

**Centre for Biomedical Engineering  
Indian Institute of Technology, New Delhi**

**Notice Inviting quotations**

Dated: 24.01.2013

Sealed quotations in separate envelop of technical and commercial bid kept in one sealed outer envelope are invited for **Electrospinning Unit** as per specifications given below. Your sealed quotation should reach latest by 5.30 P.M. on 8.02.13 to the **Head, Centre for Biomedical Engineering, Indian Institute of Technology, Delhi (IIT Delhi), Hauz Khas, New Delhi-110016 attention Prof. Veena Koul.** Your quotation should be super-scribed “**Electrospinning Unit (Horizontal)**”.

**Technical Specification for Electrospinning Unit (Horizontal)**

(All the component should be compatible with the system)

- 1) High Voltage Power Supply range 0 KV to 40 KV
  - On-line and Off-line mode for editing the output high voltage.
  - Monitor for display of voltage.
  - Current: 0 - 100  $\mu$ A
  - Adequate protection: If current exceeds 10 mA, system will trip. Good earthing facilities.
  
- 2) Micro Controller based Syringe dispenser- Fully programmable with Multisyringe facility
  
- 3) Two syringe pumps (One for the production of conventional nano fibers and other for the production of core sheath nano fibers along with a co- axial spinneret.)
  - A. Pump specification:
    - Micro controller based flow rate measurement and control
    - Feed Rate – 0.006 to 60 ml/hr in steps of 1 $\mu$ l/min.
    - Number of attachable syringe – 1 and/or Multiple(3 or 5)
    - Glass Syringe with luer lock (Volume): 2.0, 5.0 & 50.0 ml
  
- 4) Spinneret:
  - Facility for co- axial spinning
  - No. of attachable needles (stainless steel): 1 (standard); 3 (Optional)
  - Programmable motorized Motion along – Y Axis 50 mm.
  - Distance between the spinneret and collector is adjustable using a linear scale along the ‘X’ axis( motor driven).
  - Extra Needles ( 18G, 22G,26G),
  
- 5) Collectors (6 types):
  - A. Plate Collector
    - Plate area: 300 $\times$ 300 cm<sup>2</sup> (approx.)
  
  - B. Disc Collector
    - Disc diameter: 70 cm (approx.)

- Rotating speed : 500 – 3000 rpm (approx.)
- C. Drum Collector - Traverse motion in collector
- Fiber Deposition area: 870 cm<sup>2</sup> (approx.)
  - Rotating speed : 500 – 3000 rpm (approx.)
- D. Egg-Cocoon shaped Collector
- E. Moving platform (Flat) with controlled speed Collector
- F. Parallel plate for oriented fibre.
- 6) Safety Feature:
- A. Safety Door Lock System
- HVPS will automatically turn OFF when the spinning chamber is opened.
  - Provision/Switch for skipping this option to take pictures.
  - Emergency STOP Button: Shuts down whole power supply of system.
  - Controlled temperature and humidity.
  - Pilot Lamp: It is ON when high voltage is working.
- B. Fume cabinet with
- Exhaust Fan
  - Air Exhaust Filter
  - Traps the evaporated solvent and flying nano-fibers in the spinning chamber.
  - HEPA filter for nanofibers
- 7) Enclosure
- Dust proof chamber for clarity and resistant solvent.
  - Suitable exhaust facility
  - Safety mechanism for high voltage power supply.
  - Rubber mat for user safety
  - Proper cable lightening and ventilation and emergency stop.
  - Chemically resistant silicon tubing between syringe & spinneret (Length: 1m)
  - Connectors fixed between syringe & tubing.
  - Digital temperature display & Controller to connect to airconditioner
  - Humidity display & controller to connect to humidifier / dehumidifier
  - Stand to mount the Electrospinning unit.
  - Inlet and outlet valves should be provided to evacuate the air and fill the ESU with inert gas.
  - Necessary cables and accessories.
  - Operation instruction and warranty card.
  - Optional:
    - Core processor based PC with basic configuration of 500GB HDD 4GB RAM 17” LCD keyboard, mouse and windows 7 based O/s.
    - Humidity controller (Dehumidifier)

**Terms & Conditions: Care should be taken to keep the technical and commercial bid separately and finally should be kept in a sealed outer envelope marked with quotation for horizontal electrospinning unit.**

1. The quotations must have validity of at least three months.
2. Quotation must include insurance and air-freight charges, delivery period of the items
3. The products will be used for educational purposes. Any applicable academic institution discounts should be offered and stated clearly.
4. Detailed Brochures should accompany the offer.
5. If the bidder is an authorized dealer then the authorized Indian dealership certificate from the principles should be enclosed.
6. Payment will be after complete installation of machine via demand draft.
7. In case the items are proprietary products of the company, Proprietary item certificate from the manufacturer stating the same must be provided with the quotation.
8. Training / Installation should be provided.
9. Quote should include taxes and freight to IIT Delhi
10. The cost should include installation and training for smooth running of equipment.
11. Warranty period should be specified.
12. Institute reserves the right to accept or reject any or all the quotations without assigning reasons thereof.