Special Issue

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

Message from the Guest Editors

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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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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