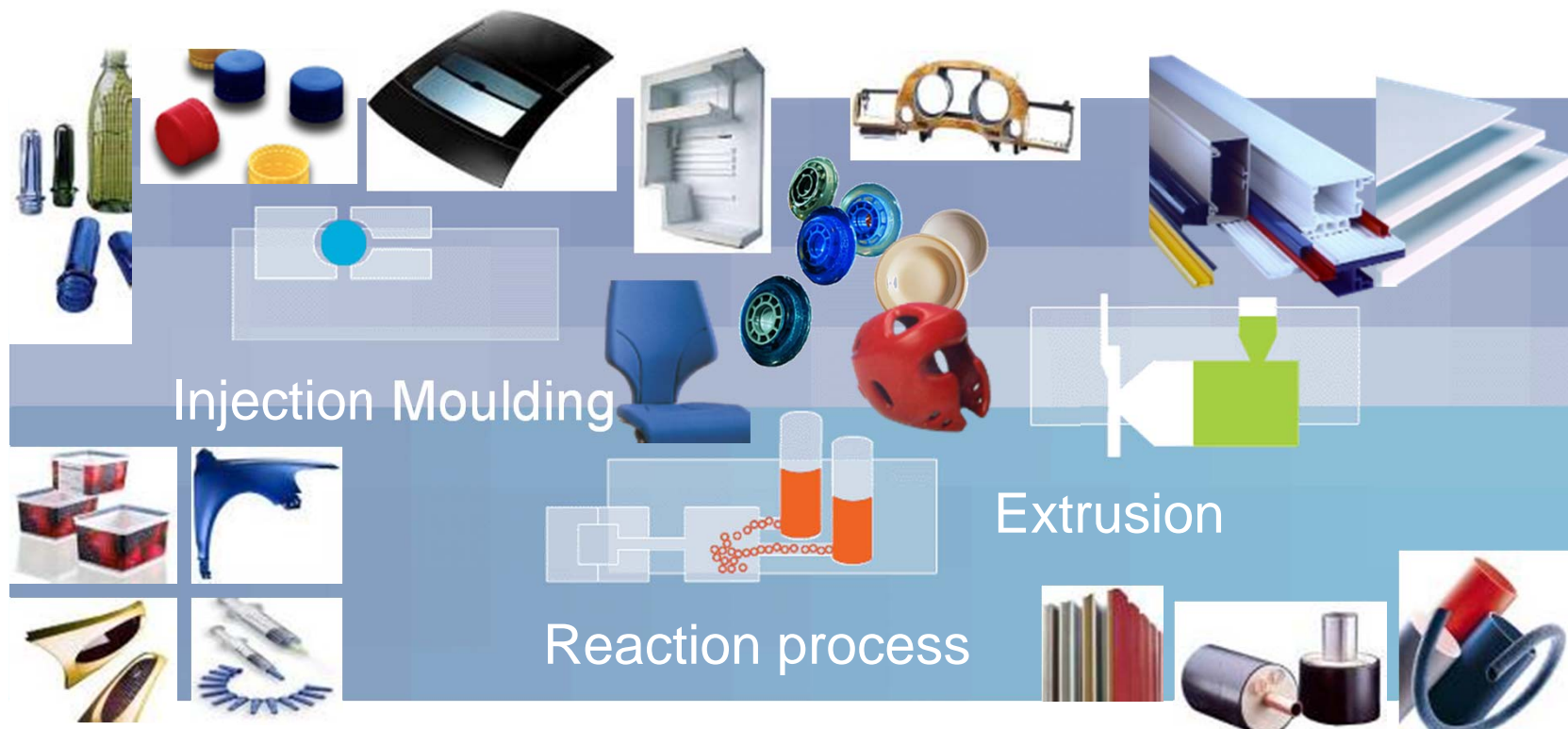
