عنوان مقاله:

Preparation and characterization of cadmium selenide nanoparticles loaded on activated carbon and their application for muroxide removal: kinetic and isotherm study of removal process

محل انتشار:

دومین همایش ملی نفت ،گاز و پتروشیمی (سال: 1391)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

In the first, cadmium selenide nanoparticles loaded on activated carbon (CdSe-NP-AC) has been synthesized and characterized by different techniques including XRD and SEM. Then, this new adsorbent successfully has been applied for the removal of muroxide (MO) from aqueous solution in batch studies, while the effect of various experimental parameters like initial pH (pH0), contact time, amount of (CdSe-NP-AC) and initial MO concentration (C0) on its removal percentage was examined by one at a time optimization method. It was found following optimization of variable, the adsorption of MO onto (CdSe-NP-AC) followed pseudo-second-order kinetics and show Tempkin and Langmuir models for interpretation of experimental data. It was observed that by increasing the temperature the removal percentage was improved and the positive change in entropy (ΔS◦) and heat of adsorption (ΔH◦) show the endothermic nature of process, while the high negative value in Gibbs free energy change (ΔG◦) indicates the feasible nature of adsorption process

کلمات کلیدی:

Muroxide, Cadmium selenide nanoparticles, Activated carbon, Kinetic, Isotherm