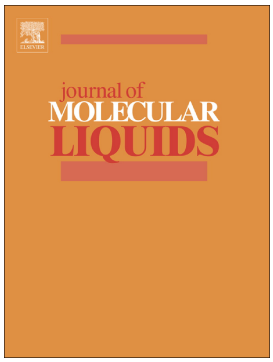

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Interaction of anionic dyes with polyaniline implanted cellulose: Organic π-conjugated macromolecules in environmental applications

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Abstract

The selective response of most of the adsorbents towards a particular dye creates problem in launching them as adsorbent in real field applications. **Owing to that we have synthesized organic macromolecule of polyaniline implanted cellulose through vapour phase polymerization method. Polyaniline implanted cellulose was found as a cationic charge transport medium and thus enthusiastically chosen to observe its interaction with anionic dyes as adsorbent media.** The prepared material was found crystalline in X-ray diffraction (XRD) measurement. Scanning electron microscopy (SEM), Raman spectroscopy, optical absorbance, and electrical current-voltage measurements were carried out to explore its physical properties. The polyaniline implanted cellulose substrate has shown excellent adsorptive response with anionic dyes of methyl orange (MO) and eosin yellow (EY). **More than 97% removal efficiency was observed at optimum experimental conditions for both the dyes and**