



- **Kompetenzzentrum Holz GmbH** (Wood K plus; MC Member) (www.wood-kplus.at) and **Institute of Wood Technology and Natural Resources** at University of Natural Resources and Life Sciences, Vienna (BOKU) (www.map.boku.ac.at/holztechnologie.html)
- **Holzforschung Austria** (HFA; MC Member) (www.holzforschung.at)
- Department for Agrobiotechnology, IFA-Tulln (BOKU) (www.ifa-tulln.ac.at)
- Johannes Kepler University, Linz (www.jku.at)
- Technical University, Vienna (www.tuwien.ac.at)
- University of Technology, Graz (portal.tugraz.at)
- University of Innsbruck (www.uibk.ac.at)
- University of Applied Sciences Wiener Neustadt for Business and Engineering (www.fhwn.ac.at/)
- University of Applied Sciences Upper Austria, Wels (www-en.fh-ooe.at/wels-campus)
- Fachhochschule Salzburg University of Applied Sciences, Kuchl (www.fh-salzburg.ac.at, www.tondig.com)
- Austrian Institute of Technology AIT (<http://www.ait.ac.at>)
- Österreichisches Institut für Bauen und Ökologie GmbH IBO (www.ibo.at, www.innenraumanalytik.at)
- **no claim to be complete!!**

Austria

Kompetenzzentrum Holz GmbH (Wood K plus) and Institute of Wood Technology and Natural Resources (BOKU Vienna)



Academic Partners

BOKU, Vienna

Material Science & Process Eng.
Chemistry
Food Science & Technology
IFA-Tulln Agrobiotechnology
Economics & Social Sciences

Johannes Kepler University, Linz

Organic Technology
Polymeric Materials
Polymeric Chemistry
Extrusion
Injection Molding

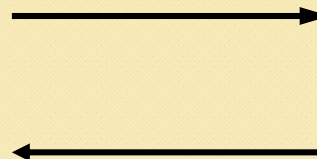
Technical University, Vienna

Mechanics & Structures
Biotechnology

Holzforschung Austria

Wood
K plus

Knowledge
Transfer



Industrial Partners

Comet - Funding



Battenfeld-Cincinnati

Borealis

Maplan

Doka

Mondi

Dynea

Mühlböck

Engel

Pinuform

Fachverb.

Schweigh. Fibers

Fasal

SML

Frey Amon

SPB

Fritz Egger

Starlinger

FunderMax

STIA

Impress

TEAM 7

Kelheim

Weitzer

Lenzing

Wiehag

diverse
industrial partners

Projects & Services

Basic research



Pre-competitive research



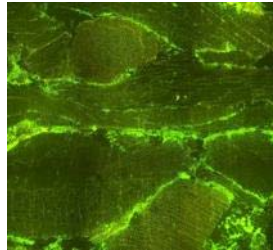
Industrial research



COST FP1303: Performance of bio-based building materials

Austria

Kompetenzzentrum Holz GmbH (Wood K plus) and Institute of Wood Technology and Natural Resources (BOKU Vienna)

