



# राजकीय इंजीनियरिंग कालेज

कटरिया याकूबपुर, अम्बेडकर नगर (उ०प्र०) – 224122 भारत



## Rajkiya Engineering College

Katariya Yakoobpur, Ambedkar Nagar, (U.P.) – 224122 Cell Phone: 91-9454439590

AICTE APPROVED GOVERNMENT ENGINEERING COLLEGE Website: [www.recabn.ac.in](http://www.recabn.ac.in)

VIDE APPROVAL LETTER No. F. No. Northern/1-3511948247/2018/EOA DATED: 30-Apr-2018 E-mail: [director@recabn.ac.in](mailto:director@recabn.ac.in)

Affiliated to Dr. A.P.J. Abdul Kalam Technical University Lucknow, U.P., India

RECABN/TEQIP-III/20/342

Date: 07/03/2020

### INVITATION FOR QUOTATION FOR NANO MATERIAL RESEARCH LABORATORY

To,

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Dear Sir,

You are invited to submit your most competitive quotation for Nanomaterials Research Laboratory for the Rajkiya Engineering College, Ambedkar Nagar. In this connection, submit your financial offers/quotations as per the product in the given format in Annexure-II Nanomaterials Research Laboratory. The details of specifications is given in Annexure-I

Sr. No	Name of Particular/ Product	Quantity (nos.)	Place of Delivery
1.	FUME HOOD	1	REC, Ambedkar Nagar
2.	Ultrasonicator	1	REC, Ambedkar Nagar
3.	Magnetic stirrer with hot plate	1	REC, Ambedkar Nagar
4.	Muffle furnace	1	REC, Ambedkar Nagar
5.	Hot Air Oven	1	REC, Ambedkar Nagar
6.	Hydraulic Press	1	REC, Ambedkar Nagar
7.	Dessicator	1	REC, Ambedkar Nagar
8.	Spin Coater	1	REC, Ambedkar Nagar
9.	Microwave Synthesizer	1	REC Ambedkar Nagar
10.	Rotavapor Vacuum Pump with Chiller	1	REC, Ambedkar Nagar
11.	Centrifuge	1	REC, Ambedkar Nagar
12.	Vacuum filtration assembly along with vacuum pump	1	REC, Ambedkar Nagar

*Sanjay*

Government of India has received a credit from the International Development Association (IDA) in various towards the cost of the **Technical Education Quality Improvement Programme (TEQIP) Phase -III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

**Instructions for bidders:**

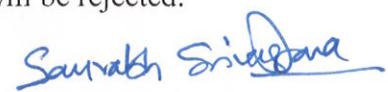
1. The quantity of the items is as mentioned in above table.
2. The bidders should quote their offer/rates in package and not for individual items with clear terms without any ambiguity.
3. The Institute will select bidder who has offered the lowest aggregate cost for complete set of items.
4. All duties, taxes and other levies payable by the bidder shall be included in the total price.
5. 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.
6. The cost should be quoted in Indian Rupees only.
7. Quotation/Offer shall remain valid for a period not less than 45 days after the last date of submission.
8. For the said product warranty should be at least One year/ onsite manufacture warranty.
9. Bidder should be submitting an authorization certificate from OEM/Manufacture/Dealership.
10. All technically qualified vendor will be called for Pre-Demo for equipment and setup.
11. The last date of submission of offer is **21/03/2020** by **5:00 PM**.
12. The quotation opening date will be notified later.
13. Sealed quotation to be submitted/ delivered at the address mentioned below:

Quotation (In the name of)	Delivery Address
<u>TO</u> <u>DIRECTOR</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>	<u>TEQIP-III OFFICE</u> <u>RAJKIYA ENGINEERING COLLEGE</u> <u>AMBEDKAR NAGAR</u> <u>PIN CODE-224122, UTTAR PRADESH</u>

14. Bidders should mention at the top of envelop:

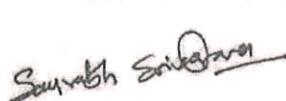
**Quotation for Nano Material Research Laboratory Under TEQIP-III** (in bold)

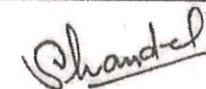
15. Make & Model of original manufacturer must be mentioned, and catalogue of quoted model should be attached.
16. Submit a GSTIN registration and PAN copy of firm duly signed.
17. Finally selected vendor have to arrange a pre demo of equipment's at REC Ambedkar Nagar or manufacturer site. All expenses should be born by the final qualified vendor for pre-demo.
18. Delivery of the said items should be within 30 days from the date of P.O.
19. Performance security of 5% of total amount should be submitted by vendor within one month of receiving of P.O.
20. Payment shall be made in Indian Rupees as per P.O. no advance will be paid for the said.
21. Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the process and reject all quotations at any time prior to the P.O.
22. Postal or courier delay will not be considered, and the bid received late will be rejected.

