



Cationic Surfactant Assisted synthesized Copper(II)oxide Nano particles for the Removal of Anionic dyes-Adsorption Isotherms and Kinetics

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ABSTRACT

CTAB assisted synthesized copper(II) oxide nano particles have been successfully used as adsorbent for the removal of anionic dye (Congo red) from aqueous solutions. Batch adsorption studies were conducted using spectrophotometer at the maximum wave length of the dye (500 nm). Langmuir adsorption isotherms are calculated. Results confirm the pseudo second order kinetics. Thermodynamic parameters reveal the spontaneity and exothermic nature of the reaction.

High lights

- CuO-CTAB nano particles are proved to be best adsorbents for the adsorption process.
- The anionic dyes (Congo red) can be best removed from aqueous solutions by using adsorption technique.
- At the optimum conditions of the adsorbate and adsorbent the isotherms, kinetics and thermodynamic parameters are calculated.

Keywords: Surfactant CTAB, CuO nano particles, Adsorption, Congo red.