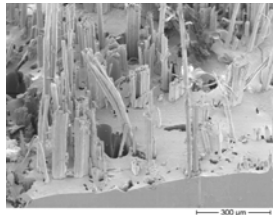


Wood-based materials



Engineered wood & fibre products

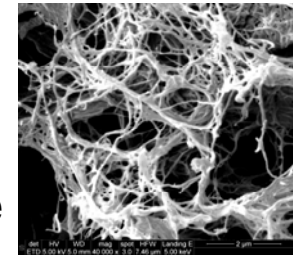
Dendro-chronology



Bio-based fibres

Main topics/methods

Nanocellulose



Processes
Modification &
Drying

Mechanical
Disintegration



Wood
quality

New materials



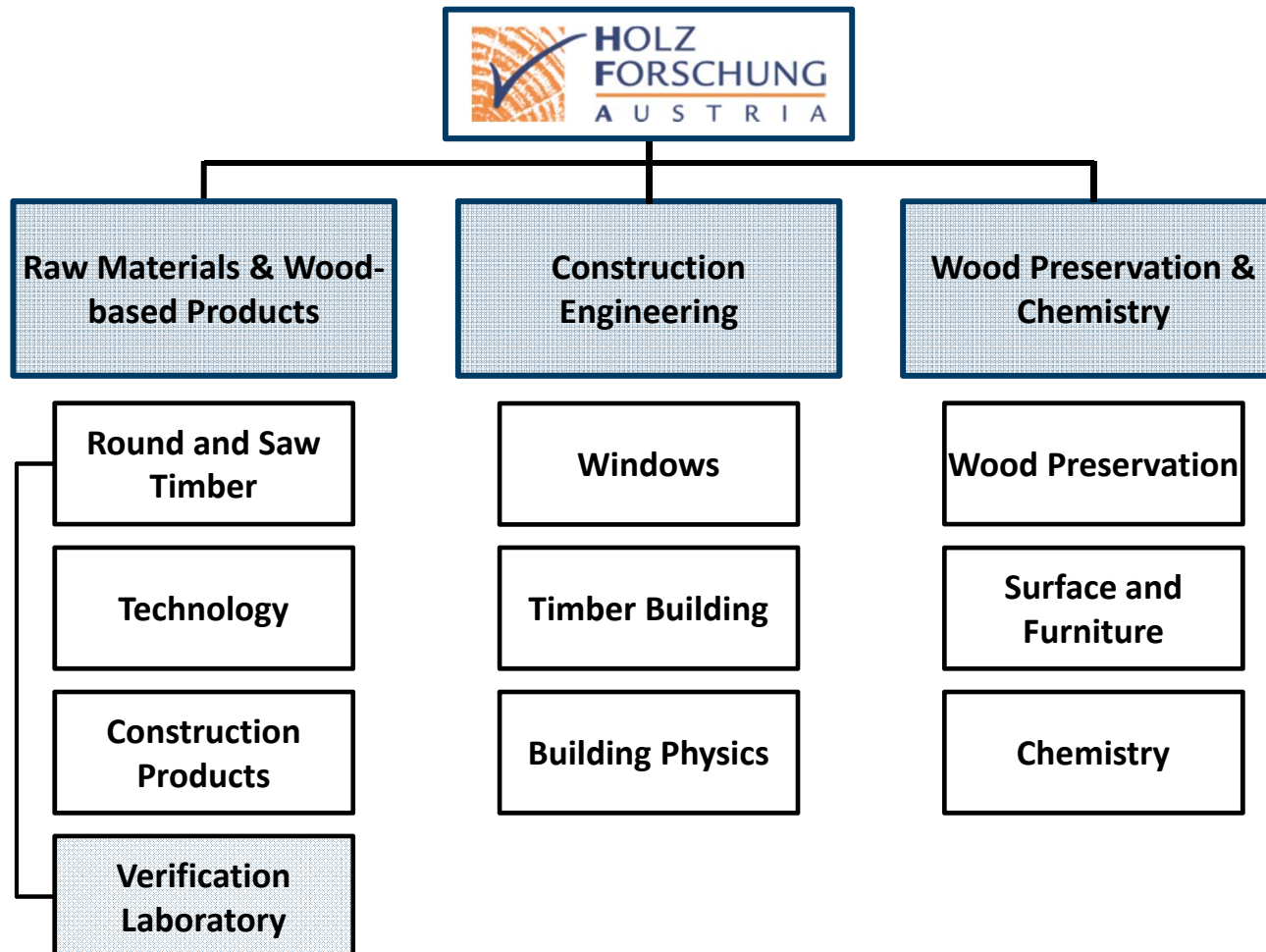
Bonding and
Gluing



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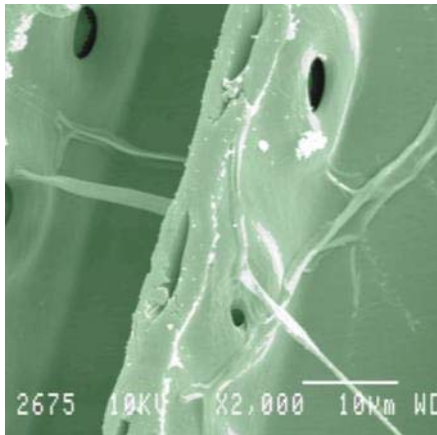
HFA - departments and special fields



