



WOOD
K PLUS



Kompetenzzentrum Holz GmbH

Competence Centre for Wood Composites and Wood Chemistry

Wood K plus - Sites

- **R&D Institute** for Wood Composites & Wood Chemistry, **founded in 2001**
 - **115** scientific employees
 - **50** running projects
 - **25** industrial partners
 - **4 business units** and one cross sectional area
- Market analysis and Innovation Research**



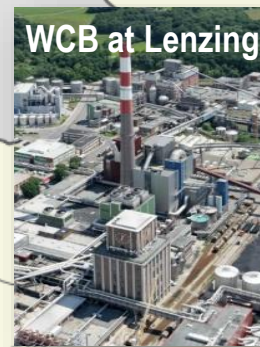
Headquarter, WCB, WPC
at Science Park Linz

 **Linz**



WMT at UFT Tulln

 **Tulln**



WCB at Lenzing

 **Lenzing**

 **St. Veit**



Wood & Paper Surface Technologies
at St. Veit a.d. Glan

Division Wood Chemistry and Biotechnologie

Division Wood Chemistry & Biotechnology

22 employees



4 longterm projects with 4 industrial partners (COMET programme)



Important **scientific partners**

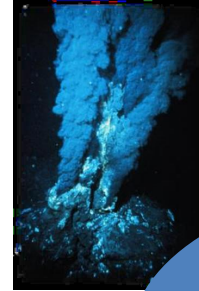
- JKU Linz, El a.d. JKU
- FH OÖ
- TU Wien, BOKU Wien
- Uni Hamburg
- Aalto University



