



ADSORPTION OF AQUEOUS SAFRANINE DYE ONTO CHEMICALLY MODIFIED RICE HUSK

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | PACKED BED COLUMN AND STIRRED TANK REACTOR STUDY | Colored wastewater is a consequence of industrial processes & its discharge in natural water causes severe environmental problems. This study shows that chemically modified rice husk, can be used as an adsorbent for Safranine dye from aqueous solutions in stirred tank reactor and packed bed coulmn. The adsorption characteristics of dyes in aqueous solution were shown to be influenced by several factors. Adsorption process was highly pH dependent. At optimized conditions almost 98% dye color can be removed from the wastewater. Stirred tank study shows that the adsorption equilibrium data fitted very well to the Langmuir adsorption at different parameters which represents heterogeneous surface binding and pseudo second order kinetic model provided the best correlation of the experimental data. Column study also proves that dye removal was more efficient in Up-flow mode due to phenomenon of fluidisation. Modelling study was done to predict the column performance and for scale-up purposes. This study can be a platform for the further studies on designing appropriate sorption treatment plants & to predict the rate of pollutant removal from aqueous solution. | Format: Paperback | Language/Sprache: english...



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