

## Crystal violet removal from aqueous solutions using dry bean pods husks powder – optimization and desorption studies

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**Abstract.** In this study the Taguchi method was used to establish the optimal conditions for the adsorption of crystal violet dye on an adsorbent obtained from dry bean pods husk. Six factors, at three level, were considered in establishing the L27 Taguchi orthogonal array. The ANOVA analysis was performed to calculate the each factor percentage contribution on the dye removal efficiency. A desorption study was carried out to evaluate the regeneration possibility of the used adsorbent. The removal efficiency ranged from 5.91 to 94.48 % depending on the controllable factors combination set by Taguchi design. The results showed that the factor with the highest percentage contribution on the dye removal efficiency was the ionic strength (48.85 %). The correlation between the predicted values of the dye removal efficiency with those obtained experimentally indicate a good accuracy of Taguchi approach.

**Keywords:** dye adsorption; crystal violet; dry bean pods husks; Taguchi optimization.

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