



Activated Carbon Supported Ni Catalysts for Gas Phase Dehydrogenation of Decalin

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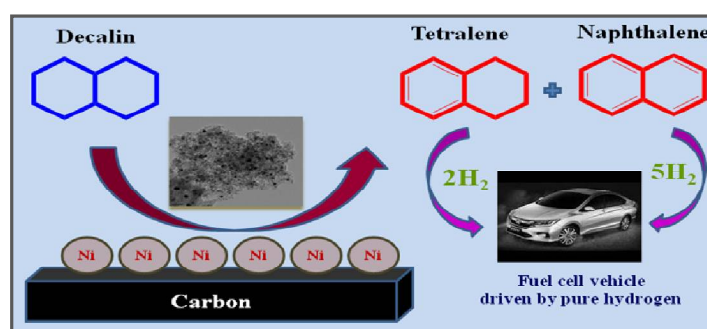
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ABSTRACT

The work is proposed to bring a continuous down flow reactor for the dehydrogenation processes of one of the hydrogen production platform molecule decalin over a non-noble metal Ni based catalysts. Various amount of Ni supported on carbon catalysts were prepared by wet impregnation method and catalysts were evaluated in continuous gas phase dehydrogenation of decalin at atmospheric pressure. Among the prepared catalysts, 15 wt. % Ni/C catalyst exhibited the best catalytic activity due to presence of a greater number of surface Ni species and higher surface area than other catalysts. Cis-decalin performed higher rate of conversion than trans-decalin due to flexible geometric structure of Cis-decalin molecule and it makes easier to be adsorbed on the catalyst surface.

Graphical Abstract



Keywords Activated Carbon, Ni, Decalin, Dehydrogenation.