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Special Issue Reprint

Wood Modification: Optimisation and Characterisation of Modified Timbers

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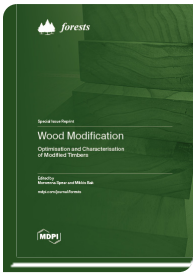

This Special Issue considers wood modification, an established field for enhancing timber properties. The focus is on characterising and optimising the various modification technologies available. Five papers address thermal modification and processes. Four papers address innovative chemical treatment agents, while another considers the effect of delignification on the densification process. One paper considers the permeability gains made using microwave drying as a pre-treatment for impregnation-based modification systems.

Two papers consider wood functionalisation methods, namely, phase change materials and the use of silver nanoparticles, with potential for use in advanced building products and resistance to biodegradation, respectively. There is plenty of overlap within the field, and several papers use a combination of approaches, reflecting the current trends in research.

Two papers use machine learning, algorithm optimisation, or modelling approaches to improve prediction and processing, which is an area set to develop in parallel with Industry 4.0 advances as concepts become incorporated with wood modification technologies.

This Special Issue indicates that demand for sustainable natural materials and technologies is emerging within wood modification. These concepts have always been at the heart of wood modification principles. The papers contribute to the industrial application of many lification processes.

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