



MELT SPINNING AND MELTBLOWN PROCESSES

- 1 *Trilobal filaments extruded in the melt spinning process (70f)*
- 2 *Bio-based, thermally resistant stereocomplex PLA yarns*
- 3 *Bicomponent fibers (core / sheath)*

Opportunities

The core competence of the Fraunhofer IAP in the development of innovative thermoplastic fibers lies in the implementation of spinning processes with novel materials.

For many years, we have acted as a competent partner in a wider range of research projects and support companies in implementing their visions in textile and technical applications.

The focus of our research is the realization of the stability of the manufacturing process necessary for industrial practice as well as the optimization of textile-physical properties of the fibers, which is made possible by a comprehensive characterization of the supermolecular structure (degree of crystallinity, orientation of the polymer chains, etc.).

Services

- Rheological and thermoanalytical characterization
- Implementation of melt spinning and meltblown processes
- Sample production of multi/monofilaments (kg scale) and staple fibers (> 2 mm) with various cross-sectional geometries
- Identification of structure-property correlations of the fibers
- Visualization of the melting behavior (hot stage light microscopy)

Equipment

- Bicomponent melt spinning line (up to 3 kg/h, 180-1800 m/min)
- Meltblown device (15 cm belt width)
- Nozzle geometries (Bico: core/sheath; Mono: circular, trilobal, hexagonal)
- Post-drawing devices, hot air treatment, staple fiber cutter

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