8.	Annexure-D : PRICE BID (On the Letter Head of the Bidder)

ANNEXURE-A

BID PROPOSAL SHEET
(ON THE LETTER HEAD OF THE BIDDER)

To
Faculty In-charge (Purchase)
MNNIT Allahabad, Allahabad

Subject: Supply of "Micro-reactor Test Rig" at MNNIT Allahabad, Allahabad.

Dear Sir,

We, the undersigned Tenderers, having read and examined in detail the specifications as specified in this document in respect of Supply of **Micro-reactor Test Rig** at MNNIT Allahabad, Allahabad do hereby propose to supply the required products and services.

Tender No.				
Tender Fees submitted		YES / NO (Please strike off whatever is not applicable)		
Amount	Mode	Date of Issue	Name of Bank	Valid up to
	Demand Draft			
EMD submitted		YES / NO (Please strike off whatever is not applicable)		
Amount	Mode	Date of Issue	Name of Bank	Valid up to
	Demand Draft			

- (i) **ADDITIONAL PURCHASE/WORK ORDER:** We understand that the MNNIT Allahabad, Allahabad, in case of the requirements may also place repeat purchase order/work order on the company. In such cases, we shall accept and execute all the purchase/work order placed on us by MNNIT Allahabad, Allahabad.
- (ii) **BID PRICING:** We further declare that the prices stated in our proposal are in accordance with your Terms & Conditions in the bidding document. We further understand that the quantities as specified in this Tender may increase or decrease at the time of Award of Purchase Order as per the requirements of MNNIT Allahabad, Allahabad.
- (iii) **QUALIFYING DATA:** We confirm that we satisfy the qualifying criteria and have attached the requisite documents as documentary proofs. In case you require any further information/documentary proof in this regard during evaluation of our bid, we agree to furnish the same in time to your satisfaction.
- (iv) **CONTRACT PERFORMANCE SECURITY:** We hereby declare that in case the contract is awarded to us, we shall submit the performance Guarantee Bond in the form of Bank Guarantee for the amount of 10% of the total order value.
- (v) **PAYMENT TERMS:** We hereby declare that in case the contract is awarded to us, we agree with payment terms specified in the tender documents.
- (vi) **CERTIFICATE AND DECLARATION:**
 - a) I/We certify that no addition/modification/alteration has been made in the Original Tender Document. If at any stage addition /modification /alteration is noticed in the Original Document, I/We will abide by the terms and conditions contained in the original tender document, failing which MNNIT Allahabad reserves the right to reject the tender and/or cancel the contract
 - b) It has been certified that all information provided in tender form is true and correct to the best of my knowledge and belief. We hereby declare that our proposal is made in good faith, without collusion or fraud. No forged /tampered document(s) are produced with tender form for gaining unlawful advantage. We understand that MNNIT Allahabad is authorized to make enquiry to establish the facts claimed and obtained confidential reports from clients.
 - c) In case it is established that any information provided by us is false / misleading or in the circumstances where it is found that we have made any wrong claims. Further MNNIT Allahabad is also authorized to blacklist our firm/company/agency and debar us in participating in any tender/bid in future.
 - d) I / We assure the Institute that neither I /We, nor any of my /our workers, will do any act which is improper / illegal during the execution in case the tender is awarded to us.
 - e) I / We assure the Institute that I / We will NOT be outsourcing any work specified in the tender document, to any other firm.
 - f) Neither I / We, nor anybody on my /our behalf will indulge in any corrupt activities /practices in my /our dealing with the Institute.
 - g) Our Firm / Company / Agency is not been blacklisted or banned by any Govt. Department, PSU, University, Autonomous Institute or any other Govt. Organization.
 - h) I/We certify that, I have understood all the terms & conditions (GCC and ITB etc.), as indicated in enquiry of the tender document, and hereby accept all the same completely.
 - i) I/We, further certify that I/We, possess all the statutory /non-statutory registrations, permissions, approvals, etc., from the Competent Authority for providing the requisite services,
 - j) We understand that you are not bound to accept the lowest or any bid you may receive.
 - k) I/We hereby declare that this tender on acceptance communicated by you shall constitute a valid and binding contract between us.
 - l) I/We certify that the submitted quotation is duly paginated and contains from page no. 1 to

