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Pineapple peel waste activated carbon as an adsorbent for the effective removal of methylene blue dye from aqueous solution

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Abstract: In present study, the use of low-cost, locally available, highly efficient, and ecofriendly adsorbent pineapple peel has been investigated as an ideal alternative to the current expensive methods of removing Methylene Blue from aqueous solution. Chemical modification of the adsorbent was done for enhancing its sorption capacity by increasing its chelating power using sulphuric acid. Various factors which control the rate of sorption process like; initial dye concentration, adsorbent dose, contact time, agitation time and pH have been studied. The results showed that as the amount of the adsorbent increased, the degree of adsorption increased accordingly and equilibrium adsorption was attained in 30mins. Desorption studies were carried out using HCl for regenerating adsorbent. The results revealed that pineapple peel waste activated carbon (PPWAC) is an effective sorbent and can be used for removing cationic dyes like Methylene Blue from waste water. **Keywords:** pineapple, sorbent, adsorption, aqueous, dye.

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