

REACTION KINETICS, CATALYSIS AND...

载体氧化铝的粒径对对硝基苯酚加氢催化剂Ni/Al₂O₃的影响

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摘要 The catalytic hydrogenation of p-nitrophenol to p-aminophenol was investigated over Ni/Al₂O₃ catalyst on alumina support with different particle size. It is found that support particle size has significant influences on physiochemical properties and catalytic activity of the resulting Ni/Al₂O₃ catalyst, but little influence on the selectivity. At a comparable amount of Ni loading, the catalytic activity of Ni/Al₂O₃ prepared with alumina support of smaller particle size is lower. The reduction behavior of the catalyst is a key factor in determining the catalytic activity of Ni/Al₂O₃ catalyst. The supported nickel catalyst 10.3Ni/Al₂O₃-3 improves the life span of the membrane by reducing fouling on the membrane surface compared to nano-sized nickel.

关键词 [p-nitrophenol](#) [catalytic hydrogenation](#) [p-aminophenol](#) [Ni/Al₂O₃ catalysts](#) [ceramic membrane filtration](#)

分类号

Effect of alumina particle size on Ni/Al₂O₃ catalysts for p-nitrophenol hydrogenation

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Abstract

The catalytic hydrogenation of p-nitrophenol to p-aminophenol was investigated over Ni/Al₂O₃ catalyst on alumina support with different particle size. It is found that support particle size has significant influences on physiochemical properties and catalytic activity of the resulting Ni/Al₂O₃ catalyst, but little influence on the selectivity. At a comparable amount of Ni loading, the catalytic activity of Ni/Al₂O₃ prepared with alumina support of smaller particle size is lower. The reduction behavior of the catalyst is a key factor in determining the catalytic activity of Ni/Al₂O₃ catalyst. The supported nickel catalyst 10.3Ni/Al₂O₃-3 improves the life span of the membrane by reducing fouling on the membrane surface compared to nano-sized nickel.

Key words [p-nitrophenol](#) [catalytic hydrogenation](#) [p-aminophenol](#) [Ni/Al₂O₃ catalysts](#) [ceramic membrane filtration](#)

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