Special Issue

Production, Extraction, Analysis and Degradation of Bioplastics

Message from the Guest Editors

Bioplastic production from renewable sources has been considered as one of the most effective means of utilizing biomass. In particular, polyhydroxyalkanoates (PHA), which represent biodegradable plastics, are resource-recycling materials produced by biological processes using biomass as a raw material. However, the popularization of PHA has been limited by production cost, which remains relatively high, with raw materials responsible for most of the price. Therefore, to make PHA production more feasible for industrial application, different inexpensive substrates, starch-based materials, cellulosic materials, and hemicellulosic materials have been tested. However, it is essential to improve productivity and to develop effective PHA extraction methods in order to use bioplastics to replace plastics. Fortunately, the improvement of productivity using gene recombination technology has been very successful. PHA can be biodegradable, but it may become an environmental burden if its widespread use causes it to leak into the environment. Therefore, a comprehensive understanding of bioplastic degradation is an urgent requirement.

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