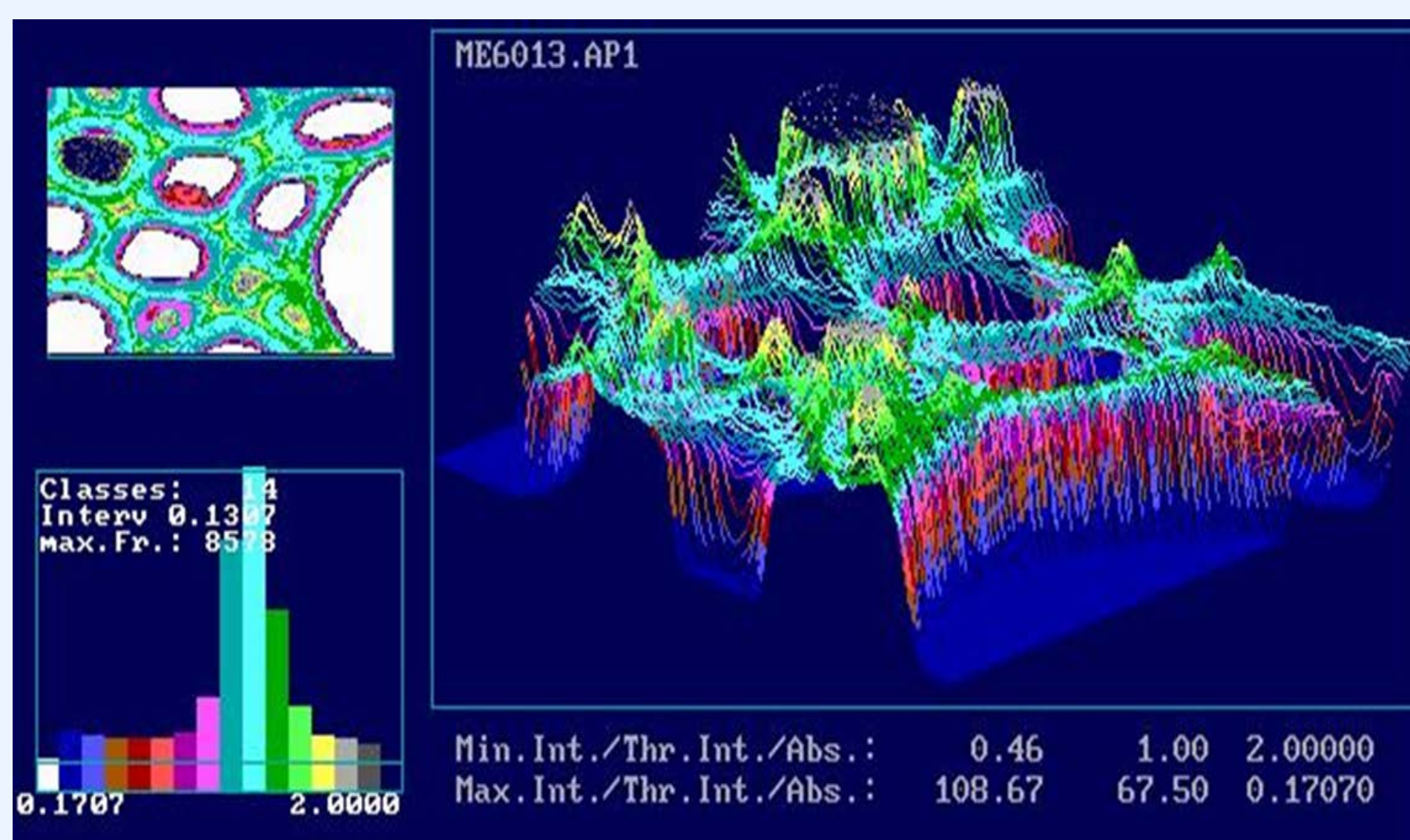


# Wood Science



*The Chair Wood Science is headed by Prof. Dr. Klaus Richter. He also is head of the WZW Core facility TUM Research laboratory wood*



