

ELECTRO SPINNING

Asian Nanostructures Technology Company (ANSTCO) is an Iranian leading company in the production of a wide variety of organic and/or inorganic nanofibers and nanoparticles through electrospinning and electrospraying processes. Fabricating various types of nanofibrous products in large scales, ANSTCO paves the way for academic and industrial development in nanotechnology. The proposed technology provides the supporting means for innovations and inventions at various levels in nanotechnology fields. Offering a great variety of nano-scaled products, ANSTCO makes the nanotechnology applications possible.



Applications

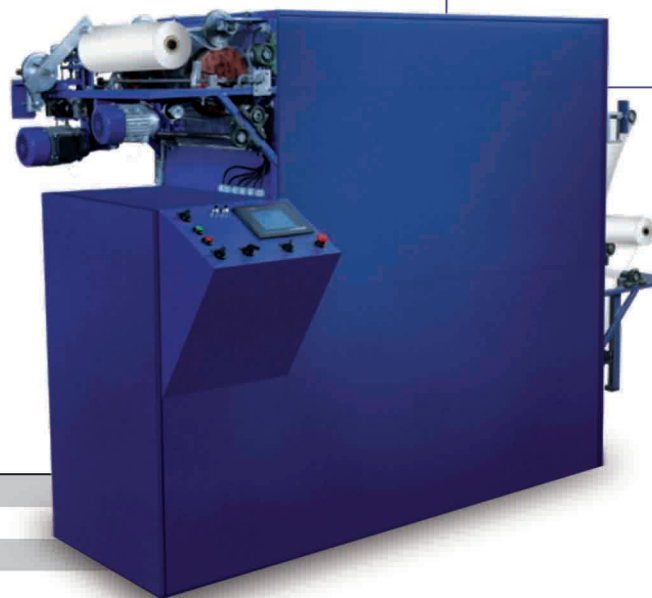
- Filtration
- Textile manufacturing
- Artificial organ components
- Tissue engineering
- Implant materials
- Drug delivery
- Wound dressing
- Medical textile materials
- Composites
- Energy storage
- Catalyst and enzyme carriers
- Sensors
- Electrodes of Li-ion Batteries
- Solar cell and fuel cell Electrodes
- Optoelectronics
- Photoluminescence
- Supercapacitors
- Actuators

Electrospinning systems are capable of producing micro and nano fibers of polymers, ceramics materials. It is suitable for processing air/moisture/bio - sensitive chemicals and materials. ANSTCO series are complete systems with computer controlled collector movement, flow rates and environment. Completely isolated working chamber allows using toxic solvents and reduces influence of the environment to the process.



Features

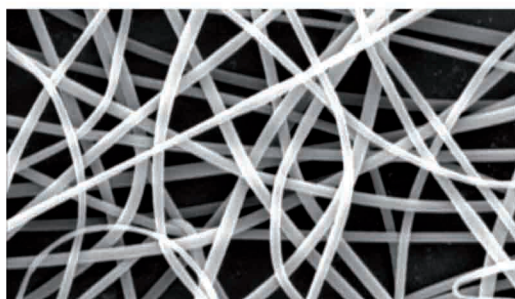
- Electrospinning and Electrospray
- Electrospinning systems
- Precision fluid metering pump
- Various collectors
- Safety precaution



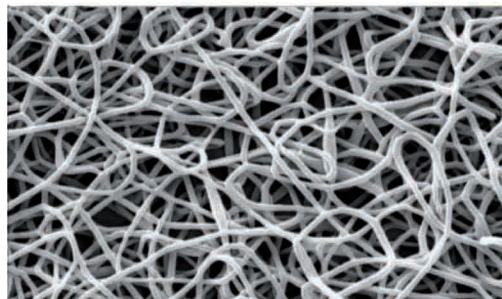
SPECIFICATIONS

High Voltage Power Supply (HVPS) unit	
Number of HVPS units	2
Voltage	0 - 35.00 kV
Emission current	Max 500 μ A
Collectors	
Plate collectors (Static)	Width: 20 - 100 mm Height: 20 - 100 mm
Disc collectors (Dynamic)	Diameter: 50 - 100 mm Rotating Speed: 0 - 2500 rpm
Drum collectors (Dynamic)	Diameter: 1.0 - 100 mm Length: 50 - 100 mm Rotating Speed: 0 - 2500 rpm
Spinning system	
Number of spinning heads	2 independent ES heads equipped with well-designed automatic AutoClean system
Number of attachable nozzles	Max 3 on each ES head
Feed rate	0.1 - 5.0 ml/hr
Nozzles' dimension	Length: 35 mm & Inner Diameter: Max 1 mm
Nozzles' transverse speed	0.1 - 10.0 mm/sec
Electrospinning distance	3.0 - 25.0 cm
Dimension	W100cm \times D80cm \times H140cm
Total weight	180 kg

Results



SEM Micrographs of
PMMA Electrospun nanofibers



SEM Image of Electrospun
nanofibers of PVDF