

Robust Catalysts for Dehydrogenation of Alkylaromatics Using CO₂ as a Soft Oxidant

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Production of Alkenylaromatics such as styrene is very energy-consumable process. It is commercially operated with a large excess of superheated steam as a diluent using potassium-promoted iron oxide catalysts. Therefore lots of efforts have been for reduce it and replace with CO₂. We have also studied that carbon dioxide can play a role as the soft oxidant in the oxidative conversions of several hydrocarbons. Moreover, it was found that CO₂ can suppress the total oxidation in the oxidative coupling of methane and alkylaromatics together with the increase of selectivity and the low rate of coke formation.