

Oral Presentation

Fuels from Waste and Non-Food Feedstocks

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Abstract

Due to the global increasing demand of transport fuel there is the urgent need for alternatives made out of renewable resources. An overview of possible alternative fuels and the corresponding feedstocks is given. The most important alternative fuels today are biofuels, which globally are produced in a total of about 80 million tons per year. The major part represents bioethanol with 63 million tons, followed by biodiesel with 17 million tons. The main feedstocks for alternative fuels in the transport sector are still food products like starch or sugar for bioethanol and vegetable oils for biodiesel. Due to the food vs. fuel discussion so called advanced biofuels are promoted which use non-food feedstocks like lignocellulosic material, non-edible oil crops like *Jatropha*, microbial biomass or waste biomass like used frying oil or animal fat. The presentation covers the current situation of biofuels today with focus on research and technology of the use of waste and non-food materials. The success story of the use of waste cooking oil and high-risk animal fat material for the production of biodiesel in Austria and Europe is presented. Also the current state of the use of *Jatropha* as non-food crop and the use of microalgal oils is outlined, scope and limitations are discussed. Latest developments of process technology for biodiesel production including heterogeneous catalysis as well as biocatalysis are described. Furthermore the production and use of hydrogenated vegetable oils (HVO) for the use as aviation fuel are highlighted. The future potential and limitations of the production and use of alternative fuels as well as the political framework within the European Union are discussed.