

عنوان مقاله:

Graphitic carbon nitride@nickel-aluminium layered double hydroxide nanocomposites

محل انتشار:

بیستمین کنگره شیمی ایران (سال: 1397)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Ghazal Salehi - *Department of Chemistry, Faculty of Science, Tarbiat Modares University, Tehran, Iran*

Ali Reza Mahjoub, - *Department of Chemistry, Faculty of Science, Tarbiat Modares University, Tehran, Iran*

Reza Abazari - *Department of Chemistry, Faculty of Science, Tarbiat Modares University, Tehran, Iran*

خلاصه مقاله:

Through a green protocol, Ni-Al layered double hydroxides (Ni-Al LDHs) with molar ratio of 1:1, 2:1, and 3:1 were prepared in ultrasonic bath at a low temperature using hexamethylenetetramine as template. Effects of the initial reagent concentration, ultrasound illumination power, and reaction time on the shape and size of the nanostructured Ni-Al LDHs were investigated. Under ultrasonic irradiation, the synthesized nanostructures were combined with graphitic carbon nitride (g-C₃N₄) as a new nanocomposite for photocatalytic degradation of Rhodamine B (RhB) dye as a pollutant model. Field emission scanning electron microscopy (FE-SEM), powder XRD, transmission electron microscopy (TEM) and FT-IR spectroscopy were employed to characterize the Graphitic carbon nitride@nickel-aluminium layered double hydroxide nanocomposites (g-C₃N₄@Ni-Al-LDH nanocomposites). g-C₃N₄@Ni-Al-LDH nanocomposites demonstrated a more advanced photocatalytic behavior under visible light, which can be explained by the increased specific surficial area and decreased rate of the electron-hole recombination. The optimal percentage of weight for g-C₃N₄ was 40%. Our synthesized g-C₃N₄/Ni-Al LDH seem to be highly promising for future applications in different commercial fields and industries. Moreover, they are applicable for photodegradation of other organic pollutants

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/851365>

