



Sustainable Biopolymers

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Message from the Guest Editor

Plastic is associated globally with high levels of waste and marine litter—especially single-use plastic. Petroleum-based plastics have superior properties; however, they are associated with a large CO₂ fingerprint, as plastics are usually incinerated at the end of their life cycle, releasing more CO₂, or are discarded into landfills or seas where they will accumulate exponentially for decades. A silver bullet for the plastic problem is the development of polymers by using natural and biogenic building monomers for a more sustainable environment. Sustainable bioplastics represent a key shift from a Fossil to a Circular Economy. Bioplastics can be developed from plants or animals and have significantly less CO₂ fingerprint in comparison to their counter petroleum-based plastics. Bioplastics derived from plant and animal residues are key for a sustainable bioplastic. The usage of agricultural by-products and residues to produce the needed bioplastic materials has a twofold effect: avoiding exhaustion of human food resources and promoting better management of waste residues, eliminating the need to burn or leaving them to naturally degrade.





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