Realization of a Low Carbon Society through Game Changing Technologies

Functionalization of Degradable Polymers by Reconstruction of Natural Molecules

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Summary :

Degradable polymers are promising as a key material to solve both current low- and de-carbonization and marine plastic problems. To further advance these materials, we devise a concept, “Natural Molecule Reconstruction,” where components of natural molecules are recombined, blended, and reconstructed by easily decomposable bonds. Thus, this project is deployed for development of human- and environmentally-friendly, next-generation functional materials.

- Develop functionalized degradable polymers linking biomass-based materials such as glycerol, lignin derivatives, amino acids, and fatty acids by easily decomposable bonds such as ether, ester, amide, and carbonate.
- Develop sustainable polymers performing in aqueous environment, as a bulk material, and with controlled degradability.