

催化、动力学与反应器

超声浸渍法制备 $\text{Fe}_3\text{O}_4/\gamma\text{-Al}_2\text{O}_3$ 催化剂及其表征、活性研究

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摘要

关键词

[超声浸渍](#) [非均相反应](#) [\$\text{Fe}_3\text{O}_4/\gamma\text{-Al}_2\text{O}_3\$ 负载型催化剂](#) [降解](#) [Fenton试剂](#)

分类号

Preparation of $\text{Fe}_3\text{O}_4/\gamma\text{-Al}_2\text{O}_3$ catalyst by ultrasonic impregnation and its characterization and catalytic activity

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Abstract

Fe_3O_4 catalyst supported on spherical $\gamma\text{-Al}_2\text{O}_3$ was prepared with and without ultrasonic treatment during the impregnation step, and the heterogeneous catalytic oxidation of dimethoate wastewater was conducted with Fenton reagent. Then, the physical and chemical properties of the catalysts were analyzed by means of XRD, ICP-AES and SEM, especially the effect of Fe_3O_4 dispersity on $\gamma\text{-Al}_2\text{O}_3$. The results showed that the activity of the supported catalysts prepared with ultrasonic treatment for dimethoate was higher than those without ultrasonic treatment and the corresponding degradation rate doubled those of the catalyst obtained by impregnation. The probable cause was that for catalysts prepared with ultrasonic treatment, Fe_3O_4 was well dispersed on the catalyst surface with small particle size, or existed in non-crystalline amorphous state, and Fe content on the catalyst surface was higher than those without ultrasonic treatment.

Key words

[ultrasonic impregnation](#); [heterogeneous reaction](#); [\$\text{Fe}_3\text{O}_4/\gamma\text{-Al}_2\text{O}_3\$ supported catalyst](#); [degradation](#); [Fenton reagent](#)

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