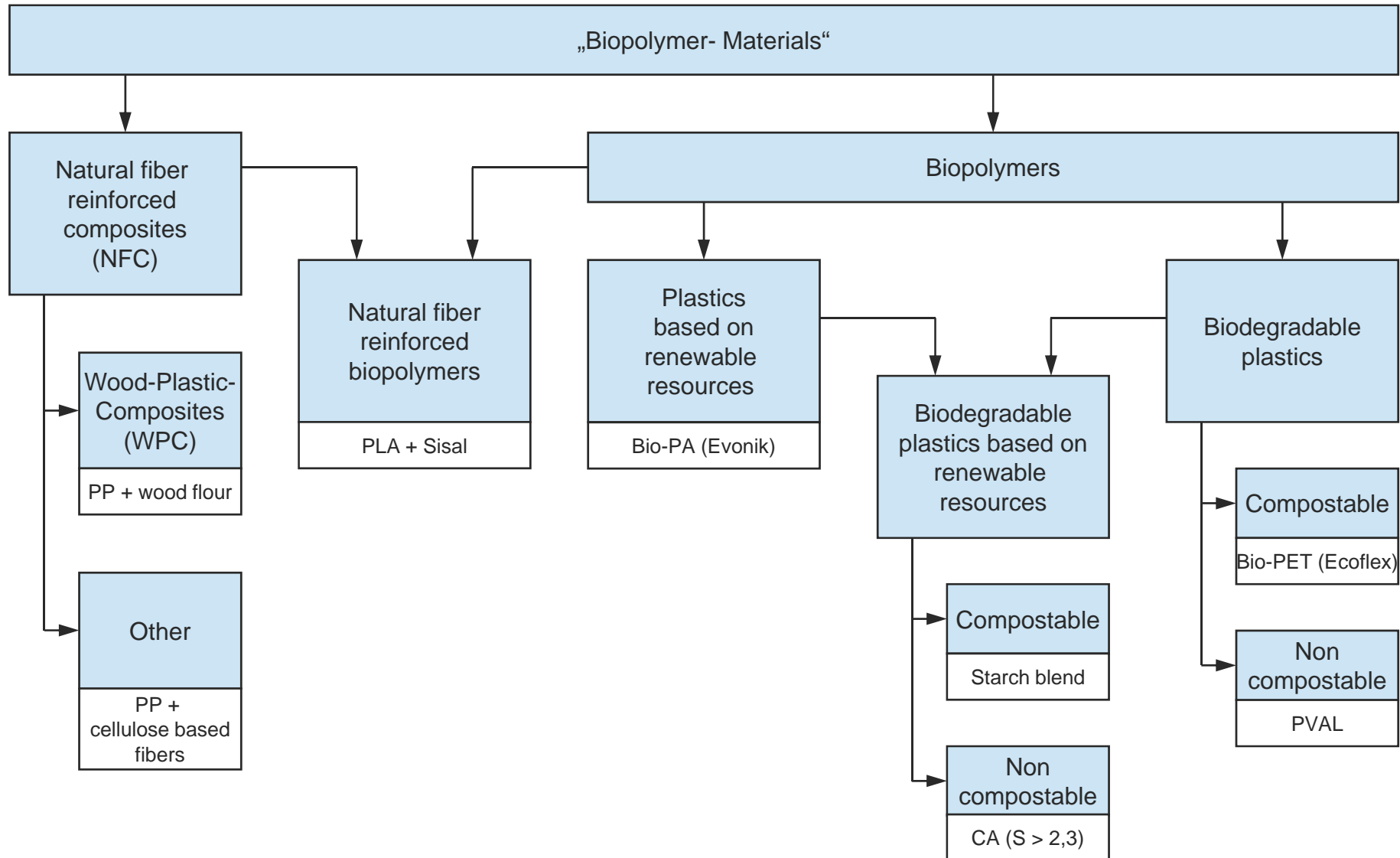
