

## Methane aromatization over In-HZSM-5 prepared via Microwave Synthesis

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The direct conversion of methane to aromatics hydrocarbon as an upgrading into high-value chemicals is of extending importance due to diminishing aromatics resources in current changing petrochemical industries. Indium belongs to one of the elements which are able to activate methane, which has been proven in SCR with methane. Also Indium exchanged HZSM-5 have been found to be an effective catalyst in the dehydrocyclization and aromatization of light olefins and paraffins as well. Different ways of preparation of indium loaded ZSM type zeolites were expected to give differences in activity and selectivity on aromatics. So far reductive or oxidative solid-state ion exchange between indium precursors and ZSM-5 zeolite had been typical methods for indium incorporation into ZSM-5 framework.

In the present study, we have synthesized indium containing ZSM-5 zeolites prepared by incorporation of indium onto ZSM-5 framework by using microwave and compared with ion-exchanged and impregnated In-HZSM-5 in the methane aromatization reaction.