عنوان مقاله:

Synthesis of nanoperovskite type oxides using sol–gel method and its application on removal of azo dye from aqueous solution

محل انتشار:

سومین همایش ملی کاربردهای شیمی در فناوریهای نوین (سال: 1392)

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خلاصه مقاله:

A1–xAxBO3 belongs to the perovskite oxides of the ABO3 structure [1]. In this study, nanoparticles of La1–xCaxCrO3 (x = 0 to 0.5) were fabricated by sol–gel citrate technique. A series of common analyticaltechniques were used to characterize the crystallinity, morphology, specific surface area, and grain size ofthe nanopowders. These properties were characterised by means of XRD, DTA/TGA, SEM, and FTIR. Thecalculated particles size using the Scherrer's formula was about 22 nm.Moreover, the family of perovskite-type oxides could be considered as an adsorbent/catalyst material for theremoval of dyes [2,3]. This study has also investigated the efficiency of La0.9Ca0.1CrO3, as an adsorbent forremoval of azo dye (Eriochrome black T), from an aqueous solution. The effect of different variables forremoval of dye on perovskite nanopowders has been evaluated. The adsorption studies were carried out atdifferent pH values, dye concentrations, various adsorbent dosages and contact time in a batch experiments.The dye removal efficiency was found to be decreased with increasing in initial pH of dye solution, and .thisnanoadsorbent exhibited good dye removal efficiency at acidic pH specially pH 2

کلمات کلیدی:

Perovskite oxides, Sol–gel, Nanopowders, Removal of dye, Eriochrome Black T