**Abstract**

The present work describes the synthesis and characterization of reduced graphene oxide based nickel nanoparticles containing beta cyclodextrin composite and its application for removal of textile dye from aqueous medium. For this purpose graphene oxide is produced by modified Hummer’s method, then after, GO-CD and GO-CD-Ni nanocomposites are synthesized via wet chemical method. The synthesized adsorbents (GO, GO-CD and GO-CD-Ni) are characterized using different characterization techniques such as FT-IR, XRD, FE-SEM. Also, the various parameters affecting dye removal like pH, contact time, amount of adsorbents and initial dye concentrations are investigated. The synthesized adsorbents exhibits excellent adsorption performance for the removal of textile dyes. The adsorption process is pH dependent and the adsorption capacity is increased with the increase in contact time and with that of adsorbent dosage.