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## Catalytic dehydration of modified carbohydrates as a new approach to efficient biomass utilization in organic synthesis

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Integration of renewable bioresources for sustainable applications is one of the key challenges of modern chemical science and technology. The most perspective approach to the synthetic utilization of plant biomass involves the catalytic conversion of carbohydrates to low-molecular-weight building blocks, which are defined as bio-based platform chemicals. 5-(Hydroxymethyl) furfural (HMF) is one of the key platform chemical that can be used for a wide range of applications. Low stability and difficult isolation process limits utilization of HMF as a reagent in organic synthesis (Figure 1, a). This presentation will introduce an efficient approach to the preparation of stable HMF analogues by direct conversion of modified carbohydrates (Figure 1, b). A highly efficient biomass conversion process based on introduction of a silyl protecting group to glucose allowed to significantly increase the selectivity of furan formation and facilitated its isolation from the reaction mixture. New aspects of synthesis and utilization of HMF and derivatives for biofuels, materials and pharmaceuticals production will also be discussed.

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