July 20, 2022

Research Association of Biomass Innovation for Next Generation Automobile Fuels

Six Private Companies Establish “Research Association of Biomass Innovation for Next Generation Automobile Fuels”

The start of research on bioethanol fuel production to achieve carbon neutral society

ENEOS Corporation (ENEOS), Suzuki Motor Corporation (Suzuki), Subaru Corporation (Subaru), Daihatsu Motor Co. Ltd. (Daihatsu), Toyota Motor Corporation (Toyota), and Toyota Tsusho Corporation (Toyota Tsusho) established the Research Association of Biomass Innovation for Next Generation Automobile Fuels (Research Association) on July 1, 2022, to study ways to optimize the process of producing fuel.

It is crucial to provide diverse energy options to meet the needs of many different regions and customers in order to achieve carbon neutrality. Hydrogen and synthetic fuels based on electricity from renewable energy sources, as well as bioethanol fuel able to reduce CO_2 emissions through photosynthesis in plants are promising options, and their effectiveness has been confirmed by the Intergovernmental Panel on Climate Change (IPCC). However, it is essential to clarify the issues and search for a solution regarding CO_2 emission reduction and social implementation throughout the manufacturing process, in addition to raw material procurement for any of these fuels.

This Research Association promotes technological research on the use of biomass, as well as the efficient production of bioethanol fuel for automobiles through the optimized circulation of hydrogen, oxygen, and CO_2 during production to achieve a carbon-neutral society. Specific research areas are as follows.

(1) Research on Efficient Ethanol Production Systems

With the aim of improving production technology for second-generation bioethanol fuel that does not compete with food, the Research Association will design, install, and operate production facilities, identify issues with production, research solutions and study ways to improve the efficiency of production systems.

(2) Research on Byproduct Oxygen, CO_2 Capture, and Utilization

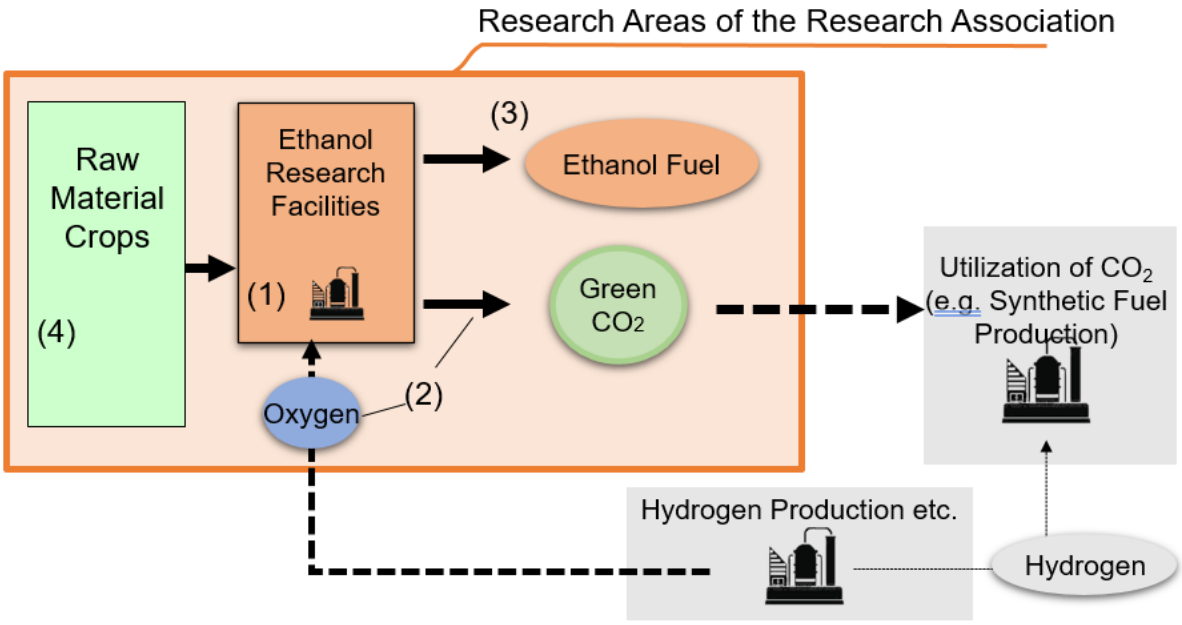
The Research Association will study how to use the high concentration of oxygen generated as a byproduct during hydrogen production as well as the CO_2 generated during bioethanol fuel production.

(3) Research on the Efficient Operation of the Overall System, Including Fuel Utilization

The Research Association will investigate the issues involved with using bioethanol fuel obtained in (1) to automobiles and other vehicles and explore solutions. It will also study model formulas that can make predictions of both raw material cultivation production volumes and fuel production volumes.

(4) Research on Efficient Raw Material Crop Cultivation Methods

The Research Organization will develop a system that proposes optimal cultivation methods formaximizing yield and optimizing crop components to secure raw materials for bioethanol fuels. It will aim to improve the accuracy of crop yield productions through soil composition surveys and other methods.



Overview of Research Association of Biomass Innovation for Next Generation Automobile Fuels

Date of Establishment	July 1, 2022
Chairman of the Board	Koichi Nakata (Head of Carbon Neutral Development Div. Toyota Motor Corporation)
Members	Daihatsu, ENEOS, SUBARU, Suzuki, Toyota, Toyota Tsusho (in alphabetical order)
Location of Headquarters	Fukushima Okuma Incubation Center, Shimizu-230 Shimonogami, Okuma, Futaba District, Fukushima Prefecture
Business Overview	Research on improving the efficiency of carbon neutral technology