



# NETAJI NAGAR COLLEGE FOR WOMEN

(Reaccredited by NAAC with Grade B')

170/13/1, N.S.C Bose Road

Regent Estate, Kolkata-700092

Email: [netajinagarwomen@yahoo.com](mailto:netajinagarwomen@yahoo.com),

Website: <https://netajinagarcollegeforwomen.in/>

Ref. No. NNCW/DST-SERB-EEQ/12

Date, 16/05/2024

## Tender/Quotation Notice

### Subject: Notification Inviting Quotations for Procurement of Various Equipment

Quotations are invited for purchasing the following **Equipment under ANRF/SERB sponsored project (FILE NO. EEQ/2023/000316) under Dr. Pradip Thakur (PI)**. Interested authorized vendors are requested to submit or send (through speed post) their quotations on or before **25/05/2024 (at 3.00 pm)** in a sealed envelope addressed to "**Dr. Pradip Thakur, Department of Physics, Netaji Nagar College for Women, 170/13/1 N. S. C Bose Road, Kolkata-700092**".

### Descriptions:

Equipment name	Descriptions/Specifications	Warranty/Remarks
<b>1. Electrospinning Instrument</b>	<p>The Instrument should have following basic features:</p> <ol style="list-style-type: none"><li><b>Spinning arrangement</b><ul style="list-style-type: none"><li>Vertical spinning should be utilized for fibers requiring specific properties.</li><li>Horizontal spinning must be employed for applications where fibers are extruded horizontally.</li><li>Co-Spinning is recommended for creating composite fibers with enhanced properties.</li><li><b>Co-axial Spinning</b> for better control over fiber structure and should be considered.</li><li>Multi-Jet spinning provides greater efficiency and should be preferred for high-volume production.</li><li><b>Wet Electrospinning spinning must be available when solvent assistance is necessary for fiber formation.</b></li><li>The adjacent distance between spinneret and collector must not exceed 250 mm for optimal fiber quality.</li><li>A temperature and humidity control are required for maintaining ideal production conditions.</li><li>High-Speed exhaust blower should be integrated for effective removal of hazardous solvent fumes.</li><li>A UV Light (10 watts) is required for better sterilization of equipment and surroundings.</li></ul></li><li><b>High Voltage</b><ul style="list-style-type: none"><li>Output voltage should range from 0 to 50 KV with an accuracy of <math>\pm 0.05\%</math>.</li></ul></li></ol>	<p>One or Three year standard warranty</p> <p>OEM Should have their own service center in India and NABL accredited calibration laboratory for after sales support in India.</p>

- Voltage adjustment increments must be at least 0.1 KV.
- Output current must range from 0 to 400  $\mu$ A.
- Digital display for monitoring both voltage and current is necessary.
- Overload trip feature must shut down the unit if current exceeds 20% of the maximum output.
- High voltage protection should automatically engage when the door is opened to ensure safety.

### 3. Infusion

- Two units of Syringe Pump Single Channel are needed.
- Infusion function must be included in each pump.
- Volume, time, and flow control capabilities are essential.
- Acceptable syringe volume range should be 5  $\mu$ l to 20 ml.
- Flow rate control should range from 1  $\mu$ l/min to 3 ml/min with an accuracy of  $\pm 0.05\%$ .

### 4. Collector

- The static plate collector must possess the capability to produce a nanofiber coating with dimensions at least equivalent to A4 paper size. The collector's dimensions should ideally be L = 220 mm or greater and W = 150 mm or greater thickness = 10mm
- Drum should be in the range of Diameter of 85 mm and length of 165 mm and disk also the range of Diameter of 85 mm and length of 10 mm
- RPM: Should be Range from 100 RPM to 5000 RPM

### 5. Spinneret

- A single nozzle system is required for extrusion purposes.
- The co-axial nozzle should comprise a core with a gauge of 21 G and a shell with a gauge of 16 G.
- A **Capillary type multi-jet nozzle for fabricating high throughput nanofibers**

### 6. Linear Stage

- X-Axis: Software automated distance adjustment for precise positioning.
- Y-Axis: Programmable transverse motion capability to facilitate controlled movement.
- Stroke distance of 300 mm with three speed adjustment options (Slow, Medium, and Fast) for flexible operation.
- Z-Axis: Manual distance adjustment feature for vertical positioning as needed.

### 7. Operational Control

	<ul style="list-style-type: none"> <li>● A branded laptop with pre-installed electrospinning Machine software &amp; USB Drive must be provided.</li> <li>● Realtime- camera to monitor process.</li> <li>● An emergency stop feature must be included.</li> <li>● A main ON/OFF switch should be provided.</li> <li>● An exhaust speed regulator must be included.</li> </ul> <p><b>8. Accessories</b></p> <ul style="list-style-type: none"> <li>● Accessories must include syringes (3ml or 5ml), spinning samples (PAN or PVDF)</li> <li>● Allen key set, screwdriver set, insulation pad/foot pad, Teflon sheet, 5m chemical-resistant tube, tube connectors</li> </ul>	
<b>2. Desktop</b>	<p><b>Specifications and Accessories:</b>  Intel Core I7 13700 K. 13 Gen CPU/Giga byte  RAM 64 GB, 12 GB graphics, Cooler fan, 32 inch Monitor, Mouse  Keyboard, UPS, attaching Color Printer with scanning facility etc.</p>	<p>Three years  Warranty and  own service  center in  KOLKATA</p>
<b>3. Centrifuge Machine (High Speed)</b>	<p><b>The Machine specifications:</b></p> <ol style="list-style-type: none"> <li>1. Maximum speed : 15000-20000 RPM</li> <li>2. Temperature variation (Preferable)</li> <li>3. Rotor Head : 12 X 15 ml or 8 X 50 ml</li> <li>4. Two set high quality centrifuge tubes of (15 ml or 50 ml) compatible to rotor head.</li> </ol>	<p>Three years  Warranty and  own service  center in India  (Preferably in  KOLKATA)</p>

Last Date of submission or sending (through POST) of the quotation: 25/05/2024 (at 3.00 pm)

**\*Note:**

1. Authority has the right to cancel any notification inviting quotations for procurement of the equipment under unavoidable circumstances.
2. Authority/ Principal Investigator of this project have the right to reject any quotation if it fails to fulfil general norms.
3. The authority reserves the right to accept/reject any quotation without showing any reason thereof.
4. The payment will be done after successful installation of instrument.
5. The decisions of the Authority will be final in this regards.
6. Authority is not liable of any delay of the POSTAL System. The Quotation should be reached to above mentioned address within the last date of the tender.

*Pradip Thakur*  
Dr. Pradip Thakur (PI)

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