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TOPIC(s) : Clean reactions / Biomass conversion

Applications of CO₂/H₂O system in the bio-based platform molecules conversion

AUTHORS

Fei LIU / DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, 457 ZHONGSHAN ROAD, DALIAN, LIAONING

Qiaoyun LIU / DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, 457 ZHONGSHAN ROAD, DALIAN, LIAONING

Aiqin WANG / DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, 457 ZHONGSHAN ROAD, DALIAN, LIAONING

Francois JEROME / UNIVERSITY OF POITIERS / IC2MP, UMR7285, 1 RUE MARCEL DORE,, POITIERS CEDEX 9

Tao ZHANG / DALIAN INSTITUTE OF CHEMICAL PHYSICS, CHINESE ACADEMY OF SCIENCES, 457 ZHONGSHAN ROAD, DALIAN, LIAONING

PURPOSE OF THE ABSTRACT

CO₂/H₂O system is green reaction medium with some unique features, and can be used in different chemical reaction. Especially, it can be used in the reactions catalyzed by weak acids, in which the use of conventional hazardous acids can be avoided. Because a unique and potentially useful property of CO₂/H₂O is the in situ generation of carbonic acid, which is capable of supposed to act as the proton donor in the Brønsted acid-promoted reaction.¹ Therefore, we adopted a cascade strategy for the catalytic conversion of 5-hydroxymethylfurfural as well as of furfural to high-value-added chemicals by a combination of hydrogenation and acid-catalyzed reactions.^{2,3}

FIGURES

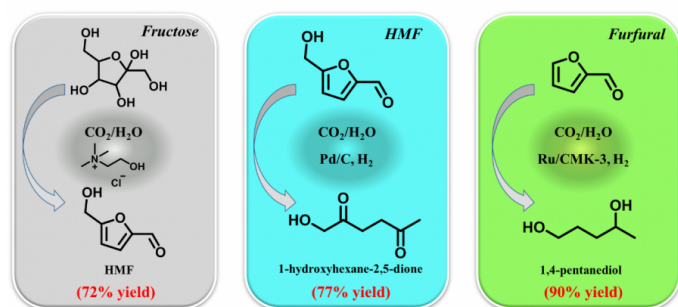


FIGURE 1

scheme 1

Transformation of bio-based platform molecules in the CO₂/H₂O system

FIGURE 2

KEYWORDS

CO₂ | biomass | bio-based products | furfural

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