



Effect of MgO on supported PtSn Catalysts in *n*-Butane Dehydrogenation and Olefin Selectivity

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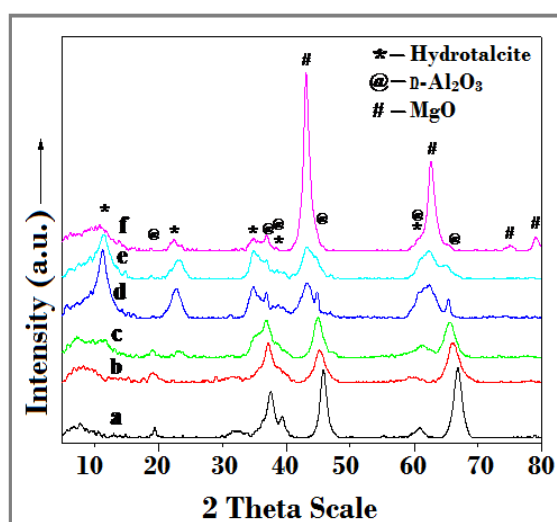
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ABSTRACT

Magnesium oxide loading effect on *n*-butane dehydrogenation and selectivity of butenes was studied on a series of six catalysts PtSn0.5HTL, PtSn1HTL, PtSn2HTL, PtSn3HTL, PtSn7HTL and PtSn9HTL. H₂ chemisorption studies reveal that the first four catalysts exhibit almost similar metal dispersion and metal particle sizes. However, butenes selectivity was increased with increase in the MgO loading in HTL support. This may be due to electronic effects caused by metal support interactions in PtSn_xHTL catalysts. Increase in the basicity of the support increases the butenes selectivity.

Graphical Abstract:



XRD patterns of PtSn_xHTL catalysts after reduction.

Keywords: Dehydrogenation, MgO loading, Selectivity, Butenes.