Research Teams



Digesting
Processes,
Feedstocks &
Products

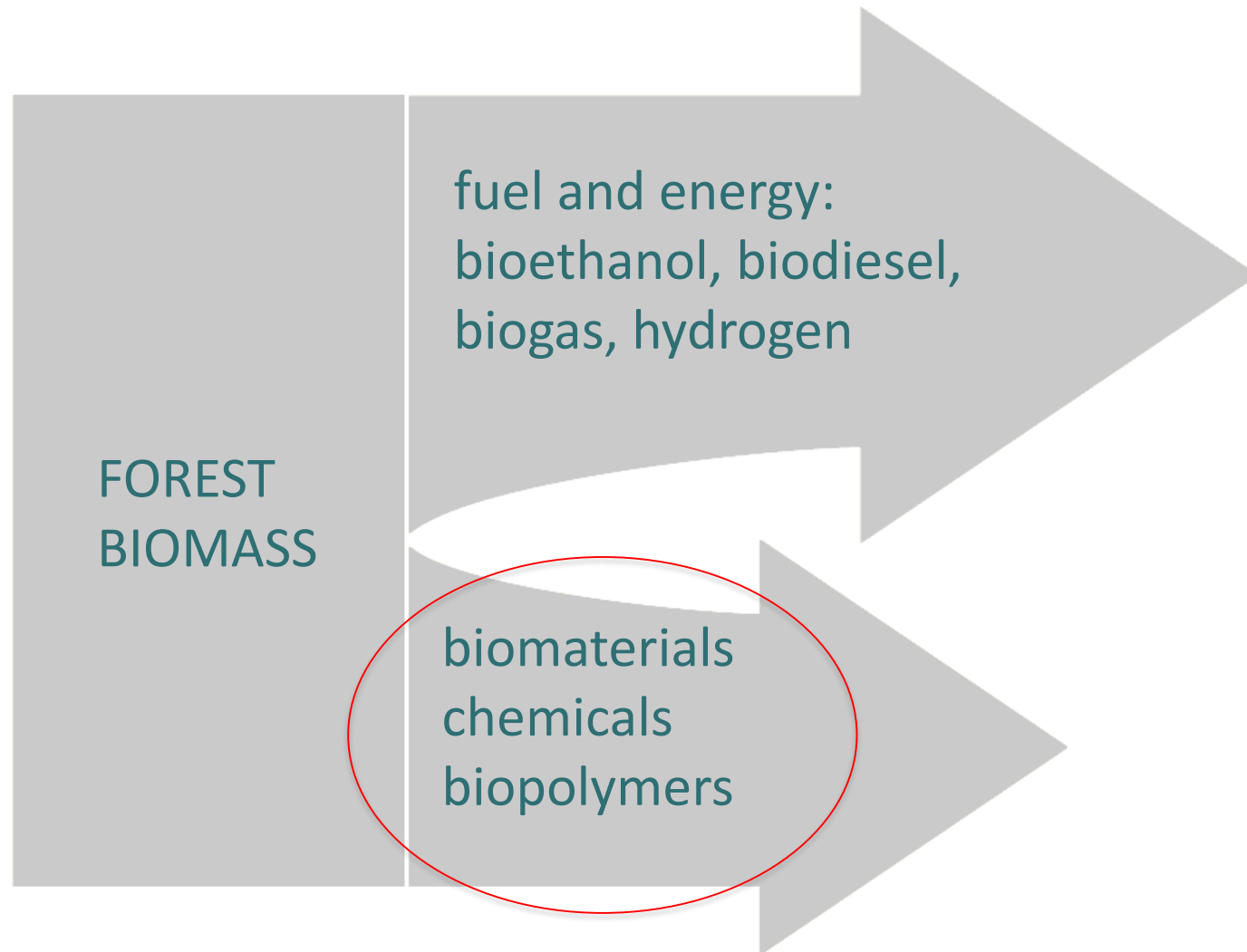


Biotechnological
Process
Technology for
Biomass
Utilisation

Chemical Process
Technology for
Biomass
Utilisation



Forest Biomass Utilization

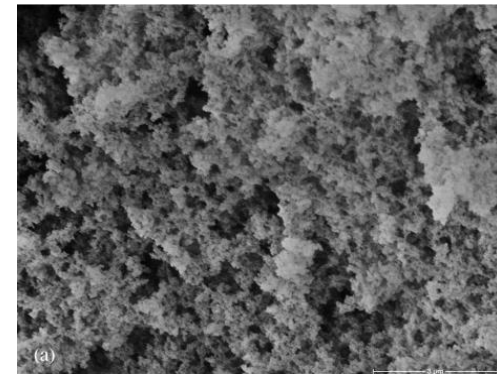
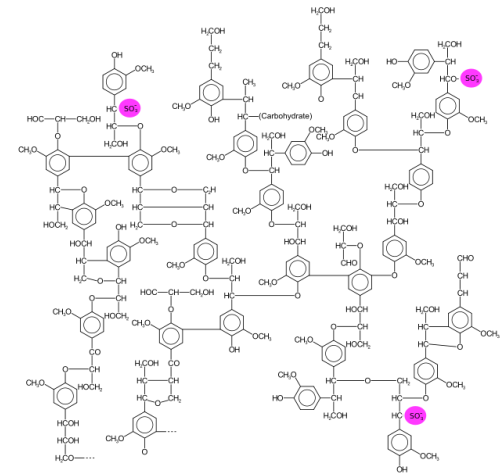


Research fields

- Pulping processes & by-products
- Cellulose fibre production processes
- Structure & composition of wood ingredients
- Analytics of renewables
- Textile fibre modification
- Utilisation of by-product in pulping processes
- Process analytical technology
- (Bio)technological conversion of side streams to valuable products

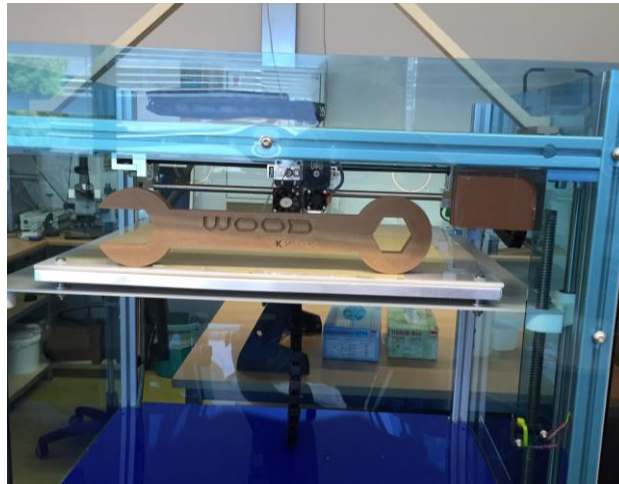
Lignin Research

- Lignin separation/purification from spent liquors
- Characterisation / analytics of native and technical lignins
- Monitoring of lignin changes during processing
- **Porous carbon materials** from lignins (synthesis of lignin-FA-aerogels, variation of crosslinkers to control pore size, different lignin sources, carbonization, lignosulfonates in PU)
- **Foams** from Lignosulfonates
- Electrolysis of lignosulfonates
- **Fibres** from lignins



Pulp/Cellulose fibres

- Modification of viscose fibres (hydrophobic, hot sealing, ..)
- Nanofibrillation and modification of never dried pulp by means of extruder for biobased filaments in 3D printing processes (together with Division Wood Polymer Composites)



Biotechnological Approaches

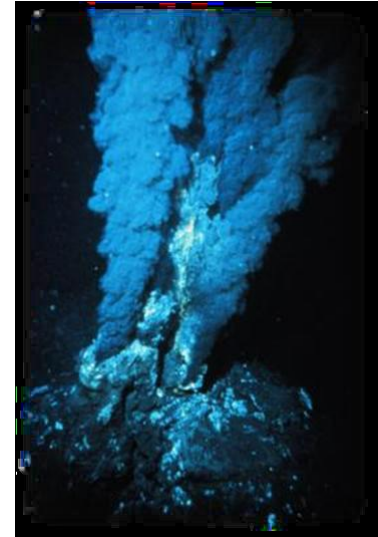
Target: Carbohydrate fractions from the Process / waste streams

Goal: Development of integrated processes yielding value-added products (e.g. >calorific value)

Tools: Micro-organisms ("regular" and extremophiles)

Topics:

- Biotechnological production of biopolymers (PHAs) from SSL by halophilic microorganisms
- Butanol production from SSL and black liquor



Infrastructure

- Chemical, biotechnological and analytical labs 300m²
- New Pilot plant hall ~500m² (May 2016) together with Inst. of process technology – JKU Linz
- Pilot plant facilities for Composite and filament/fibre production
- Possibility for visiting of pilot plants and labs after at the event at around 13:00



Thank you for
your attention



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