

## عنوان مقاله:

Catalytic reduction of 4-nitrophenol over cubic platinum nanoparticles supported on gamma alumina

## محل انتشار:

اولین کنفرانس ملی میکرو نانو فناوری (سال: 1397)

تعداد صفحات اصل مقاله: 4

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## خلاصه مقاله:

In this study catalytic reduction of 4-nitrophenol aqueous solution as highly toxic pollutant was investigated using a new designed Pt/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> nanocatalyst. This nanocatalyst was prepared by w/o microemulsion method with H<sub>2</sub>PtCl<sub>6</sub> as metallic source. The catalytic activity of the prepared nanocatalyst was investigated by reduction of 4-NP in the mild condition. Various key operating parameters such as initial concentration of 4-NP (5-25 ppm), pH of the solution (4-12), and platinum content of the catalyst (0.5-2 %wt) on the degradation rate of 4-NP was studied by Box–Behnken design. Analyses of Variance (ANOVA) were used to examine influence of independent factors and their quadratic interactions. The obtained results indicated that the maximum degradation can be achieved at pH=4, [4-NP]=10ppm and platinum loading of 1.68 wt %.

## کلمات کلیدی:

Nitrophenol (4-NP); W/O Microemulsion; Pt/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub>; Box-Behnken Design-4

## لینک ثابت مقاله در پایگاه سیویلیکا:

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