

عنوان مقاله:

Textile dyes removal by low cost SA-g-(PAAc-co-AM)/AC hydrogel nanocomposite

محل انتشار:

مجله علوم زیستی خاورمیانه، دوره 21، شماره 4 (سال: 1402)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Hydrogels were prepared by the free radical polymerization method successfully to remove textile dyes from the aqueous solution, due to the good properties of the hydrogels as being environmentally friendly, having a high ability to swell, high adsorption efficiency and good chemical stability. These hydrogels include surface SA-g-(PAAc-co-AM) hydrogel and its nanocomposite. The properties of the prepared hydrogels were studied using several techniques, including FESEM, TEM and XRD. Adsorption tests for these surfaces were performed on textile dyes including Brilliant green (BG), Methyl violate (MV), Malachite green (MG), Rhodamine B (RhB) and Brose Bengal (RB). We compared the surfaces of SA-g-(PAAc-co-AM) hydrogel, its nanocomposite and activated carbon (AC) as adsorbents. The best results of the percentage of removal (E%) of textile dyes were in the order of BG, RB, MV, MG and RhB. Arranging in the increasing order are as follows: SA-g-(PAAc-co-AM)/AC, SA-g-(PAAc-co-AM) and activated carbon (AC). The good results of the percentage of removal (E%) of SA-g-(PAAc-co-AM)/AC were also as follows: BG = 98.91, MG = 93.43, MV = 90.98, RhB = 77.55, RB = 70.66.

کلمات کلیدی:

hydrogel, Textile dyes, Acrylic acid, Acryl amide, Brilliant green, Brose Bengal, Methyl violate, Malachite green, Rhodamine B

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