

Precision Polymerization of Plant-Derived Monomers for Multi-Locked Degradable Biopolymers

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For developing multi-locked degradable polymers from non-edible biomass, we will develop a multi-lock technology by utilizing the technology of precision polymerization, which we had cultivated in the petroleum chemicals, to biomass-based and multi-locked degradable polymers. By the polymerization of non-edible biomass as a raw material, we propose the concept of a manufacturing method for multi-lock biopolymers that can be degraded in the ocean collaborating with industry. In particular, we will focus on abundant, inexpensive, non-edible biomass of glycerol, aromatic compound from non-edible biomass, and etc., by converting them into a polymerizable vinyl monomers. We also reported precision polymerization through mechanistic transformation of different active species, which will be applied for introducing biodegradable segments, such as esters and amides, into common polymers.

