

7th *FTP Conference* - "Pacing Innovation for the Bioeconomy"

Novel Green Building Composites: Properties, Design and Life Cycle Assessment



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Research

Manufacture structural composite materials from rapid-grown and sustainable forest resources.



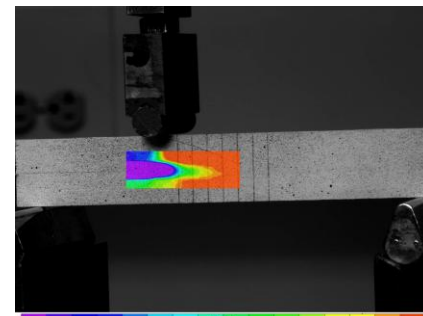
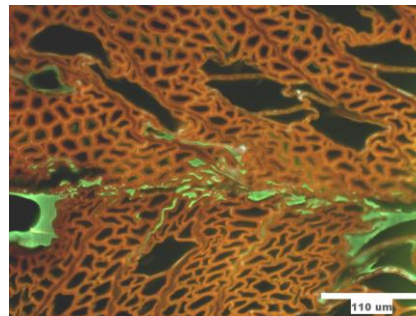
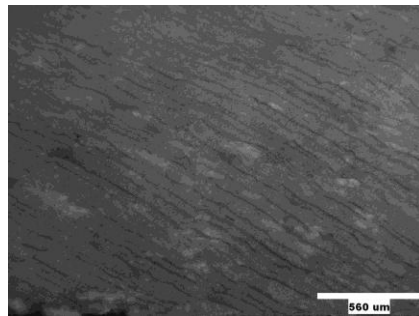
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To improve mechanical properties - wood densification

Research

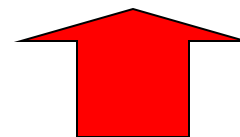
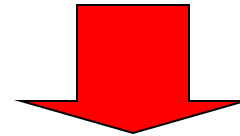
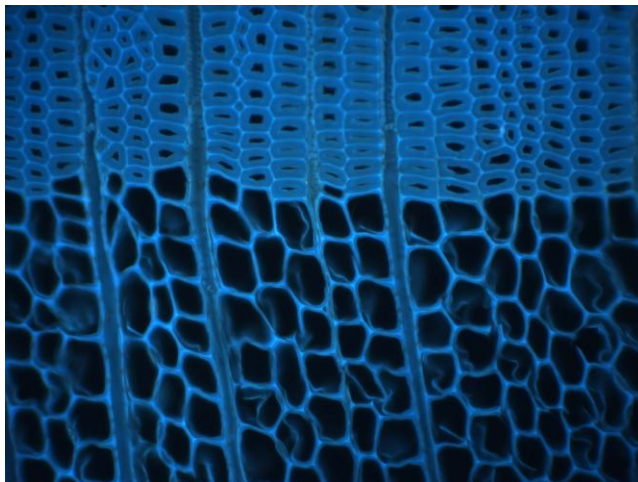


- efficient utilization of plant-based materials for engineering applications
- eco-friendly method to modify low density wood (Thermo-Hydro-Mechanical, THM treatments)
- high performance composites made of THM treated wood
- wood bonding and bond performance testing



Research

- transverse compression behavior of wood in various high temperature and saturated steam conditions and at different stress levels
- relationship between the compression environment and properties of compressed wood



Current Research Focus

Life Cycle Assessment (LCA)

tool for greener and more sustainable materials and buildings

New composites and materials manufactured from renewable resources with positive effects on human health and well-being issues



Glulam reinforced with densified wood (Anshari in sod. 2010).

Development of innovative, high added value applications of materials from renewable resources;



Development of new technologies for improvement of wood and other renewable materials durability (e.g. modification, new technologies for preserva



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Service life prediction of products made of renewable resources in outdoor applications

Increase in sustainability of forest products and wood use: **new concepts**, products and processes optimizing the multiple utilization/ recycling of forest-based resources.

Structuring of end-of-life scenarios of green building materials considering their total life cycle (e.g. reuse and recycling, quality assurance, business concepts and societal issues).



FP7 Projects

Food, Agriculture and Fisheries, and Biotechnology

Area 2.3.4 Biorefinery

KBBE.2012.3.4-01: Conversion of bio-waste in developing countries – SICA (African ACP, Mediterranean Partner Countries).

Environment

Area 6.3 Improving resource efficiency

ENV.2012.6.3-1 Innovative resource efficient technologies, processes and services.

Nanosciences, Nanotechnologies, Materials and new Production Technologies – NMP

Area 4.4 Integration

NMP.2012.4.0-3 Innovation in the forest-based sector for increasing resource efficiency and tackling climate change with competitive customer solutions.

Thank you!