

## **Characteristics of Nanospider™ technology**

### High productivity & scalability

- highly efficient spinning heads (no needles)
- industrial working width: currently up to 1,6 m (64")
- high production up time utilization (>90%)
- modular design enabling increase in the productivity by adding spinning units in series

### Easy maintenance

- easy cleaning (no needles = no clogging)
- ergonomic design allowing access to process areas (service table)

### Economical operation

- high throughput
- short downtimes / high utilization
- low operational costs
- energy efficient production
- low consumption of raw materials
- limited use of operating staff

### Top quality of nanofibers

- high fiber morphology and homogeneity
- ability control fiber diameters mean diameter  $\pm\%$
- controlled productivity rate (the finer fiber the lower productivity)
- in-situ production control of nanofiber homogeneity
- in-situ differential measurement of pressure drop
- indicating of spinning process (by level of electrical current)

### High-level safety

- compliance with CE standards
- robust body designed for handling of high voltage and combustible material
- defined atmosphere securing non-explosive environment
- controlled ventilation of spinning chamber (automatic stop in case of fault alert, inert gas input)
- dual-skin construction (atmosphere with lower air pressure between spinning chamber and outer skin)
- discharging system for residual charge elimination
- automatic safety and fault alert stop

### Flexibility

- great variability of processed materials
- possibility to use a big variety of substrates
- easy to adapt process parameter to optimize the nanofiber layers