  
(TEQIP-III Coordinator)

### Specification of Equipments for Nanomaterials Research Laboratory

S.No	Item	Qty
1	<b>Fume Hood:</b> stainless steel frame (SS 304) with workable table of SS/ Granite top size 4'x2'x2' . Provided with Fluorescent light , Gas cock, Exhaust system, with sink and water tap. CE Certified	1
2	<b>Ultrasonic Cleaner 9 Lit capacity:</b> with built-in Generator & Solid state Circuitry unique auto tuning feature, 30/40Hz Frequency for effective cleaning and low noise level, fitted with Deep drawn tank off SS. Outer & Inner made of SS. Fitted with digital Timer & Digital Temp Controller, CE Certified	1
3	<b>Research Centrifuge:</b> max. speed 17300 RPM, step less speed regulator with zero start interlock, Digital speed regulator, Dynamic Brake, 0-99 minutes digital countdown timer, complete with 8x50ml, 12x15ml & 24x1.5ml head	1
4	<b>Magnetic Stirrer:</b> with Stainless Steel enamel Hot Plate (Max. temp. 340°C), LCD display of speed & temp with external PT-1000 probe & stand, max Capacity 5 Lit	1
5	<b>Muffle Furnace:</b> Temp range ambient to 1500C, Working Temp 1400C with Digital Temp Controller . Kanthal Super-N/ Silicon carbide rods , step down transfer , Voltmeter, Ammeter, Indicators , Size of heating Chamber 150x150x300mm, Complete with crucible, tonges and gloves, CE Certified	1
6	<b>Hot Air Oven:</b> SS body inside &MS Outside .Range 50-250C,1C acc., controlled with PID controlled Digital display. Provided with air ventilator. inner size 455x455x455, CE Certified	1
7	<b>Hydraulic Press:</b> Hydraulic press for pallets preparation, with high pressure pumping unit	1
8	<b>Vacuum Desiccators:</b> 250mm complies with IS 6128 with ground glass flages	1
9	<b>Vacuum Filtration system:</b> 2 lit cap complete with vacuum pump oil free	1
10	<b>Spin Coater</b> <ul style="list-style-type: none"> <li>• Touch Screen User Interface</li> <li>• Vibration Less Operation</li> <li>• USB Storage Facility</li> <li>• Live RPM Feedback With Line Graph Plots</li> <li>• RPM Range:100-12000</li> <li>• Acceleration Rate: 8000RPM/Sec</li> <li>• Hybrid (Vacuum &amp; Vacuum-Less)</li> </ul>	1





	<ul style="list-style-type: none"> <li>• High Precision Drives</li> <li>• PID Controlled</li> <li>• N2 Purging Facility</li> <li>• Compact In Size &amp; Shape (Glove Box Compatible)</li> <li>• 16GB Of Internal Program Storage</li> <li>• SS Enclosure</li> <li>• Transparent Acrylic lid with a facility for dynamic coating→</li> <li>• Dimension (Lxbxh): 10x11x1-2(Inches)</li> <li>• Weight: 11.3 Kgs</li> <li>• Chamber Size: 250mm Diameter</li> <li>• Power Input: 115/230 Vac,50 Hz</li> </ul>	
<b>Accessories:</b>		
	Universal Chuck (Vacuum-Less) – (Accommodates 4 inch, 3 inch, 2 inch silicon wafers, 75x25mm microscopic glass slide, 1x1 inch substrates)	1
	Vacuum Chuck – According to the requirement	1
	Third Party Vacuum Pump	1
11	<p><b>Microwave Synthesizer</b></p> <ul style="list-style-type: none"> <li>• Synthesis Reactor should able to handle the synthetic reactions involving routine organic, organometallic, Nano materials synthesis, polar as well as non-polar solvents, etc. with small footprint, rapid heating, easy handling and intuitive programming.</li> <li>• Max. operating Temperature: 250 °C or higher</li> <li>• Max. Pressure: 20 bar (290 psi) or higher</li> <li>• Volume : 10 mL Sealed vessels</li> <li>• MOC: Borosilicate Glass</li> <li>• Ability to effectively heat polar as well as non-polar solvents.</li> <li>• Temperature Measurement via an integrated contact temperature sensor</li> <li>• Integrated Pressure Sensor to measure, display as well as document reaction pressure.</li> <li>• Should have inbuilt magnetic stirrer device with variable speed from 300 rpm upto at least 1000</li> <li>• rpm or more to ensure uniform temperature in the reaction volume.</li> <li>• Should be supplied with Borosilicate Glass Vials of 10 ml capacity with sustainable material of</li> <li>• Construction and allow for multiple reaction runs to be conducted in the same vial.</li> <li>• Sealing of reaction vessels should be easy and without use of any tools.</li> </ul>	1

