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Formaldehyde-free bio-adhesives for wood-based materials production

Using a wood-based panel for interior construction, researchers from the Fraunhofer WKI will be demonstrating the potential applications for a newly developed, formaldehyde-free bio-adhesive at LIGNA 2023.

Compared to the phenol-formaldehyde resins often used in the past, the new lignin-HMF resin is harmless to health and free of petrochemical raw materials. The researchers will present a 100 per cent bio-based condensation resin for the wood-based materials industry.

Since regionally available production residues are recycled for production, the researchers have created a sustainable and economically attractive solution for wood-based materials production in cooperation with the Argentinian Instituto de Materiales de Misiones (IMAM).

Wood-based materials such as particle board, OSB, plywood or fiber materials (MDF, HDF)

are used as sustainable building materials in large quantities in the construction industry and in furniture manufacture. Among other things, phenol-formaldehyde resins have been used as adhesives in production to date. These resins are, firstly, associated with health risks, and, secondly, are produced from fossil raw materials.

The avoidance of formaldehyde in resin production means that the wood-based materials contain only extremely small amounts of formaldehyde, which occurs naturally in wood. The bio-condensation resin can be produced and processed using standard process and plant technology.



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