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Wood Materials and Engineering Laboratory
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Natural Fiber Composite Development for Civil Structures

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Over the past 30 years, composite materials use has transitioned from aerospace to automobile and finally to civil structures. Nowhere is this transition more evident than in timber construction where wood composites have substituted for structural component markets once dominated by solid wood. As one of the world's most abundant biological materials, the development of wood-based materials has spanned modified cellulose polymers to laminated structural composites. Today, one of the significant challenges in bio-based materials involves merging the production techniques and material design concepts of synthetic and natural fiber materials. The goal of this merger is to increase the performance, cost, energy, and resource efficiencies of materials used in civil and transportation structures. Towards this goal, WSU has lead strategic research initiatives focused on the development of a new generation of structural wood-based composites. This activity has included organic and physical chemistry of bio-based materials, biocomposite processing, structural design, and industrial outreach.

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