



Removal of Toxic Dyes by Acid Activated Clay from Dye Effluents through Adsorption: A Sustainable Approach

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Abstract : Treatment of waste water containing dyes draws everyone attention as it is a serious environmental issue. For the betterment of society, sustainable method like adsorption using adsorbent like clay is suggested for removing these dyes from effluents. Now clay treated with acid offers greater efficiency for dye removal than untreated one. So in the present work, acid activated clay is used for the adsorption of anionic dye Acid Violet 49 from aqueous solution. Affective adsorption parameters of dye including contact time, initial dye concentration, adsorbent dosage, solution pH and ionic strength was investigated by carrying out batch experiments. To know the rate of dye removal kinetic models were applied which indicated that mechanism of adsorption is governed by pseudo second order model. FTIR and SEM techniques were used to know the structural modification occurred on the surface of adsorbent after adsorption.

Keywords : AV49, acid activated clay, kinetics, adsorption, adsorbent.

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