

**JAWAHARLAL NEHRU TROPICAL BOTANIC GARDEN & RESEARCH  
INSTITUTE,**

(An Institute of Kerala State Council for Science, Technology and Environment, National Centre of Excellence, Govt. of India )Palode, Thiruvananthapuram. 695562, Kerala, India)Tel: +91 (0) 472-2869626, 2869628, Fax: + 91 (0) 472 – 2869646, 2869226.

**e-Tender Notice**

Tender ref no: JNTBGRI/1172/VGY/A325/PCC(P)/24 13-06-2024

**Tender id:2024\_KCSTE\_676018\_1**

e-tenders are invited from competent vendors for the supply of Electrospinning Unit with the following specifications at JNTBGRI, Palode, Thiruvananthapuram

Sl. No.	Item with complete Description	No.
1.	<p><b>Electrospinning Unit</b></p> <p><b><u>Specifications</u></b></p> <ul style="list-style-type: none"> <li>• <b>Cabin configurations:</b> Standalone unit with in-built power supply and wiring for the heater, lighting and exhaust. Size not less than 1200mm (length) x 850mm (width) x 1500 mm (height) size. Epoxy coated for electrical insulation. contain cabin heater adjustable upto 40-45°C, contain residual charge discharge stick to remove static current. Must contain safety switch to switch off high-voltage power supply when door is opened. Contain exhaust fan for solvent vaporization and cooling. Emergency stop should be included. Proper lighting (forward/back ground) of the cabin with adjustable switches is needed. Contain transparent doors (three sides) for monitoring electrospinning process.</li> <li>• Coaxial spinneret suitable to spin hollow nanofibers and core / sheath nanofibers with different polymers simultaneously.</li> <li>• Graduation scale should be provided on the granite/suitable non-corrosive surface in X &amp; Y direction to positioning of syringe pump and target.</li> <li>• Include user friendly software for the regulation and control of rotating mandrel speed, spin duration, syringe pump flow rate, vertically target movement etc. This can be done through control panel or through PC.</li> <li>• Rotating mandrel targets of varying diameters, rotary wire collector, stationary target and reciprocating vertically moving target should be provided with the system.</li> <li>• Contain built-in arc protection circuit</li> <li>• High Voltage Power Supply Front panel adjustable power supply of 0 - 30kV single output, 0.5mA max current, include digital voltmeter and current meter, include static removal shorting stick, mode of operation should</li> </ul>	

<p>include both constant current /constant voltage, and should include built-in ARC circuit protection.</p> <ul style="list-style-type: none"> <li>• Independently controlled dual channel syringe pump The flow rate can be adjusted at a rate ranging from at least 20 µl/hr to 600 ml/hr through microprocessor-based control circuit. Dispenser can hold four syringes simultaneously. Syringe pumps control should be independent. The syringe diameter, spin duration or the target volume can be set through the appropriate software interface. Syringe holder should be made of insulated material to work under high voltage conditions, Motor control through microcontroller to control and indicate flow rate. Can hold standard disposable or glass syringes of 2.5 to 60ml size, The maximum travel distance (to and fro in X axis) of the syringe is 200mm. include Independent spinneret holder which can adjust the position of Spinneret independently that of syringe holder.</li> <li>• Collectors</li> <li>• Rotary collectors Rotary stainless-steel drums collector of 100mm, and 50mm diameter with 200mm length. Adjustable drum speed ranges from 300rpm to 4000rpm with speed stability of +/- 1%. Suitable grounding of the drum to the HV power supply. Collector may contain a rotary wire collector with speed controller.</li> <li>• <b>Stationary collector</b> Contain table top, vertically standing stainless steel stationary plate (dimension atleast 250 x 175 x 3mm) collector with grounding facility. The stationary collector plate should have programmable Y axis motion profile and PC based motion control with documentation of parameters like speed, traverse, motion profile and duration.</li> <li>• <b>Spinneret</b> Should include <b>four flat tipped</b> metal needle spinneret, and <b>one Co-axial spinneret</b> for simultaneous flow of two different solutions.</li> <li>• <b>Accessories</b> Normal Glass Syringe (20 ml) : <b>4 numbers</b> Glass Syringe with tube connector (20 ml): <b>4 Numbers.</b> Teflon Tube: <b>1 meter.</b> UV Curing Lamp (preferably 254nm) with on/off switch: <b>1 number.</b></li> </ul>	1 no.
<b>Tender Form Fee:</b> Rs. 1500/- +12% GST	
<b>EMD:</b> Rs. 9000/-	
<b>Place and date of issue of tender form:</b> <a href="http://www.etenders.kerala.gov.in">Online (www.etenders.kerala.gov.in)</a> <b>Tender ID:</b>	
<b>Last date &amp; time of receipt of filled tender bids :</b> 05.07.2024 upto 5:00 pm	

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**Date & time of opening of tender bids :** 08.07.2024 at 10:00 am  
**DR. S PRADEEP KUMAR.**  
**DIRECTOR(I/C)JNTBGRI**