

## عنوان مقاله:

Utilization of palm bough shell as adsorbent for the removal of methylene blue from aqueous solutions

## محل انتشار:

دومین همایش ملی پژوهش های کاربردی در علوم شیمی، زیست شناسی و زمین شناسی (سال: 1393)

تعداد صفحات اصل مقاله: 7

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## خلاصه مقاله:

In this work, the adsorption and removal of Methylene blue was investigated using palm bough shell with batch method. It was found that the adsorption process was rapid and equilibrium attained in 5 minutes. The optimum pH was about 5.7. The adsorption was studied with Langmuir and Freundlich isotherms. Using the equilibrium concentration constants obtained at different temperatures, various thermodynamic parameters, have been calculated. The amount of  $\Delta H$  was  $61.8 \text{ J mol}^{-1}$  that shows adsorption mechanism is endothermic and process is spontaneous because Gibbs free energy changes ( $\Delta G$ ) was negative so with increasing the heat, more energy would be available to adsorption increasing.  $\Delta S$  was  $+232.2 \text{ J mol}^{-1} \text{ K}^{-1}$ , so the system has an accidental increase in the share surface solid/solution. Kinetic results showed that removal Methylene blue process followed pseudo second order model.

## کلمات کلیدی:

Palm bough shell, removal, methylene blue, Kinetic, equilibrium

## لینک ثابت مقاله در پایگاه سیویلیکا:

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