

Abstract

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Synthesis and characterization of halloysite-polythiophene nanocomposite and its application for elimination of nicotine from aqueous solution

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Abstract:

In this study, a novel nanocomposite adsorbent based on Halloysite-polythiophene (HNTs@PTh) was prepared for nicotine adsorption. To this end, thiophene (Th) monomer was polymerized on ball milled yellow powder containing HNTs and FeCl₃ oxidant in toluene medium at different temperatures. The nanocomposite was characterized by Fourier transform infrared spectroscope (FT-IR), field emission scanning electron microscope (FE-SEM), Energy-dispersive X-ray spectroscopy (EDX), X-ray diffraction (XRD) and Thermogravimetric Analysis (TGA). Finally, the ability of the nanocomposite to remove nicotine from aqueous solution was evaluated in a wide range of pH values at room temperature. The results illustrated that the developed adsorbent has a high desire for nicotine adsorption. It should be mentioned that the adsorption process depends on solution pH and initial nicotine concentration. The obtained data were modeled according to the Freundlich and Langmuir adsorption isotherms.

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Biography:

Saeid Nikafshar has completed his MSc at the age of 25 from University of Tabriz and he is looking for PhD position. He is author of many papers (accepted and under review) in reputed journals. He is also working as

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