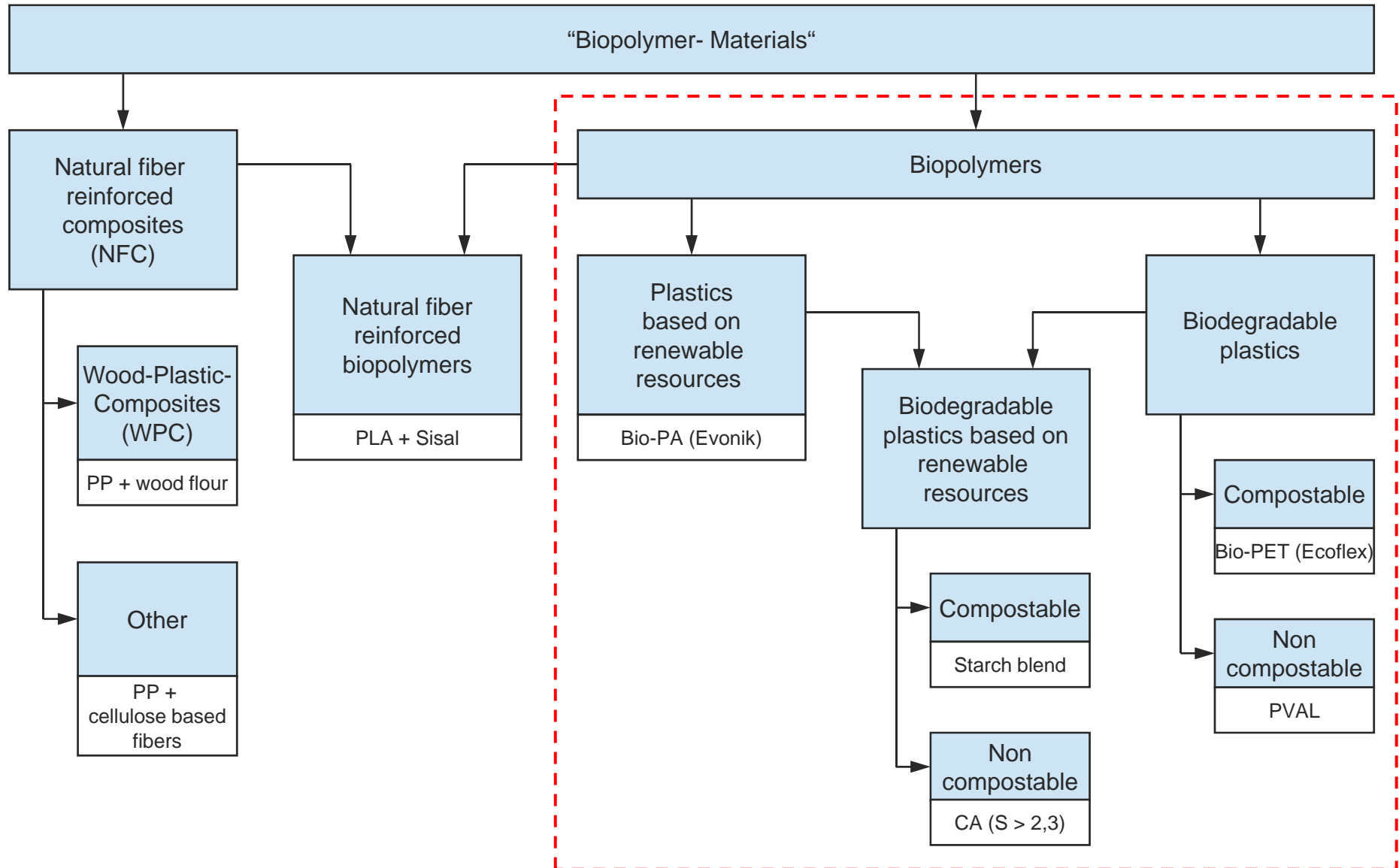


Bundled power for the plastics and rubber industry

Integration of 3 different processing technologies







Processing of plastics based on renewable resources

- Current project: Incorporation of glasfibers into a bio-polyamide
- Project partners:

KraussMaffei
Berstorff

 Fachhochschule Hannover
University of Applied Sciences and Arts



Used raw materials

■ Bio-Polyamide

- Evonik VESTAMID[®] *Terra* HS 16
- Polyamide 6.10
- Based on sebacic acid (castor oil)
- About 62% share of renewable resources
- Technically comparable to conventional polyamides

■ Glas fibers

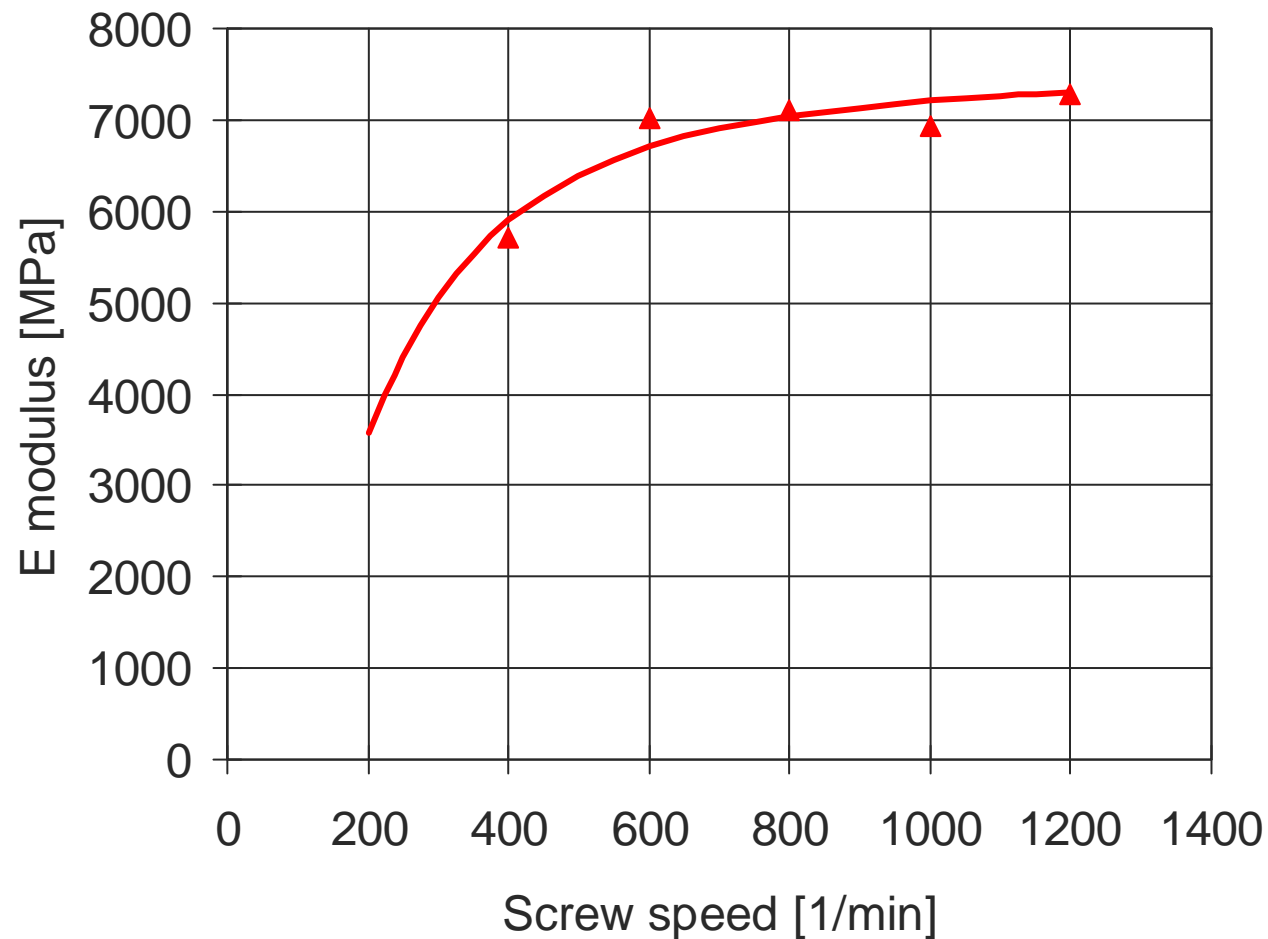
■ Antioxidant

Used technics



- ZE 34 Basic
 - Screw speed: 1200 U/min
 - Torque: 2 x 215 Nm
 - L/D = 46
 - $D_a/D_i = 1,55$
- 3 gravimetric loss-in-weight feeders from Brabender Technologie
- Strand pelletizing Primo 120 E from Automatik Plastics Machinery

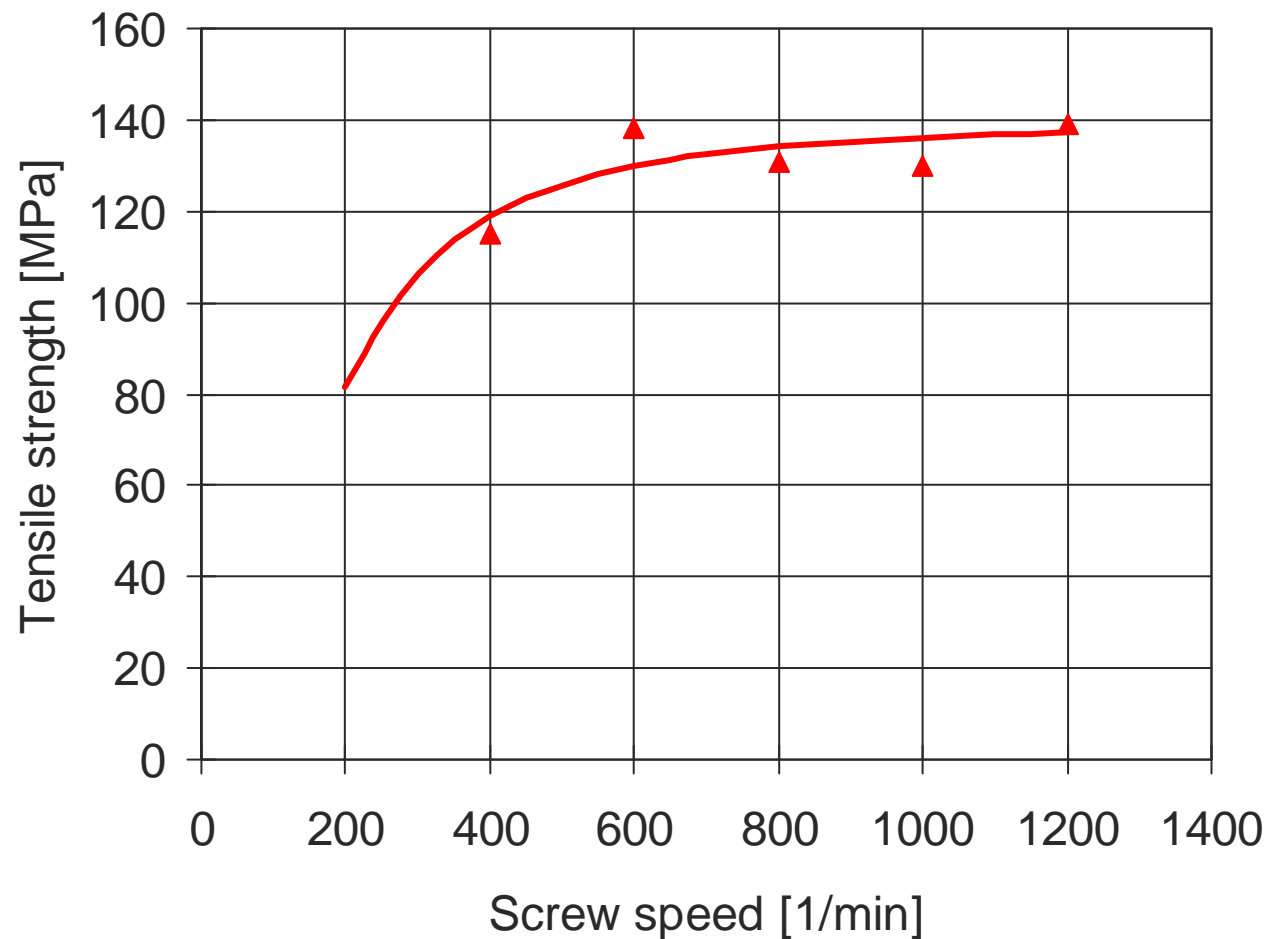
Influence of screw speed and diameter ratio on the modulus of elasticity



Boundary conditions:

- ZE 34 Basic
- Bio-PA + 30 % GF
- spec. filling degree const.

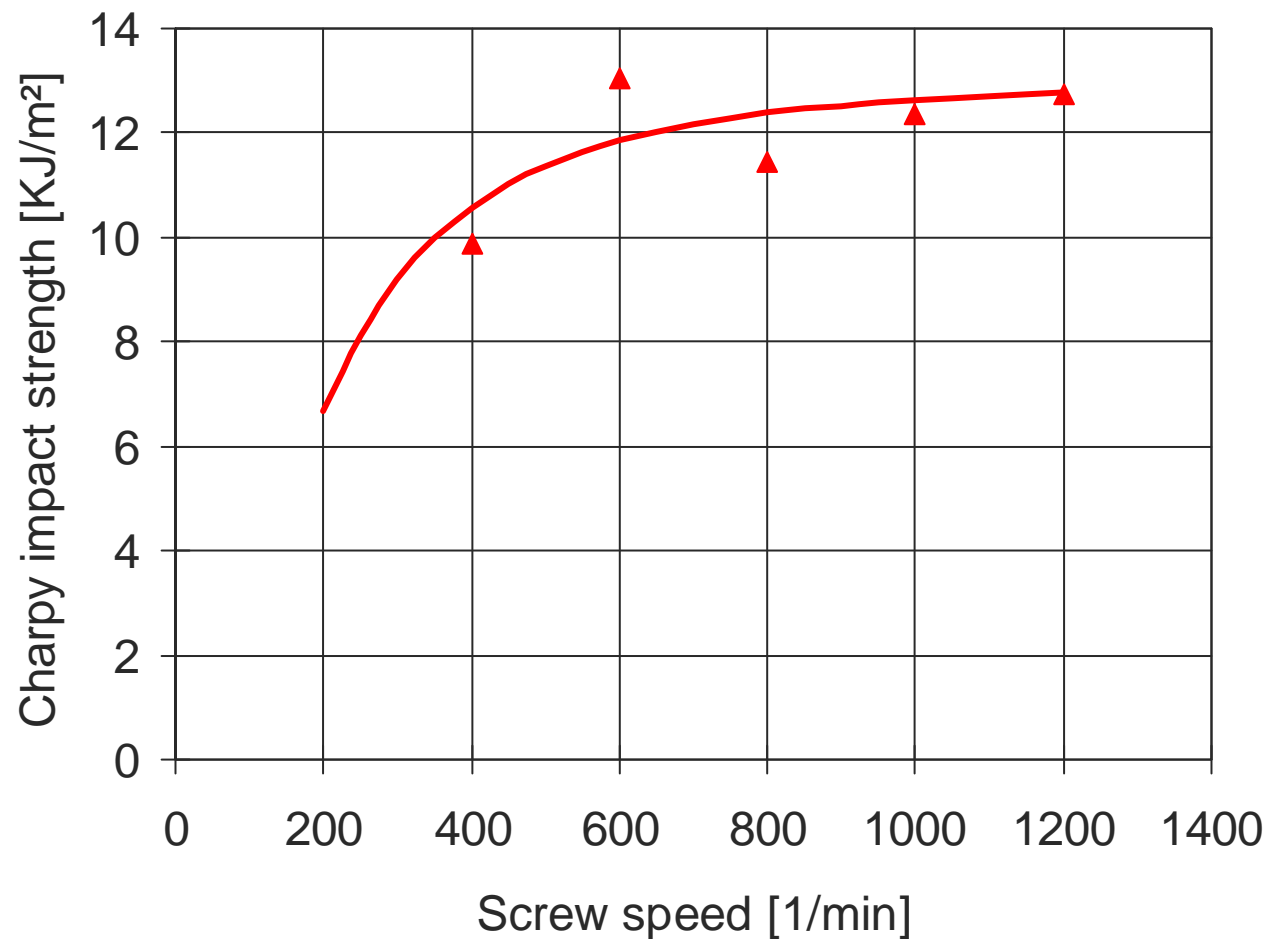
Influence of screw speed and diameter ratio on the tensile strength



Boundary conditions:

- ZE 34 Basic
- Bio-PA + 30 % GF
- spec. filling degree const.

