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## **Adsorption of Rhodamine B Dye from Aqueous Solution by Surfactant Modified Zeolite from Coal Bottom Ash**

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### **Abstract**

Zeolitic material synthesized from coal bottom ash was modified by surfactant hexadecyltrimethylammonium bromide. Surfactant modified zeolite (ZMSPB) was used as alternative low cost adsorbent for removal of Rhodamine B (RB) dye from aqueous solution. The adsorption equilibration was attained after 40 min of the contact time. The adsorption kinetics was tested for models of pseudo-first order, pseudo-second order and Elovich. The adsorption isotherm was analyzed using non-linear equations of the model Langmuir, Freundlich, Temkin and Dubinin-Radushkevich (D-R) and the criterion of best fit was evaluated using error functions. The obtained adsorption data were better described by the D-R model. The results showed that ZMSPB is a good adsorbent for the removal of RB from aqueous effluent.

**Keywords:** *Zeolite, Adsorption, Rhodamine B, Coal bottom ash.*

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