J Ind Environ Chem 2019, Volume 3
DOI: 10.4066/2591-7331-C1-009

Furfural as platform chemical - Recent advances

Christophe Len
PSL University, France

With an increasingly severe outlook for depleting oil-based resources, wood-based biomass and especially plant waste rich in lignocellulosic feedstocks, appear to be the main alternative to produce many kinds of platform molecules such as furan derivatives. However, recent researches have shown that other kinds of carbohydrates as alginate derivatives could also be exploited as feedstocks for furfural production. As a molecule platform chemical, furfural permits to produce a large range of chemicals having different properties and utilities as solvents, plastics, fuel additives. One important valorisation route of furfural is the liquid phase catalytic hydrogenation. Whereas molecular hydrogen is mostly used in industrial hydrogenation processes, recent studies also showed that alcohols can be used as reductants from which hydrides can be transferred catalytically to furfural. These two strategies: hydrogenation and transfer hydrogenation were developed in batch as well as in continuous flow to produce value-added chemicals such as 2-methylfuran. Our works explore the catalytic behaviour in batch and continuous flow of mono- and bimetallic metal catalysts (Cu, Pd, Pt, Ni) supported on various types of materials (microporous, mesoporous). Methodology, recycling, metal leaching will be discussed.

e:christophe.len@chimieparistech.psl.eu

Notes: