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Butene Catalytic Cracking to Propylene over Iron and Phosphorus Modified HZSM-5

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Abstract : HZSM-5 zeolites modified by iron and phosphorus were applied in catalytic cracking of butene. N2 adsorption and NH3-TPD were employed to measure the structure and acidity of catalysts. The results indicate that increasing phosphorus loading decreased surface area, pore volume and strong acidity of catalysts. The introduction of phosphorus significantly decreased butene conversion and promoted propylene selectivity. The catalytic performance of catalyst was strongly dependent on the reaction conditions. Appropriate reaction conditions could suppress side reactions and enhance propylene selectivity.

Keywords : butene catalytic cracking, HZSM-5, modification, reaction conditions
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