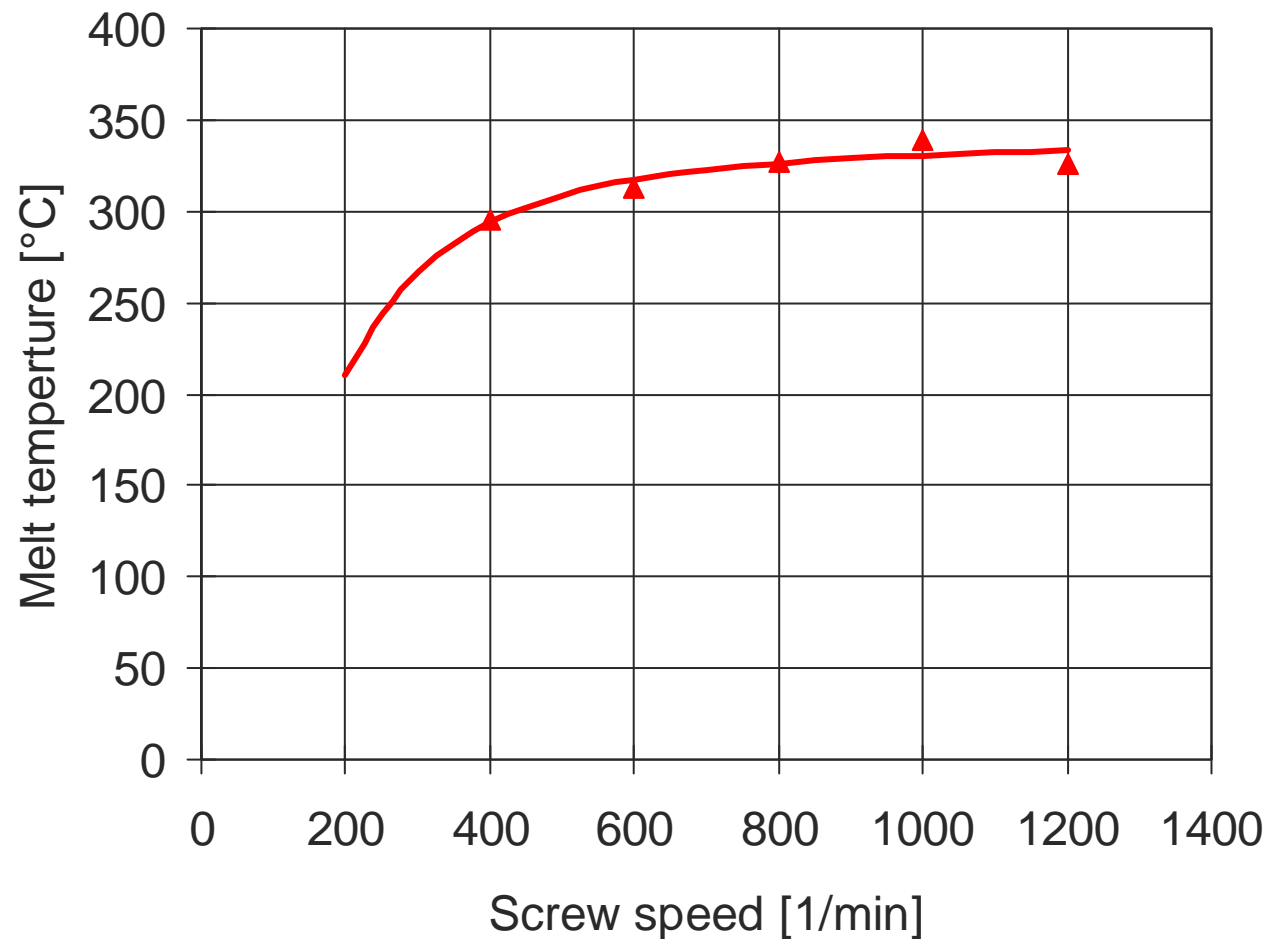
Influence of screw speed and diameter ratio on the Charpy impact strength



Boundary conditions:

