

- 1 Cellulose rayon (Cordenka CR®) as reinforcing fiber.
- 2 Melt compounding of fibers and matrix.
- 3 Door panel made of rayon reinforced polypropylene.

BIOGENIC FIBER REINFORCEMENT OF THERMOPLASTICS

Fiber material: Cellulose rayon

Matrix materials:

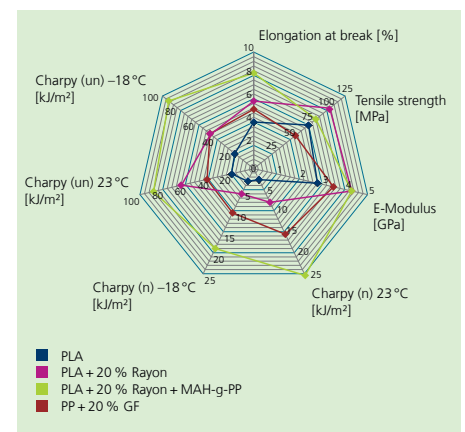
e.g. PP, PE, PLA, PHA, starch esters

Methods

- **compounding**
 - kneader, twin screw extruder
- **injection molding**
- **mechanical and thermo mechanical characterization**
- **structure characterization**
 - X-ray analysis
 - electron microscopy (SEM, TEM)
 - nuclear magnetic resonance (liquid, solid state)

Results (PLA as example):

- improved mechanical properties, in particular impact behavior
- lower weight compared to glass fiber reinforcement
- lower abrasiveness to processing equipment
- improved thermal stability



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