

Catalytic Biomass Conversion To Fuels & Chemicals

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Biomass is regarded as a promising renewable resource for alleviating the high dependency on fossil fuels, which can curb the climate change via reducing CO₂ generation. Lignocellulosic biomass, such as trees and crops growing on land, comprises of cellulose, hemicellulose and lignin. Each component can be chemically or biologically converted to fuels and useful chemicals. In addition, the lignocellulosic feedstock can be directly converted to solid, liquid or gas products via thermochemical processes, such as carbonization, pyrolysis or gasification. Algal biomass is also in the limelight as an alternative renewable resource to the lignocellulosic biomass. Micro-algae is widely studied to produce bio-diesel, and the process has been well developed for the last few decades. Macro-algae like brown seaweeds has the structural similarity with lignocellulose, and it has been recently studied for production of fuels and useful platform chemicals through the chemical or biological processes. In this presentation, the speaker will introduce to hydrothermal conversion of macro-algae and upgrading of bio-crude over heterogeneous catalysts for production of fuels and platform chemicals.