Date:

Signature and Seal of the Manufacturer/Bidder

TECHNICAL SPECIFICATIONS OF MICROREACTOR TEST RIG

Microreactor: T type, Y type and Cross flow type; Diameter and Material of Construction: 1 mm Glass/PMMA (one each of T-type, Y-type and cross flow type), 0.5 mm Glass/PMMA (one each of T-type, Y-type and cross flow type); 0.1 mm Glass/PMMA (one each of T-type, Y-type and cross flow type); Straight reaction channel; Reaction channel length: 150 mm; Flow rate: up to 5 L/h; Maximum operation reaction channel viscosity: app. 22.5 m Pas; supports gas liquid reactions, Connection: Readymade Teflon tubes and fittings (UNF thread 1/4"). Chemically inert, Easily replaceable without disturbing the rest of Test Apparatus.

Dual-syringe infusion/withdrawal syringe pump: Both infusion, both withdrawal, one infusion and one withdrawal type; Syringe size accepted-10 μ L to 100 ml; Flow range per syringe-0.01 μ L/hr to 100 ml/min; Syringe travel time- 9.5×10^{-6} mm/min; Reproducibility- $\pm 0.2\%$; Accuracy- $\pm 0.5\%$; Linear force-40 lb/sq. In; Working Media: liquids and gases; Supported Software

Pressure sensors: capable to measure pressure across microreactor channel length OR individual pressure measurement at inlets and outlet, Ranges: 0-15 Bar; Accuracy: $\pm 0.25\%$ all Full Scale; Operating Temp: 0/60°C; Storage Temp: 40/180°F; Temp. Corrected; Pressure Media: liquid and gas; Supported Software,

Thermocouple: k Type; Accuracy: $\pm 0.5\%$ full-scale; Response: very fast; Temperature reading should be at least in double decimal scale. To detect temperature at test section, inlet and outlet of the microreactor.

Liquid filter: Filter material- PTFE; Retention volume- Less than 0.20 ml; Pore size-0.2 μ m; Maximum operating pressure- 200 psi at 25°C; Maximum operating temperature - 100°C ; operating pH - 2-10, positioned at inlets.

Gas filter: Filter material- PTFE; Pore size-0.2 μ m; Maximum operating pressure- 100 psi at 25°C; Max operating temp. - 50°C, positioned at inlets.

Mass Flow controller: Thermal MFC Aluminium and VITON O-ring; 1/4" Connection; Flow rate: 0-10 STD ml/min for CO₂; LCD Display; STD metering Pressure (14.7PSIA); STD Temperature: 25°C; Accuracy: $\pm 0.5\%$; Repeatability: $\pm 0.5\%$ of Full scale; Max. Gas pressure: 1000 psig (70 bars); Supported Software

Gas cylinder: Pure CO₂ gas cylinder + Pure N₂O gas cylinder with mixer and very low flow regulators

Niddle valves: To control flow of gases and liquid from cylinder and liquid source tank

Connections: appropriate connections for set up should be ideally of Teflon tubing (UNF thread 1/4")

Data acquisition: A desktop computer system (HP/DELL) with suitable software supports to use pressure sensors, Mass Flow Controller and Syringe pump with following Technical specification must be available with the experimental set up: Windows 8, 18.5" inch LED Monitor, Intel Core i7 processor, Graphics card 1GB, 6 GB RAM, 1 TB Hard Disk, DVD+/-RW, Integrated Audio; USB Keyboard + USB Optical Mouse; Ethernet; laser printer; UPS; original copy of window, Motherboard driver and printer software's.

Frames and Panel: The whole set-up must be well designed and assembled on a good quality powder coated painted iron frame with appropriate panel board for various operations.

