

## عنوان مقاله:

Silver Nanoparticles Supported on Aminopropyl-Functionalized Clay as Efficient Catalysts for 4-nitrophenol reduction

## محل انتشار:

دومین کنگره بین المللی علوم و مهندسی (سال: 1397)

تعداد صفحات اصل مقاله: 6

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## خلاصه مقاله:

Silver-based heterogeneous catalysts play an important role in the catalytic elimination of environmental pollutants, production of clean energy, fuel distillation and the synthesis of highly value chemical intermediates. Most silver catalysts are mainly applied in the following four domains: chemo-selective oxidation, hydrogenation, photo-catalysis and electro-catalysis. The development of Ag-based heterogeneous catalysts would definitely contribute to the environment improvement and efficient utilization of energy resources. Also there have been several recent reports on the synthesis and characterization of amino magnesium phyllosilicates-modified (AMP-Clay) derivatives in the form of nanocomposites for biomolecules encapsulation, immobilization, biosensing devices, nanoreactors and enzyme reactors of. In this study, we have used silver nanoparticles supported on AMP clay as an efficient catalyst in the sodium borohydride reduction reaction of 4-nitrophenol (4-NP), which was detected by UV-vis absorption spectroscopy. Fourier Transform Infrared spectroscopy (FT-IR), X-ray powder diffraction (XRD), Field Emission Scanning Electron Microscopy (FE -SEM) along with Energy Dispersive X-ray (EDX) Spectroscopy, were used to characterize the catalyst. AMP-Clay/Sal@Ag NPs shows high catalytic activity as a heterogeneous nanocatalyst for the reduction of 4-nitrophenol at room temperature.

## کلمات کلیدی:

Silver, Phyllosilicate, reduction, 4-nitrophenol, pollution

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