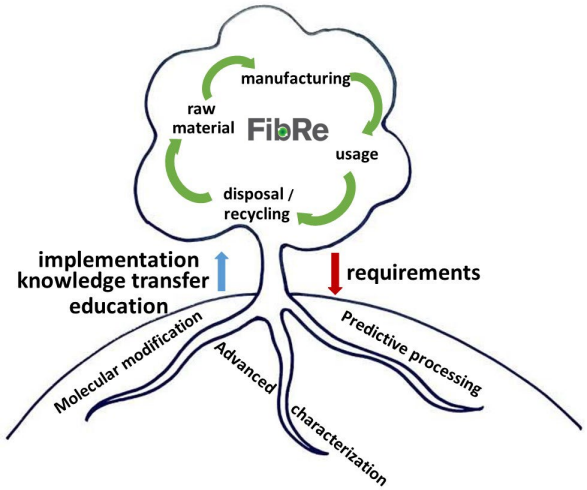
Sustainable thermoprocessable bio-based materials

- A PROJECT COURSE IN CLOSE COLLABORATION WITH THE INDUSTRY

FibRe's vision

Lignocellulose-based thermoplastics in a fossil-free society



Learning objectives

1. **Describe the structure of lignocellulosic materials (forest/agriculture) and advanced characterization tools**
2. **Explain the melt processability challenges for (forest/agriculture) biobased materials**
3. Reflect on the industrial perspective needed to scale up processing of bio-based materials
4. Advantage of using bio-based materials vs stated societal regulation

1 and 2 are mandatory, whereas 3 and 4 are optional

FibRe´s partners:

Lantmännen, AstraZeneca, Johanneberg Science Park, packbridge, FASAD GLAS, Tetra Pak, BIM, VINNOVA, FROHE GROUP, IKEM, stora enso, Battenfeld, VÄSTRA GÖTALANDSREGIONEN, KAROLINSKA UNIVERSITETSSJUKHUSET, CHALMERS, KTH, Nouryon, IKEA, CHALMERS INDUSTRITEKNIK, Wellspect HEALTHCARE, essity, SSAB

Needs from society

Needs from industrial partners

Competence Centre Design for Circularity: Lignocellulose-based Thermoplastics FibRe

Needs from academy

FibRe - A VINNOVA competence center

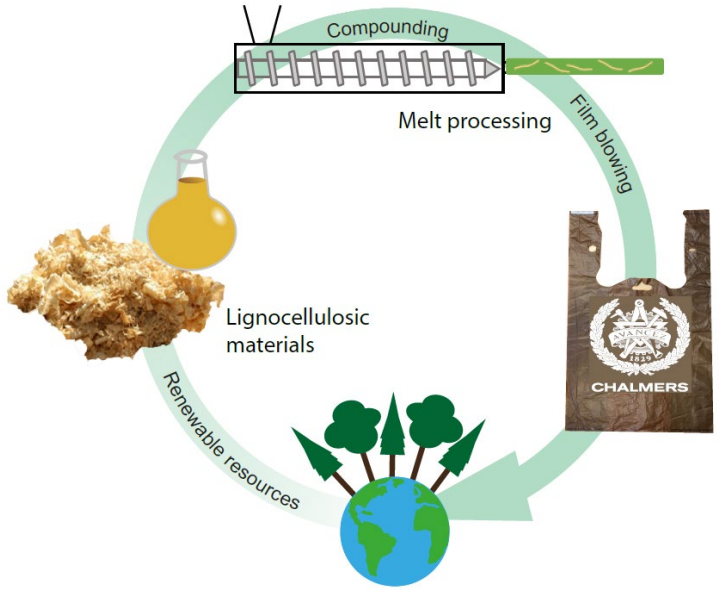
Course outline (study period 4)

Task 1) Present a report on:
What makes a materials thermoplastic and why is cellulose fibers not?
How can thermoplasticity be determined?
Make an interview with predefined companies around their experiences and challenges using thermoplastic materials

Task 2) Identify one challenge with the lack of thermoplasticity for lignocellulose materials and present how this challenge can be overmastered

Task 3) Perform work (lab or theoretical) to master this challenge

Task 4) Write and present orally a summary report for industrial partners



Questions?

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