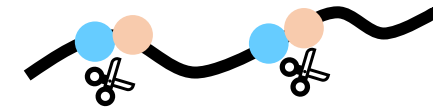


Development and Practical Use of Chemically Degradable Unit for Multi-Locked Polymers prepared by Inedible Biomass

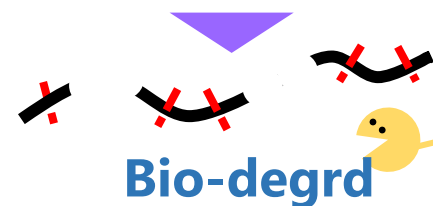
MS Ito PJ

This research provides a mechanism of polymer degradation using natural chemicals in order to help biodegradation and to control the rate and occasion of degradation. For example, **chemical degradable units decomposed by amino acids and ammonia** have been developed and incorporated to biodegradable polymers. Furthermore, the chemical degradation have a potential to change common non-biodegradable polymers to biodegradable chemicals.

We will design and examine several candidates for chemically degradable units using the hydrolysis of active amides and the retro-aldol reaction of β -keto alcohols. Among them, **conjugate substitution reaction** of α -(substituted methyl)acrylates are attractive to realize both stability and degradability. We have already discovered the main chain scission by conjugate substitution reaction in water-suspension and solid-state, whereas the incorporation of the degradable units to biodegradable polyesters have been achieved. We will make more efforts to develop more effective degradable units and their application to multi-locked polymers.



Chem-dgrd



Bio-degrd

Polymer degradation by aqueous ammonia

