



“Gheorghe Asachi” Technical University of Iasi, Romania



PARTICULARITIES OF SYNTHETIC WOOD - A BIOMATERIAL WITH RECYCLED WASTE

**Daniel Lepadatu¹, Dorina Isopescu¹, Loredana Judele^{2*}, Iulian Cucos³,
Ion Antonescu¹, Ionel-Ciprian Alecu⁴**

*¹“Gheorghe Asachi” Technical University of Iasi, Faculty of Civil Engineering and Buildings Services,
Department of Civil Engineering*

*²“Gheorghe Asachi” Technical University of Iasi, Faculty of Civil Engineering and Buildings Services,
Department of Concrete, Materials, Technology and Management*

*³“Gheorghe Asachi” Technical University of Iasi, Faculty of Hydrotechnical Engineering, Geodesy
and Environmental Engineering, Department of Hydrotechnical Constructions*

⁴“Gh. Zane” Institute of Economic and Social Research, Romanian Academy Branch, Iasi, Romania

Abstract

Depletion of world resources, increasing pollution and climate change effects, make it necessary a shift from linear economy to systemic economy – an economy of technologies integrated to reach a non-polluting, zero emissions production system. Transition to renewable resources requires replacing the existing crude oil refinery with biomass refinery. Along with conventional biomass refinery technologies, bioengineering and nano-technologies are becoming significant players of systems in the design of clusters of integrated biorefinery technologies.

This study presents a set of samples obtained by combining biomass waste such as wood waste with other types of recyclable construction waste compatible with the new material. In the context of the growing economy of raw materials, it is considered necessary to develop a material capable of absorbing as much waste as possible from nearby areas. Thus, the investigated samples are presented and analyzed to highlight their physicochemical properties and compatibility with integrated waste and, last but not least, to significantly improve these characteristics by introducing nanoparticles obtained by plasma conversion of municipal waste.

Key words: artificial biomaterial, recyclable waste, synthetic wood

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* Author to whom all correspondence should be addressed: e-mail: loredana-emanuela.judele@academic.tuiasi.ro; Phone: +40232278683/1575