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Rich sugar biomass as raw material for catalytic conversion of glucose into biofuel

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The continuous depletion of fossil fuel reserves has urged the current society to search for new energy feedstocks, not only for the necessity of new fuels, but also for the synthesis of chemicals. In addition, increasing concern about global warming has pointed out that these new energy feedstocks must be obtained according to environmentally friendly processes, which result in a reduction of atmospheric CO₂ emissions. Nowadays, biomass has emerged as the most affordable source of a wide range of chemical compounds, being lignocellulosic biomass the main element. Lignocellulosic biomass is

rich in carbohydrates, and therefore is a valuable starting point for their catalytic conversion into platform chemicals, mainly 5-hydroxymethylfurfural (5-HMF) and levulinic acid (LA). Both 5-HMF and LA could be transformed into biofuels such as 2,5-dimethylfuran (2,5-DMF) and γ -valerolactone, respectively, via hydrogenation. In this work we present the catalytic dehydration of glucose under microwave heating and their extraction from high sugar biomass, concretely *Opuntia Ficus-Indica*, aimed to develop an easy method to obtain 5-HMF and LA selectively from this starting material.

Biography

Alberto Jose Huertas-Alonso was born in Toledo, Spain. He obtained his BSc in Chemistry at Universidad de Castilla-La Mancha (UCLM) and his MSc in Organic Chemistry at the Universidad Complutense de Madrid (UCM) in 2016. His first contact with a research laboratory was during the last year of his Chemistry degree, in the field of organic chemistry, working on sugar dehydration from wine waste to obtain 5-HMF, under the supervision of Dr. Andrés Moreno. After a one year stay at the Medicinal Chemistry Institute, in the National Spanish Research Council, working on drug discovery and organic synthesis, he is now pursuing his PhD at Universidad de Castilla-La Mancha and working on the synthesis of biofuel precursors from rich-sugar biomass.

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