COST FP1303: Performance of bio-based building materials

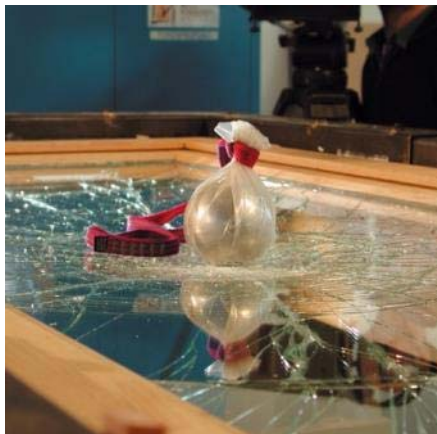
Austria

HFA – fields of activity



Research and
Development

Certification



Testing and
Inspection

Transfer of knowledge



COST FP1303: Performance of bio-based building materials

Emissions – esp. Volatile organic compounds (VOC), formaldehyde etc.



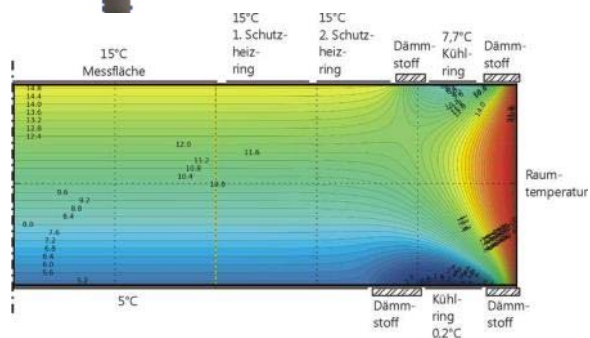
Microchambers
 $48 \cdot 10^{-6} \text{ m}^3$

Standardchamber
 $0,255 \text{ m}^3$ & 1 m^3

4 TC351-Model rooms
 30 m^3

All size levels: up to 38 m^3 (CARB) and real environment testing

Thermal conductivity

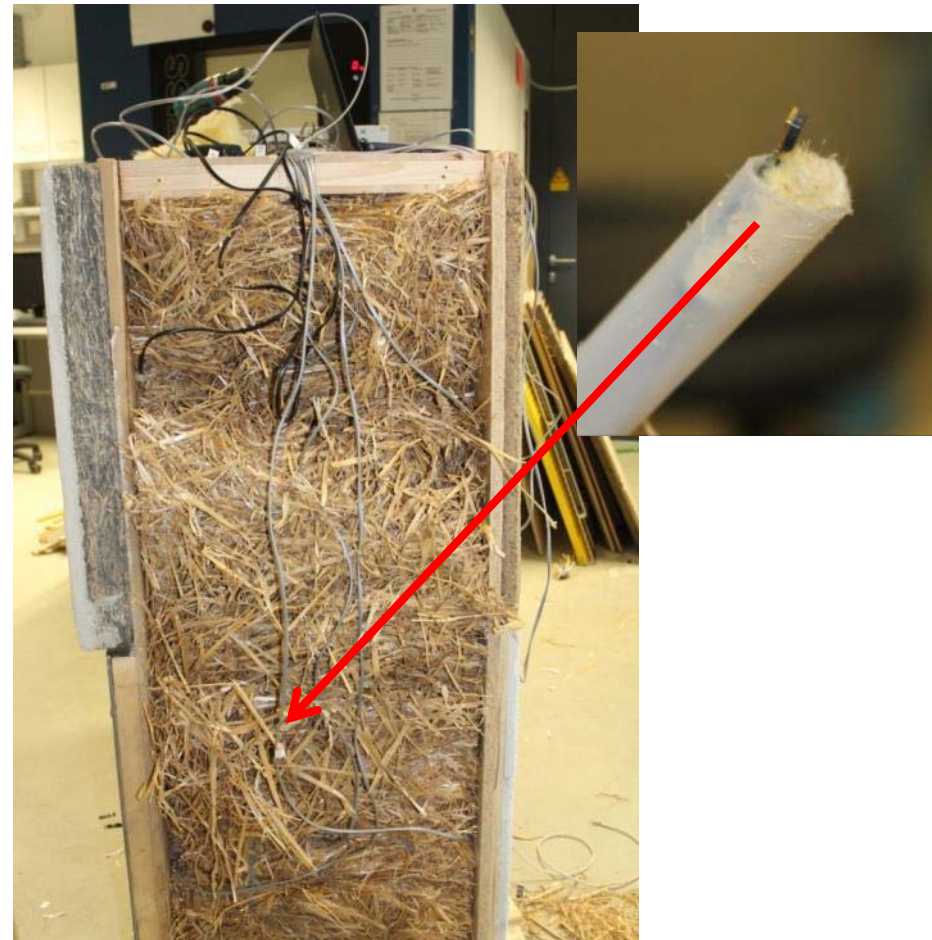
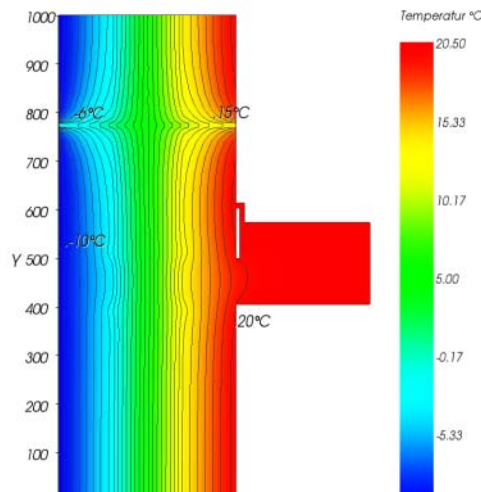
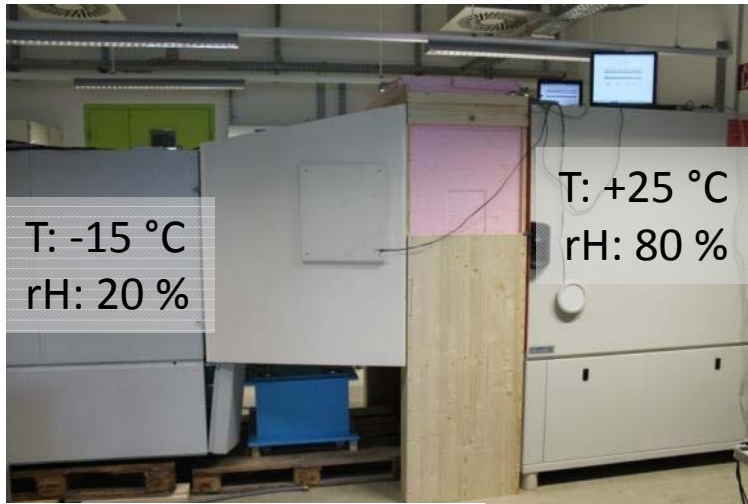


Cattail
(*Typha sp.*)



Straw

Material moisture and heat transfer



Fibre technical centre for nonwovens



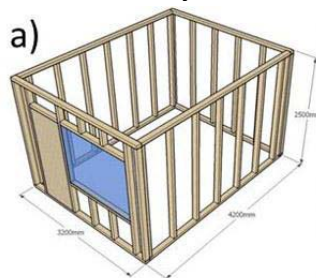
HFA – ongoing and recently finished projects with respect to WG 1

