

WOODen MUSical Instrument Conservation and Knowledge - Opening Conference -

Research in musical instruments at Eberswalde University for Sustainable Development

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Professorship / Expertise

- Professorship of “Chemistry and Physics of Wood”, led by Prof. Dr.-Ing. Alexander Pfriem
- Extensive experience in the field of wood chemistry and development of technologically oriented wood processing technologies
- Research activities concerning material development, wood-water-relations, sorption and diffusion behaviour and sound characteristics of modified wood
- Special field of work is the use of modified wood in musical instruments

Selected Projects / Cooperations

- Several research projects with partner from industry
- Research in musical instruments since more than 10 years
- Several research activities with a network in Saxony (Musicon Valley) bringing together manufacturers of musical instruments and research institutes
- New network project: development of intelligent modular systems in the German musical instrument production “iBauM”
- Development of thermally modified wood for musical instruments in close cooperation with industry and network partners
- Research on reduction of VOC emissions in wood for its use in showcases of museums is a topic in ongoing research activities.
- Pfriem was/is working group member of COST FP 0802 and 0904.

Equipment

- Thermowood test facility at pilot scale
- Laboratory scale vacuum drying chamber
- chemical and physical characterization technologies of wood (physical, chemical)
- Special light microscope with hot bed, including fluorescence unit
- Gas pycnometer for determining the true density of porous materials
- FT-IR spectrometer (ATR and transmission measurement)
- UV-Vis spectrometer (incl. possibility for measurement of solids)
- CIELab colour measurement device
- DMTA Dynamic Mechanical Thermal Analysis (Eplexor 25 from Gabo)
- Universal testing machine TIRAtest 2.5 KN
- Drying and climate-conditioning technology
- Combustion chamber for B2 tests according to DIN 4102
- Outdoor weathering station for the determination of biological material behaviour under outdoor climate
- Artificial weathering planned

Interests

- Joining research activities in the field of wooden instruments or parts of instruments and physical, chemical characterization and relations in wood structure and properties
- Deepening of the research efforts in the area of preservation of wooden instruments
- Interactions and new projects with researchers and research institutes in material sciences, with producers of wooden instruments and preservationists
- Membership in COST Action FP 1302 Working Group 2 - Mechanics & Wood Sciences

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