

Production and characterization of wood fibres with defined properties for their use as reinforcing fibres

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Motivation/Materials and Methods

Motivation

wood fibres for use as reinforcing fibres

→ necessary to produce fine-fibrillated wood fibres

→ defined material properties

Materials and Methods

Thermo-mechanical pulp of the wood species spruce (*Picea abies* Karst.) and beech (*Fagus sylvatica* L.)

Visual characterisation with light microscopy and scanning electron microscopy

FiberLab measuring system determination of fibre characteristics: fibre length/width, their distributions, shape factor and fibre curl

Results

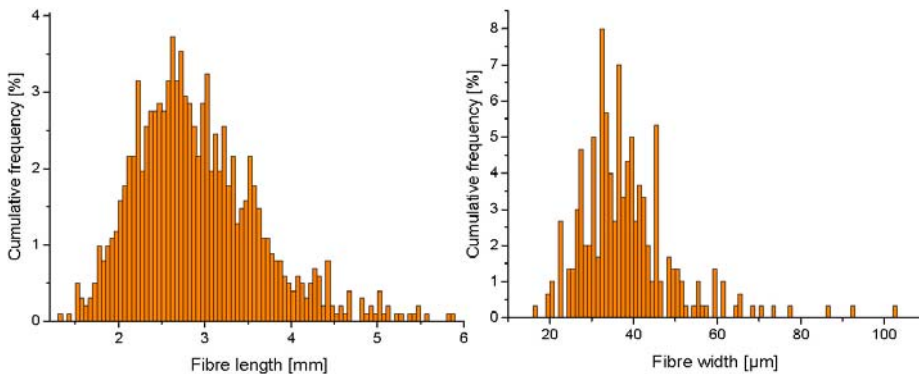
Visual characterisation is limited (right)

fibre morphology, shape factor and fibre content influences the properties of wood-polypropylene-composites

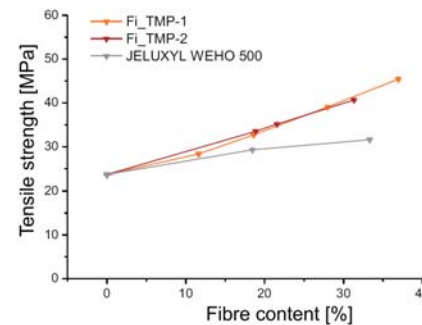
TMP-fraction 2 shows highest reinforcing potential



Visual characterisation



Fibre length and width of the spruce TMP-fraction showing highest reinforcing potential



Tensile strength and modulus in dependence of fibre content.

