Direct Conversion of Biomass Carbohydrates to Platform Molecules

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My project is called the direct conversion of biomass carbohydrates to platform molecules. Hydroxymethylfurfurals and furfurals are promising platform molecules which can be converted to fuel intermediates such as 2 5 dimethylfuran and hydrocarbon fuels. The fuel produced can be used as a liquid transport fuel. These platform molecules can be the answer to the fuel crisis in Zimbabwe and they can also replace fossil fuels which are diminishing at an alarming rate. Reaction conditions of 200 degrees for five minutes using 33mM HCl and 8mM AlCl were found to be the most conducive for producing 91 and 69% furfurals and HMF respectively on untreated wood poplar. This is the solution for the huge crisis we are facing and it can help globally.

Awards Won: