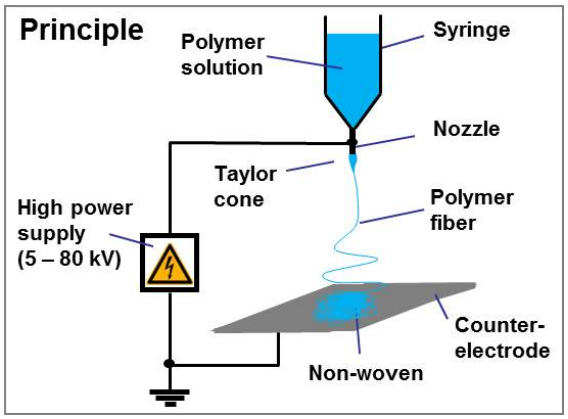
Electrospinning

Transfer Offer

The technology of electrospinning allows the production of nano- and microfibers and nonwovens from different materials (synthetic/natural polymers, blends, composites), with different geometries and morphologies from solutions and melts.



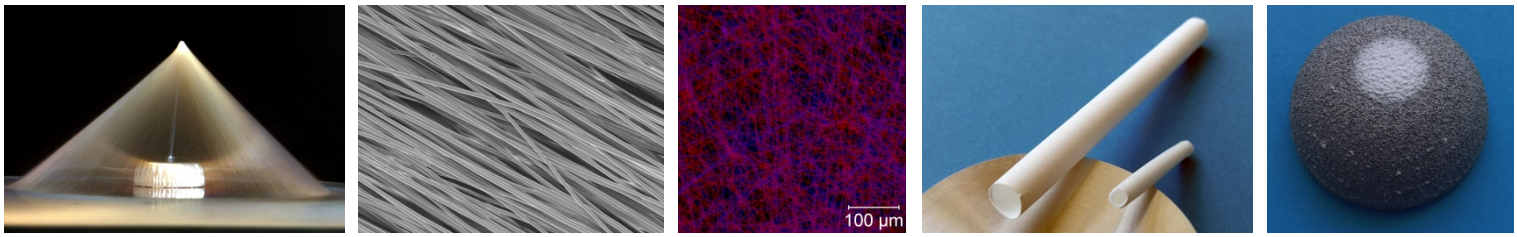
Principle of electrospinning to produce ultra-thin fibers

Technology

At INNOVENT nano- and microfiber-based materials with the following properties can be produced:

- Ultra-thin fibers (diameter: 50 nm – 2,5 µm)
- Large surface/volume ratio
- High mechanical fiber/nonwoven strength
- Processing from solution, suspension or melt
- Adapted fiber morphologies (smooth, structured, porous) and arrangements (randomly oriented, highly aligned)
- Incorporation of dyes and active agents, inorganic/organic nanoparticles, living cells
- Open-pored non-wovens (gas and liquid permeability)
- Surface coating, surface derivatization (additional cross-linking)
- Different fiber variations (single, multi, coaxial fibers) and non-woven shapes (round, square, tubular)

Electrospinning system E-Spintronic (E. Huber GmbH)



Selected structures of electrospun materials

Advantages and Application Possibilities

- Wide range of applications in life science and technology
- **Medical Applications:** Drug delivery systems with defined release kinetics, wound dressings, artificial tissue structures for tissue engineering and regeneration, diagnostics
- **Technical Applications:** Micro- and optoelectronics, sensor technology, filtration, catalysis, substance separation, decontamination of hazardous substances, safety systems

State of Development/Equipment and Property Rights

INNOVENT has two modern, climate-controlled electrospinning systems (E. Huber GmbH) and a melt electrospinning prototype for specific applications.
Industrial property rights for special applications in life science and medicine are possible.

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