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Involvement in the COST Action: Member of MC, Member of WG1Research interest

Environmental friendly wood preservation using plant extracts, Wood anatomy, Plantation timber, Wood physics, modification of wood, THM processing of wood (e.g. surface densification), sorption properties of wood, ageing of wood, delamination of glue-lam, effect of climate change on the raw material supply, quality and service life of the wood based products.

Specialized technique available in my lab

Lab equipments

- UV fluorescence microscope, Stereo microscope, Image analyser system, S3400-N Hitachi Scanning Electron Microscope + EDX,
- Konica Minolta CM-2600d device,
- Drying chamber (heat and vent), apparatus for impregnation (vacuum-pressure), apparatus for heat treatment of real scale timber 0,2 m³ (up to 250°C in air or other gases, or vacuum, and up to 180°C in steam), Climate chambers, Chambers for artificial ageing (QUV),
- Complete laboratory for fungal decay test,
- Test field for fungal resistance in soil,
- Test field for testing of weathering on surfaces and materials
- Apparatus for permeability measurements to liquids and gases
- Universal material testing machines (10kN Tinius-Olsen, 25kN Tinius-Olsen, 100kN FPZ 100, 300kN Instron), testing machine for dynamic strength properties (servo-hydraulic), Charpy pendulum (100J)
- Bomb calorimeter

Additional comment

The Institute of Wood Sciences focuses its research on development of environmental friendly insulating materials based on modified lignocelluloses (bark, straw, etc...). Further topics are: treatment of lignocelluloses with nano-particles in order to enhance the durability (against fugy, UV-degradation), hydrophobicity, and surface hardness. Important topics are the discolouration and colour modification of hardwoods and utilisation of plantation timber (Polar, Robinia) as well.