## Research focus

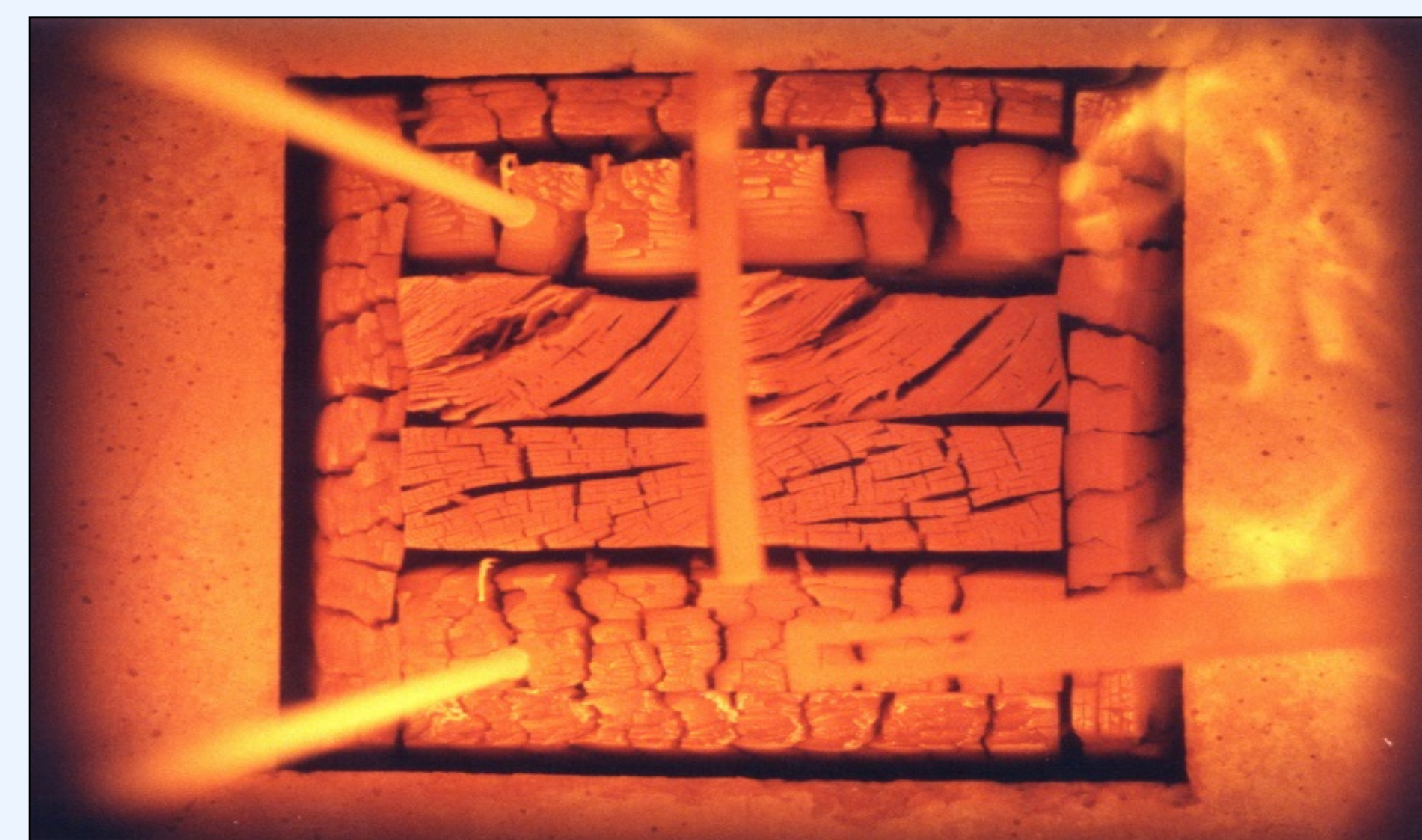
The material science activities focus on mechanisms to understand the interplay between the complex structural and chemical organization of the wood at different scales and under different exposure conditions.

Developing and adaptation of material flow methodologies aims at quantifying the specific characteristics of renewable resources with a key aspect on forestry and wood based products for a sustainable development.