*Sambit Sahoo* *Boniswar Chaudhuri*

	<ul style="list-style-type: none"> <li>• Touchscreen display with capability for online graphical display of reaction parameters like pressure and temperature against time and review of previous reaction runs</li> <li>• Direct export of data to RTF or CSV formats via USB ports</li> <li>• Required consumables for trouble free operation of the instrument should be quoted.</li> <li>• Instrument should be smaller in size of approx. 200 x 400 x 250 mm</li> </ul>	
12	<p><b>Rotavapour System with Chiller:</b></p> <p><b>Features:</b></p> <p><b>Rotavapor</b></p> <p>Electronic lift with provisions for automatic lifting of the flask in case of power failure.</p> <ul style="list-style-type: none"> <li>– Rotation speed up to 280 rpm or better with microprocessor control.</li> <li>– Cooling surface area of 1500 cm<sup>2</sup></li> <li>– End stop positioner adjustable via button within a range of 170 mm with a stroke distance of 220 mm.</li> <li>– Multifunctional combi-clip for easy removal and fixation of evaporating flask</li> <li>– 7-stage adjustable immersion angle for the use of different flask sizes with maximum adjustable angle of 40 degrees.</li> <li>– Large top hole Vertical condenser with Screw cap SVL 22 and P+G coating</li> <li>– Digital display of set and actual bath temperature, rotation speed and lift position.</li> <li>– Microprocessor controlled bath temperature ranging from ambient to 220 deg C with an accuracy of <math>\pm 1</math> deg C.</li> <li>– Transition of heating bath data to interface through Infrared Communication.</li> <li>– Automatic over heat cut-off protection</li> <li>– Cordless heating bath for easy emptying and filling of water bath without removing electrical cables.</li> <li>– Evaporating flask from 50-5000 ml can be used on the same joint adapter without additional connections.</li> <li>– 1 liter Evaporating Flask and Receiving Flask should be provided in</li> </ul>	1

*Sarath Srinivasan* *Anisay Shandul*

standard scope of supply.

- IP 21 Protection Class

### Vacuum Controller Interface

- Control unit with LCD display for centrally controlling all process parameters of a Rotavapor like rotation speed, bath and coolant temperature, pressure, process time etc.
- Manual management of pressure settings and aeration with timer function
- Clock-wise and anti-clockwise rotation of evaporating flask for a defined time range.
- Automatic aeration when pressure is above 1400 bar.
- Integrated solvent database for setting up dynamic distillation conditions.
- Integrated wear part library for common wear parts with order code.
- Integrated leak test to check possible leaks
- Measuring range: 1400- 0 mbar.
- Control range: ambient to 0 mbar.
- Remote control of Rotavapor, Pump and Chiller
- Woulff bottle included

### Vacuum Pump

- Single stroke Speed control vacuum pump with a flow rate of 1.8 m<sup>3</sup> /h.
- Ultimate vacuum – 5 mbar
- Chemically resistant diaphragm made of PTFE
- Glass window to check solvent build up and contamination.
- Sound Level adjustable as per EN 61010-1 between 32-57 dBA.
- Power saving mode.

*Saurabh Srivastava*  
27/02/19

(Dr. Saurabh Srivastava)  
Asstt. Professor, Dept. of APSH  
REC Ambedkar Nagar

*Devendra P. Mishra*  
27-02-2020

(Dr. Devendra P. Mishra)  
Asstt. Professor, Dept. of APSH  
REC Ambedkar Nagar

*Chandek*  
27.02.2019

(Dr. Vishal S. Chandel)  
Professor & Head, Dept. of APSH  
REC Ambedkar Nagar

Annexure-II

**FORMAT FOR QUOTATION SUBMISSION**  
(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_  
\_\_\_\_\_

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							
Gross Total Cost (A+B): Rs. _____							

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_  
(Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No. \_\_\_\_\_