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Evaluation of torrefaction condensates as phenol substitutes in the synthesis of phenol-formaldehyde adhesives suitable for plywood

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Highlights

- New value-added application of wood torrefaction wastes.
- Phenol-formaldehyde adhesives with torrefaction condensates.
- Novel plywood panels competitive to conventional ones.

Abstract

The last decades, investigators have been striving to find alternatives to materials and products from fossil sources in response to the need to get independent from petroleum.

So far, the most attractive renewable source has been found to be biomass and

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