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Bio-Based Materials from Plant Cells: Strategies for Building Functional Bio-Assemblies and Composite Structures

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Message from the Guest Editors

Dear Colleagues,

Plant cells are fascinating hierarchical bio-assemblies that are perfectly designed to fulfill a specific role in nature (structural, protection, energy storage, transportation, etc.) and can adapt in an evolutive environment via polymer remodeling. Though plants have been used for several thousands of years to satisfy human needs such as food, textile, mud houses, etc., new uses may arise from the growing interest in the development of bio-based and smart materials in technical and high-performance applications. In this regard, ongoing interdisciplinary research gathering plant biology, biotechnologies, wood science, and polymers and materials science is a driving force to boost ideas and innovations around the efficient use of wood and plant biomass for the development of new bio-based materials with original functionalities.

Keywords

- plant cells
- materials
- biopolymers
- functionalization
- deconstruction and reassembly
- processes

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Message from the Editor-in-Chief

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