

Special Issue

Seaweed Biorefinery and Related Technologies

Message from the Guest Editors

In order to build a sustainable society, it is necessary to establish "biorefinery technologies" that convert raw materials from petroleum or renewable resources such as biomass, for the production of fuel and a variety of chemical products. Biorefinery is a technical approach that produces fuels and chemicals by fermenting monosaccharides obtained by decomposing polysaccharides from biomass with microorganisms. Seaweed is an unused plant resource, with the exception of several species. Thus, seaweed is attracting attention as an alternative raw material to replace food biomass, cellulosic biomass, and microalgae. In order to establish highly efficient, robust and applicable "seaweed biorefinery technologies", it is necessary to accumulate basic findings based on the following fields: marine bacteria with the activity of decomposing seaweed polysaccharides, seaweed polysaccharide-degrading enzymes (e.g., alginate lyases, ulvan lyases, etc.), physiologically active substances derived from seaweed (e.g., phlorotannins, sterols, fatty acids, and pigment composition), component analysis of seaweed, and seaweed physiology.

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