

## Methyl Red Dye Adsorption On PMMA/GO and PMMA/GO-Fe<sub>3</sub>O<sub>4</sub> Nanocomposites: Equilibrium Isotherm Studies

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**Abstract :** Performances of the methyl red (MR) dye adsorption on poly(methyl methacrylate)/graphene oxide (PMMA/GO) and poly(methyl methacrylate)/graphene oxide-Fe<sub>3</sub>O<sub>4</sub> (PMMA/GO-Fe<sub>3</sub>O<sub>4</sub>) nanocomposites as adsorbents were investigated. Our results showed that for adsorption of MR dye on PMMA/GO-Fe<sub>3</sub>O<sub>4</sub> and PMMA/GO nanocomposites, 80 minutes, 298 K, and pH 2 were the best contact time, temperature and pH value for process, respectively, because the optimum adsorption of the MR dye with both nanocomposite adsorbents were observed in these values of the parameters. The equilibrium study results showed that PMMA/GO-Fe<sub>3</sub>O<sub>4</sub> and PMMA/GO were suitable adsorbents for MR dye removing and were best in agreement with the Langmuir isotherm model.

**Keywords :** adsorption, isotherm, methyl methacrylate, methyl red, nanocomposite, nano magnetic Fe<sub>3</sub>O<sub>4</sub>

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