Biomolecules × Polymer Synthesis = Innovative Plastics

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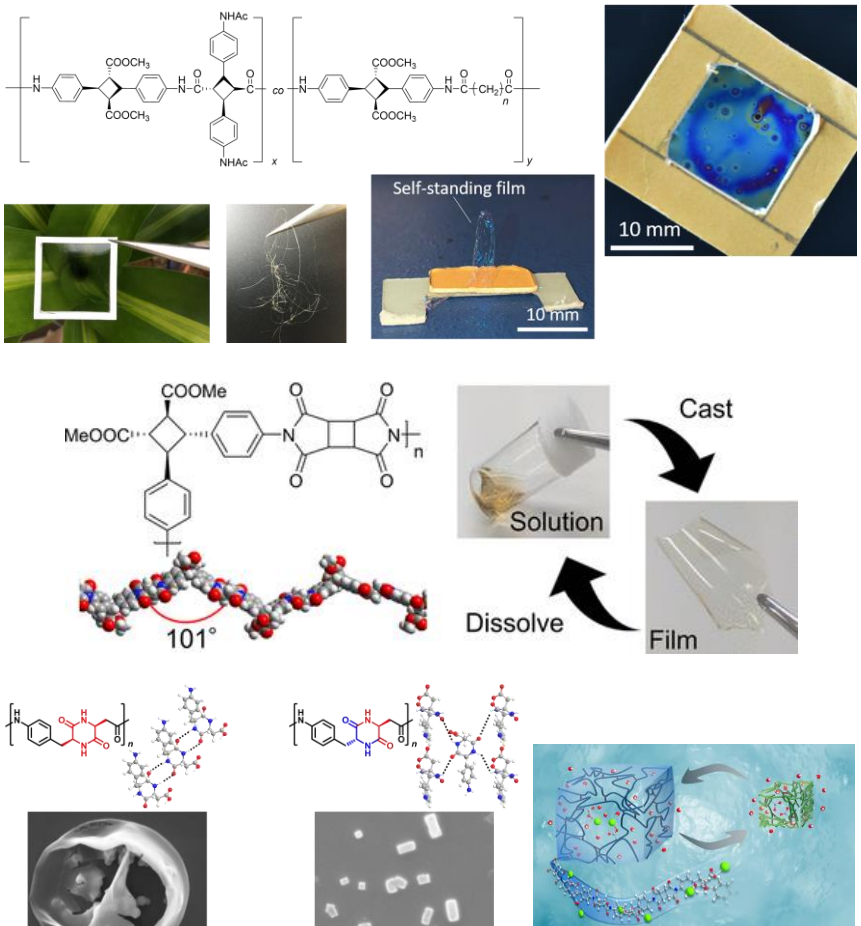

High Performance & Functional Biobased Polymers

Content:

Biobased polymers are often considered environmentally friendly plastics, but their adoption has been limited due to performance shortcomings. To address these issues, our laboratory is developing bio-based plastics that offer both high heat resistance and strength. Typically, when people hear the term “biomolecule,” they might associate it with being “difficult to handle,” “heat-sensitive,” or “low in strength.” However, we have overcome these challenges by forming a ring structure through the dimerization of aromatic amino acids, resulting in a material that defies these perceptions. This innovation enables the replacement of traditional high heat-resistant materials with bio-based alternatives, which have potential applications in devices, as well as in the automotive and aerospace industries. Additionally, we are advancing the development of new functional materials that leverage the unique properties of biomolecules.

Appealing point:

We are focusing on innovative biomass chemistry the keywords “bio-based” and “engineering plastics.” Through industry-academia collaboration, we aim to bring these advancements to applications.

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