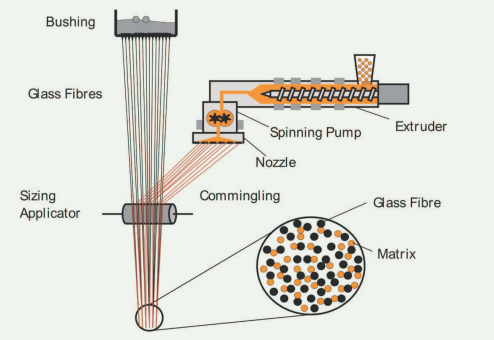
Leibniz-Institute of Polymer Research Dresden e.V.

GLASS FIBRE SPINNING DEVICE AND INTERFACE DESIGN

Application Laboratory

- Know-how from basic research is directly transferred to industry-oriented projects and into practise
- **Customer-specific** development of surface modified special-purpose glass fibres and fibre-reinforced composites with high proficiency level
- **Tailored interface design** and development of multifunctional interfaces by nanostructuring
- **Online Hybrid Yarn Spinning** for the effective manufactoring of filament-reinforced thermoplastics

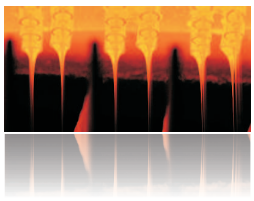


Principle of Hybrid Yarn Spinning

***Hybrid Yarn Spinning** with detail enlargements (top down):*

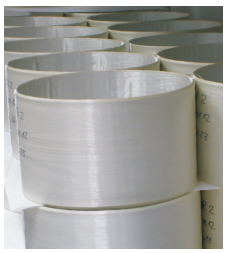
- *Bushing*
- *Sizing application*
- *Commingling of glass & polymer filaments, glass fibre vertical*

From the fibre to the component



Glass fibre spinning
E-Glass, alkali resistant glass, of bioglass, new development special-purpose glass

*In-situ nanostructuring by **adapted sizing**, fitting to polymer matrices*



***Glass filament yarns**, **Hybrid yarns** (GF/PP, GF/PA, GF/PLA, GF/PBT) for production of fibre-reinforced thermoplastics*

Methods of composite production

- *Compounding, injection molding*
- *Tailored Fibre Placement (TFP)*
- *Vacuum assisted process*
- *Hot press*

Range of Services

- Access to our unique industry-oriented glass fibre spinning devices as well as to hybrid yarn spinning devices
- In-situ surface modification of glass fibres
- Nanostructuring as well as coating of reinforcement fibres for multifunctional interfaces
- Micromechanical characterization of fibre matrix adhesion strength
- Extensive material analysis as well as project-related material and process development
- Master/Doctorate-thesis

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