

عنوان مقاله:

Synthesis of the Nano structured Zinc Oxide Using the Soft template of Cylea barbata miers Extract and its Promising Property for Dye Adsorbent

محل انتشار:

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خلاصه مقاله:

Nanostructured zinc oxide (ZnO) was successfully synthesized by precipitation method using the extract of Cylea barbata Miers (CBM) leaves as a soft template after ۳ h of calcinations in furnace at ۵۰۰°C in the open air. Characterization results showed that the nanostructured ZnO had hexagonal wurtzite structure with space group P۶۳mc and nano-scale particle diameter. It was suggested that the existence of polysaccharide galacturonic acid as the major biomolecular component in the CBM extract induced the formation of the nanostructured ZnO. Preliminary study results through activity testing of adsorbtion for Congo red (CR) dye removal from aqueous solution showed that the nanostructured ZnO exhibited excellent adsorption property, indicating that its adsorption activity was better than that of the commercial ZnO. Regeneration study of the nanostructured ZnO indicated that it could be reused while it .sadsorption activity was kept excellent with removal efficiency >۸۵% even up to five times of the cycling experiments

کلمات کلیدی:

Zinc oxide, Nanostructure, Cylea barbata, soft-template, Adsorbent

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