ABSTRACT

Over the last few decades, toxic compounds have lowered the quality of water. Graphene-based metallic nanocomposites were used to remediate these toxic compounds. Graphene has a high surface area for adsorption and a unique photocatalytic efficiency. A modified Hummer method was used to synthesize graphene. The hydrothermal method was used to synthesize GO-Cu and rGO-Cu nanocomposites. The UV-Visible spectrophotometer was used to find out the λ_{max} of GO, GO-Cu, and rGO-Cu nanocomposites (Agilent Technologies Carry 60). Under UV light (253 nm UV lamp), the activities of these nanocomposites were tested with industrial waste and dyes such as methyl orange and methylene blue. Photocatalytic degradation of industrial waste was achieved with GO, rGO-Cu, and GO-Cu nanocomposites at 42.6%, 88%, and 98.4%, respectively.