

Upgrading of Conventional Biodiesel into H-FAME after Partial Hydrogenation

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Abstracts

Fatty Acid Methyl Ester (FAME) as a conventional biodiesel has been widely used. However, there will be several issues for the requirement for a higher FAME blend, i.e., supply of feedstock, quality assurance and automotive compatibility of FAME, etc. We have focused on non-food *Jatropha* that will be expected as a potential feedstock in future, and then developed the technology to ensure the quality of *Jatropha* FAME met with the World Wide Fuel Charter (WWFC) guideline quality. We have newly introduced the partial hydrogenation technology for upgrading the conventional FAME into the high-quality FAME via. partial hydrogenation, and named the hydrogenated products as "H-FAME". Feasibility study shows that H-FAME will be affordable fuel due to low cost-up. We have carried out an on-road durability test using a testing vehicle of ISUZU D-Max Extend cab/EURO3, and a B10 fuel (10 vol% of *Jatropha* H-FAME/90 vol% of petroleum diesel). After 50,000 km test, it was proved that this B10 fuel could be used on ISUZU diesel engine same as general diesel. Other several advantages of H-FAME technology will be also shown. Of course, this H-FAME technology can be applied to the current Palm FAME, and will contribute to the requirement for a higher FAME blend, i.e., 7.2 million L/d by 2021 in the Alternative Energy Development Plan (2012-2021).

Biography



Dr. Yuji YOSHIMURA is an Emeritus Researcher of National Institute of Advanced Industrial Science and Technology (AIST), Japan. He received a PhD degree (Chemical Engineering) from Kyoto University in 1981. His work has focused on catalysts related with energy and environment, such as clean fuels production from petroleum, coal and biomass, etc. and on fundamental research on heterogeneous catalysis. He has published over 170 research papers and 32 patents. He is now working as a Leader/Research Director of Japan-Thailand JST-JICA SATREPS Project, "Innovation on Production and Automotive Utilization of Biofuels from Non-Food Biomass."

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