Special Issue

Advances in Bio-Based Wood Adhesives

Message from the Guest Editor

As concerns over the environmental and health impacts of conventional synthetic adhesives, particularly those based on formaldehyde and fossil-derived resins, continue to rise, the search for renewable, biodegradable, and non-toxic alternatives has become a major focus in materials science and wood technology. We welcome original research and reviews on scientific, technological, and industrial challenges in **bio-based wood adhesives**. Topics may include (but are not limited to):

- Development and formulation of adhesives from renewable resources;
- Characterization of adhesive properties;
- Processing technologies and the scalability of bio-based adhesives;
- Binderless technologies and naturally self-bonding wood materials;
- Application of bio-based adhesives in plywood, particleboard, fiberboard, OSB, and laminated wood products;
- Enhancement of adhesive performance via chemical modification, enzymatic treatment, or nanotechnology
- Durability and aging behavior of bonded wood products;
- Environmental impact assessment and life cycle analysis of bio-based adhesive systems;
- Valorization of lignocellulosic by-products and residues in adhesive development;
- etc.

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About the Journal

Message from the Editor-in-Chief

Adhesives have been used since prehistoric times. With recent advancements in nanoscale characterisation techniques and computational methods, it has become possible to study the complex molecular mechanisms of adhesion and design better adhesives for applications spanning from common adhesive tapes and hot-melt adhesives to advanced structural adhesives for aeronautical applications and gel-based or rubber-based adhesives for biomedical applications. Despite progress in the field, challenges remain in linking macroscopic measurements to nanoscale physicochemical interactions. The scope of *Adhesives* covers a wide range of disciplines including physics, chemistry, materials, biology, and engineering, all types of natural and synthetic adhesives, and associated adhesive science and technology.

Editor-in-Chief

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