the327th Open Seminar for Sustainable Humanosphere
RISH , Kyoto University

# Recent Timber Durability Challenges and The Research Activities to Address Them

ONLINE (zoom)
Register from HERE

Admission: FREE

7/30 (WED) , 2025 12:30-13:20

Associated Mission

・Mission4
Development and Utilization of Wood-based Sustainable Materials in Harmony with the Human Living Environment


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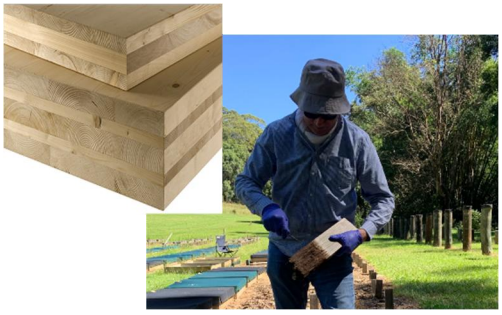
Keyword

- From Production to Recycling of Wood Biomass-Based Materials
- Bio-Nanostructures & Nanomaterials
- Wood physics
- Eco-Friendly Life Systems for a Sustainable Future
- Humanity Sociology with Scientific Analysis of Wood

One of the key challenges in timber durability is the development of improved laboratory and field test methods to assess the performance of both treated and untreated wood products. Although various methodologies exist, more research is needed on early decay detection, enhanced leaching, weathering simulations, and biochemical screening tests. Another major focus is the creation of environmentally friendly protection systems. Due to growing restrictions on toxic wood preservatives and heavy metals, there is increasing interest in alternatives like targeted biocides, synergistic biocide combinations, nanotechnology, and natural compounds from durable wood species and plant extracts. Targeted biocides may offer more sustainable protection by minimizing environmental impact. Nanotechnology could revolutionize wood protection through nano-biocides, nanomaterials, and advanced polymer matrices. While solid wood remains widely used, mass timber products are gaining popularity in mid- and high-rise construction. However, their large size and embedded use limit conventional durability evaluation methods post-installation. There is a critical need to study factors such as glue lines, wood species, moisture content, sapwood vs. heartwood, and earlywood vs. latewood. Understanding termite entry pathways into engineered wood panels is also essential. This knowledge will help guide future recommendations for effective preservative treatments and protection strategies, especially in high humidity and termite-prone regions.



The “open seminar” is a casual research meeting during lunch time on Wednesdays, with the aim of sharing research results, and enhancing collaborations.

https://www.rish.kyoto-u.ac.jp/open seminar 2022/

Organized by Research Institute for Sustainable Humanosphare, Kyoto University