**Technical Compliance of ‘Micro-reactor Test Rig’
(ON THE LETTER HEAD OF THE BIDDER)**

S. No	Item Description	Whether meet the requirement (Yes/No)	Quoted Models specifications
1	<p>Microreactor: T type, Y type and Cross flow type; Diameter and Material of Construction: 1 mm Glass/PMMA (one each of T-type, Y-type and cross flow type), 0.5 mm Glass/PMMA (one each of T-type, Y-type and cross flow type); 0.1 mm Glass/PMMA (one each of T-type, Y-type and cross flow type); Straight reaction channel; Reaction channel length: 150 mm; Flow rate: up to 5 L/h; Maximum operation reaction channel viscosity: app. 22.5 m Pas; supports gas liquid reactions, Connection: Readymade Teflon tubes and fittings (UNF thread 1/4"). Chemically inert, Easily replaceable without disturbing the rest of Test Apparatus.</p> <p>Dual-syringe infusion/withdrawal syringe pump: Both infusion, both withdrawal, one infusion and one withdrawal type; Syringe size accepted-10 µL to 100 ml; Flow range per syringe-0.01 µl/hr to 100 ml/min; Syringe travel time-9.5 x 10⁻⁶ mm/min; Reproducibility-±0.2%; Accuracy-±0.5%; Linear force-40 lb/sq. In; Working Media: liquids and gases; Supported Software</p> <p>Pressure sensors: capable to measure pressure across microreactor channel length OR individual pressure measurement at inlets and outlet, Ranges: 0-15 Bar; Accuracy: ±0.25% all Full Scale; Operating Temp: 0/60°C; Storage Temp: 40/180°F; Temp. Corrected; Pressure Media: liquid and gas; Supported Software.</p> <p>Thermocouple: k Type; Accuracy: ±0.5% full-scale; Response: very fast; Temperature reading should be at least in double decimal scale. To detect temperature at test section, inlet and outlet of the microreactor.</p> <p>Liquid filter: Filter material- PTFE; Retention volume- Less than 0.20 ml; Pore size-0.2 µm; Maximum operating pressure- 200 psi at 25°C; Maximum operating temperature - 100°C ; operating pH - 2-10, positioned at inlets.</p> <p>Gas filter: Filter material- PTFE; Pore size-0.2 µm; Maximum operating pressure- 100 psi at 25°C; Max operating temp. - 50°C, positioned at inlets.</p> <p>Mass Flow controller: Thermal MFC Aluminium and VITON O-ring; 1/4" Connection; Flow rate: 0-10 STD ml/min for CO₂; LCD Display; STD metering Pressure (14.7PSIA); STD Temperature: 25°C; Accuracy: ±0.5%; Repeatability: ±0.5% of Full scale; Max. Gas pressure: 1000 psig (70 bars); Supported Software</p> <p>Gas cylinder: Pure CO₂ gas cylinder + Pure N₂O gas cylinder with mixer and very low flow regulators</p> <p>Niddle valves: To control flow of gases and liquid from cylinder and liquid source tank</p> <p>Connections: appropriate connections for set up should be ideally of Teflon tubing (UNF thread 1/4")</p> <p>Data acquisition: A desktop computer system (HP/DELL) with suitable software supports to use pressure sensors, Mass Flow Controller and Syringe pump with following Technical specification must be available with the experimental set up: Windows 8, 18.5" inch LED Monitor, Intel Core i7 processor, Graphics card 1GB, 6 GB RAM, 1 TB Hard Disk, DVD+/-RW, Integrated Audio; USB Keyboard + USB Optical Mouse; Ethernet; laser printer; UPS; original copy of window, Motherboard driver and printer software's.</p> <p>Frames and Panel: The whole set-up must be well designed and assembled on a good quality powder coated painted iron frame with appropriate panel board for various operations.</p>		

=====

ANNEXURE-‘D’

**PRICE BID
(ON THE LETTER HEAD OF THE BIDDER)**

Sl. No.	Description of item with Specification	Quantity (No.)	U/ Price	T/Price (in Rs.)	
				In Figures	In Words
1	MICRO-REACTOR TEST RIG	01			
	Full Specification as per ANNEXURE ‘B’				

We agree to supply the above goods in accordance with the technical specifications for a total contract price of _____ within the period specified in the Invitation for Quotations.

Signature and Seal of the Manufacturer/Bidder

Note:

- Bidders should provide copies of original Memorandum and Articles of Association, defining the constitution of legal status, place of registration and place of business of the company.