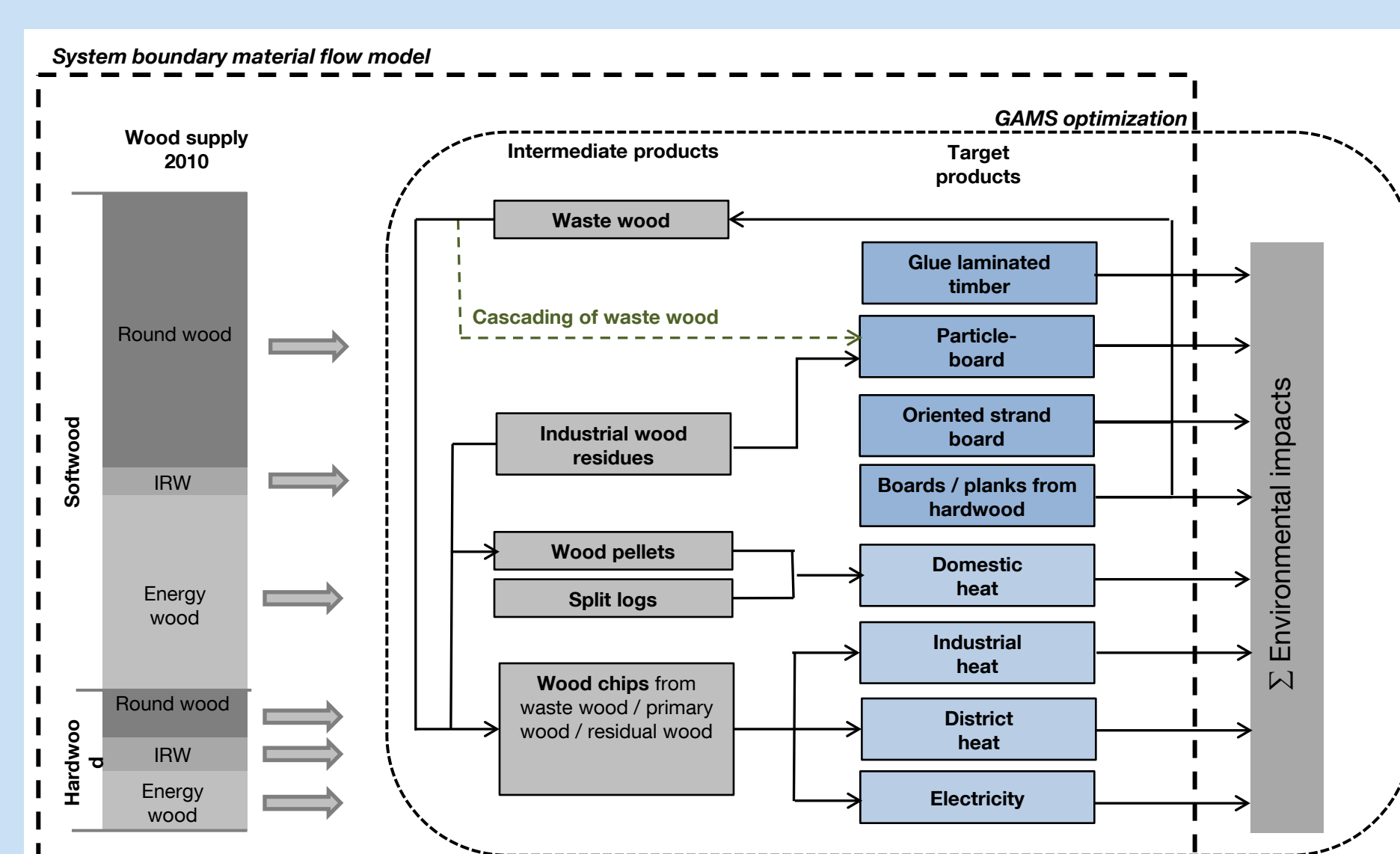
## Material science and engineering

- Structure-function assessment of wood, wood based materials from nanometer to millimeter scale, particularly regarding interphase sections
- Effects of gradients and scales on material properties and performance
- Wood cell wall reactions
- Mode of action of wood modification processes against brown rot fungi
- Glowing/smouldering of wood fibre insulation materials



## Chemistry of raw material and products

- Advanced analytical chemistry of wood and lignocellulose materials
- Dynamics of wood surface chemistry and wood adhesive interactions
- Identification, separation and isolation of wood extractives and assessment of their bioactive potential
- Temperature induced transmutation of macromolecules, esp. hemicelluloses in heat treatment processes and related effects
- Formation and reactions of VOC or aldehydes in wood and wood composites



## Resource flow management

- Analysis and assessment of value chains and products life cycles
- Sustainability evaluation of conflicts between material and energy use
- Greenhouse gas inventories and harmonized methodology of wood and renewable raw materials
- Cascading of wood - assessment of environmental and socio-economic effects
- Evaluation of strategies to increase resource efficiency



## Scientific services

Maintaining a scientific collection of more than 10'000 wood samples and 22'000 microscopic slides covering more than 5'000 different wooden species from all over the world.

Housing the editorial office and performing the chief editorship of two leading international wood science and technology journals.