Nanofiber Electrospinning System

Model: NANON-01A

Develop future applications by combining system parts and spinning conditions.

The model NANON-01A is a nanofiber electrospinning system for R & D purpose. A variety of materials can be spun by programming spinning conditions and combining system parts such as spinnerets and collectors.

- **Spinning high uniformity and quality nanofiber sheets**
  
  MECC’s unique technology creates stable electronic fields, enabling spin of nanofibers of uniform fiber diameter and with very few droplets.

- **Quick and easy programming with a 10-key controller**
  
  With a 10-key controller makes quick and easy programming of parameters such as: High voltage, Solution volume, Feed rate, Diameters of syringes, Rotation speed of collectors, Width of spinnerets, Traversing speed, and Frequency and intervals of cleaning.

- **Easy replacement of system parts**
  
  Both spinnerets and collectors can be replaced quickly and easily.

- **Spinning aligned membranes of super low orientation**
  
  Membranes of super low orientation at 5 degree or less can be spun. (patented)

- **Integrating cleaning mechanism**
  
  The system has a cleaning mechanism for syringe needles, and the cleaning frequencies and intervals are preprogrammable.

- **Safety measures for operators**
  
  The system is equipped with safety devices for operators such as a door interlock, emergency stop switches, a signal tower, strengthened glass and instant shutoff of high voltage output.

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Purpose of Use
- Research and development

Typical Objects
- Nonwovens, Aligned (oriented) membranes
- Coaxial fibers, Hollow fibers

Standard parts
- Plate collector, Clip spinneret

Optional parts
- Collector
  - Drum (φ100 W200, φ200 W200, φ100, w30)
  - Disk, Mandrel, Roll-to-roll 200mm
- Spinneret
  - Tubeless 75mm, Coaxial 75mm, Ultra-thin coaxial 75mm, Multiple jet 4-holes
- Syringe pump (externally installed)

High Voltage Supply
- Voltage: 0.5kV to 30kV (program resolution: 0.5kV)
- Current: 50 to 150mm

Traverse Speed
- 0 to 300mm/s

Collector Rotation Speed
- Drum: 150 to 3000rpm
- Mandrel: 50 to 500rpm

Distance between Needle and Collector
- 50 to 150mm

Programmable Parameter
- High voltage output
- Pump discharge volume
- Collector rotation speed
- Vertical moving distance of slider
- Frequency and interval of cleaning
- Moving distance and speed of spinneret

Fan Exhaust Volume
- 12m³/hr or more

Pump Discharge
- 0.1 to 60ml/hr

Syringe Volume
- 2.5, 5.0, 10.0 (ml)

Safety Device
- High voltage interlock, Door lock (option)
- Emergency Stop button, High voltage lamp
- Strengthened glass, Purification filter for exhaust gas

General Specifications
- Operational temperature: 20 to 30 degree C
- Operational humidity: 30 to 70% (without dews)
- Rated voltage: 85 to 125VAC / 170 to 250VAC
- 50Hz / 60Hz
- Power consumption: 1kW or less
- External dimensions: 830 W x 630 D x 880 H (mm)
- Internal dimensions: 550 W x 400 D x 580 H (mm)
- Weight: 140kg or less

MECC CO., LTD.
196-1 Fukudo, Ogori-shi, Fukuoka 838-0137
JAPAN
Phone: +81-942-41-2900  Fax: +81-942-41-2205
E-mail: askmecc@mecc.co.jp
URL: www.mecc.co.jp