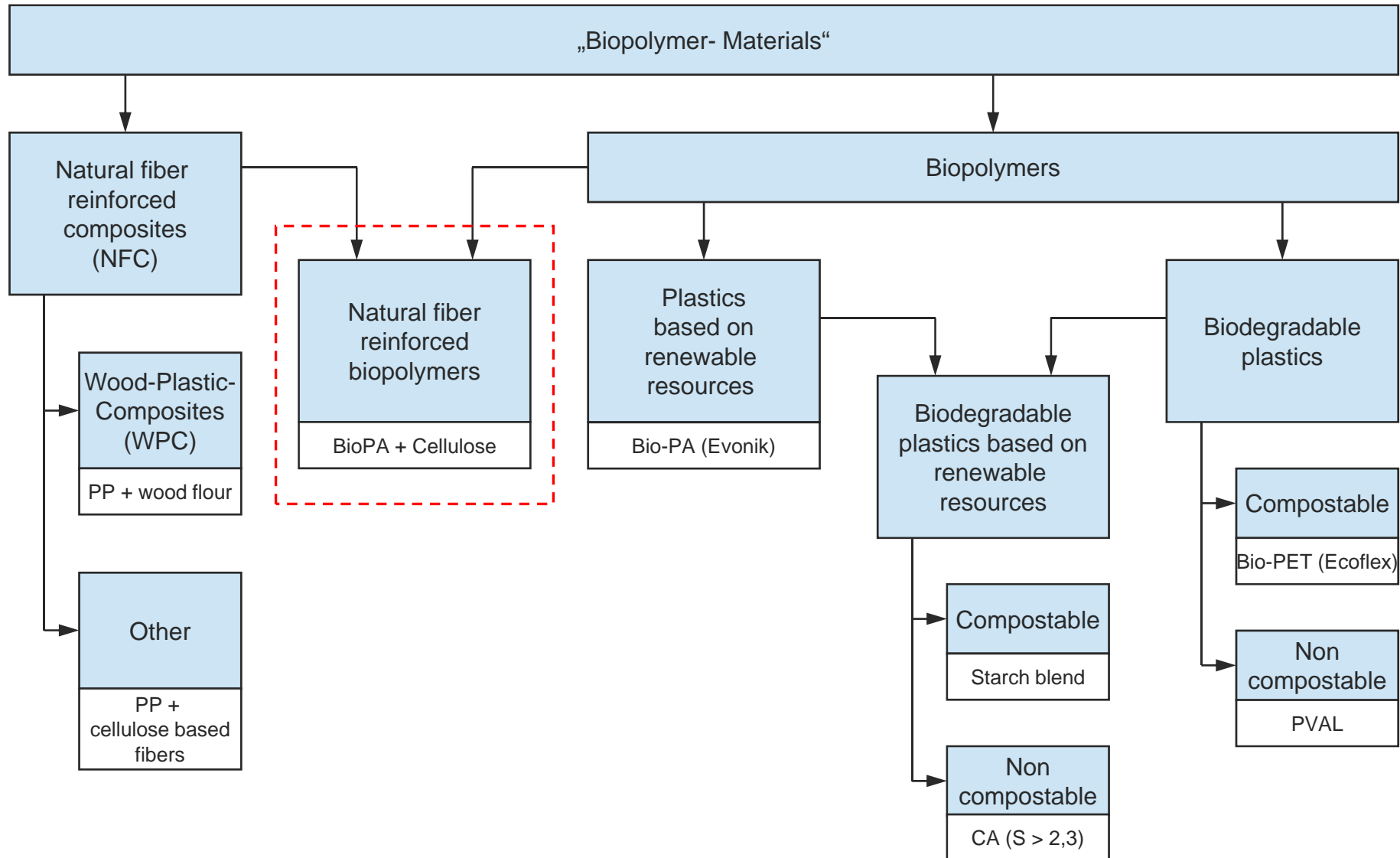
- ZE 34 Basic
- Bio-PA + 30 % GF
- spec. filling degree const.

Influence of screw speed and diameter ratio on the melt temperature



Boundary conditions:

- ZE 34 Basic
- Bio-PA + 30 % GF
- spec. filling degree const.



Possible application fields of natural fiber reinforced bio polyamides



Thank you for your attention !