

Biomass Technology Research Center (BTRC), AIST

Biomass Technology Research Center (BTRC), AIST was established on October 1st, 2005.

Director of BTRC: Dr. Kinya Sakanishi

Mission of BTRC;

Biomass is a renewable and carbon neutral resource, because it fixes CO₂ from the atmosphere by photosynthesis. Recently, it is focused on as an alternative fuel from the viewpoint of global warming mitigation and fossil resource saving. In Japan, biomass is, however, small and dispersive energy in terms of potential and collection, and therefore, R&D is required to convert biomass into energy at higher efficiency. Biomass Technology Research Center (BTRC) studied the technical development and social system for biomass utilization to establish a sustainable society.

In BTRC, main research projects are as follows.

- 1) Ethanol production from woody biomass
- 2) Biomass to Transportable Liquid ~ BTL process ~
- 3) Study on Biomass Total System

Ethanol production from woody biomass

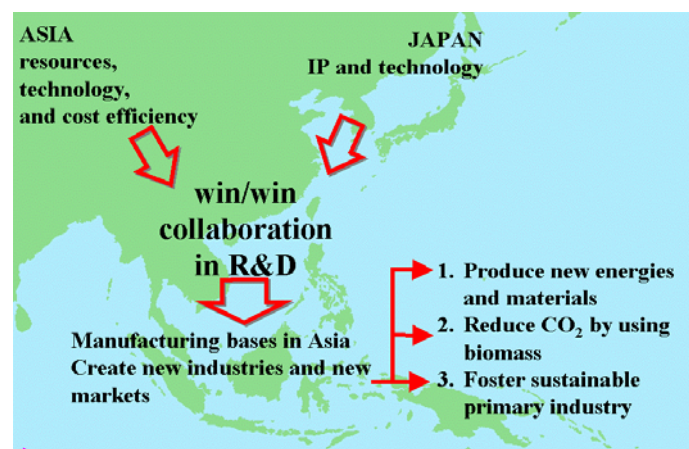
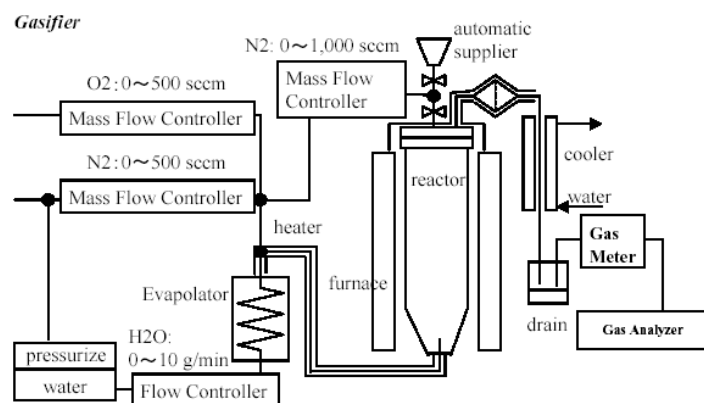
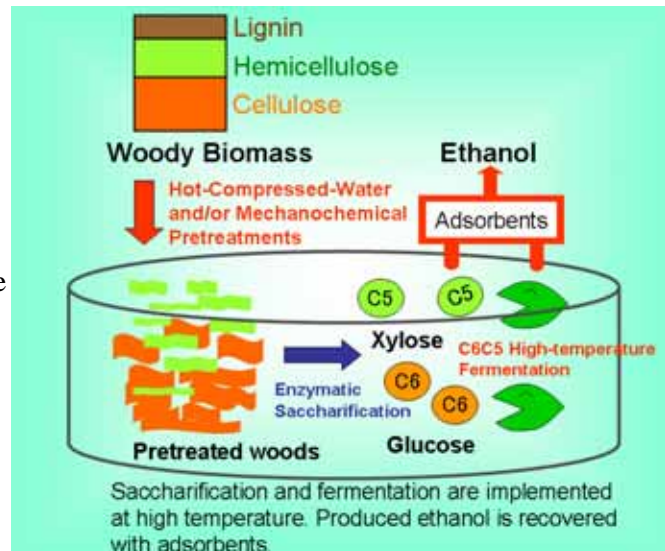
Major components of wood are cellulose, hemicellulose and lignin. In a production process of a liquid fuel such as ethanol from woody biomass, monosaccharides obtained from cellulose and hemicellulose by hydrolyzation (saccharification) are ferment to ethanol. We combine a mechanochemical treatment with a hydrothermal treatment and separate wood components for saccharification. Mechanochemical treatment induces a chemical reaction by mechanical mill and hot compressed water hydrothermal treatment degrades wood components by hot water at more than 100°C. We will develop the economic and high performance techniques for activation of wood components.

Biomass to Transportable Liquid ~ BTL process ~

In order to transport overseas biomass to Japan, it is important to convert bulky biomass into liquid fuels such as gasoline and diesel. These fuels have characteristics of non-fossile resources and non-sulfur content. BTL process consists of gasification to synthesis gas (CO/H₂), hot gas cleaning by active carbon, FT synthesis from CO/H₂ and hydrocracking/isomerization of wax products to increase diesel fraction.

Study on Biomass Total System

Not only technology development but also system development is important to introduce and promote biomass utilization. It is need to construct the economical feasible total system.



Biomass Asia Strategy is our important target =>