- **„RAIL-SLEEPER“**: Examination of products with a better human- and ecotoxicological profile than creosote as alternatives for the impregnation of wooden railway sleepers.
- **“Molecular and visual monitoring of sapstaining fungi and moulds on sawn timber”**: Investigation of the site specific impact of sapstaining fungi and moulds on sawn timber.
- **„Emissions of wood, treated with copper-amine based wood preservatives“**: Generation of valid, realistic field data of emissions of active ingredients from wood.
- **„INPROPOLE“**: Investigation of the usability of chromium free wood preservatives with regard to a long service life of utility poles.
- **„BAOPAP“**: Prevention of disposal within the paper production process that causes rupture within the product. Biocide free coatings on machinery is currently tested.
- **„WoodAgent“**: Development of a fast biocide testing method.



HFA - ongoing and recently finished projects with respect to WG 2

- „VOCs from biobased materials and processing“: in cooperation with Wood K plus (www.wood-kplus.at), IBO (www.innenraumanalytik.at) and www.dobianer.com
 - „Wood2New“: WoodWisdomNet+ project on interaction of building materials with humans. Including sensory and haptic testing on surface, VOC and HCHO Emissions, toxicological and epidemiological testing under residential conditions.
 - „HFA-Timber“: Indoor Air Quality applying CEN TC351 model rooms, FLEC testing and toxicological evaluation. (e.g. www.dobianer.com)
 - „BigConAir“: together with **University of Innsbruck**; Indoor Air Quality of container buildings including toxicological evaluation. (www.uibk.ac.at/holzbau)
 - „Fire retard“: biobased insulation materials (bim) in wooden housings
 - „Dry flat roof“: moisture movement within bim and shading (summer conditions)
 - „air flow“: comparison of bim and rock wool
- And many others...



HFA - ongoing and recently finished projects with respect to WG 3

- „**Ecotimber (€CO2)**“: WoodWisdomNet, methodology development for LCA concerning wood, calculation of LCAs for several wood based products and 3 reference buildings, update and extension of www.dataholz.com concerning ecological building products www.eco2wood.com
- „**EPD-platform Austria**“: Development of a national base of a EPD-platform according to EN ISO 14025 (www.bau-epd.at)
- „**Eco-comparision**“: Comparison of 50 different building concepts considering building materials, energy standards and utility management (within ACR: www.acr.at and HdZ)



BioUp Research association



www.bioup.at

full production line for bio-based materials - especially pellets and briquettes
including all kinds of testing facilities



COST FP1303: Performance of bio-based building materials

Specialist equipment



INSTITUTE	Properties						Environmental				
	Natural Durability	Moisture / sorption studies	Resistance to mould	Fire resistance / reaction to fire	Insect /termites / pests	Dimensional stability	Life Cycle Assessments	Whole Life evaluations	Product accreditation	Emission testing	Environmental Product Declaration (EPD)
Wood K plus & Inst. Wood Techn. Nat. Res. (BOKU)	YES	YES	YES	YES		YES	YES	YES		YES	
HFA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
IFA (BOKU Vienna)	YES	YES	YES			YES	YES				

Specialist equipment



	Laboratory tests						Field tests				
INSTITUTE	Natural Durability	Mould resistance	Insect /termite testing	Leaching / weathering	Sorption studies	Dimensional stability	In ground contact tests	Out of ground contact tests	Natural weathering	Surface performance / coatings	Moisture data logging
Wood K plus & Inst. Wood Techn. Nat. Res. (BOKU)	YES	YES		YES	YES	YES	YES	YES	YES	YES	YES
HFA	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
IFA (BOKU)	YES	YES		YES	YES	YES	YES	YES	YES		YES

Austria MC Members



Dr. Christian Hansmann

c.hansmann@kplus-wood.at

Tel. +43 (0)1 47654-4261

Mobile +43 (0)664 9649813

www.kplus-wood.at

presenting author

Dr. Martin Weigl

m.weigl@holzforschung.at

Tel. +43/1/798 26 23-839

Mobile +43/676/847982673

www.holzforschung.at



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