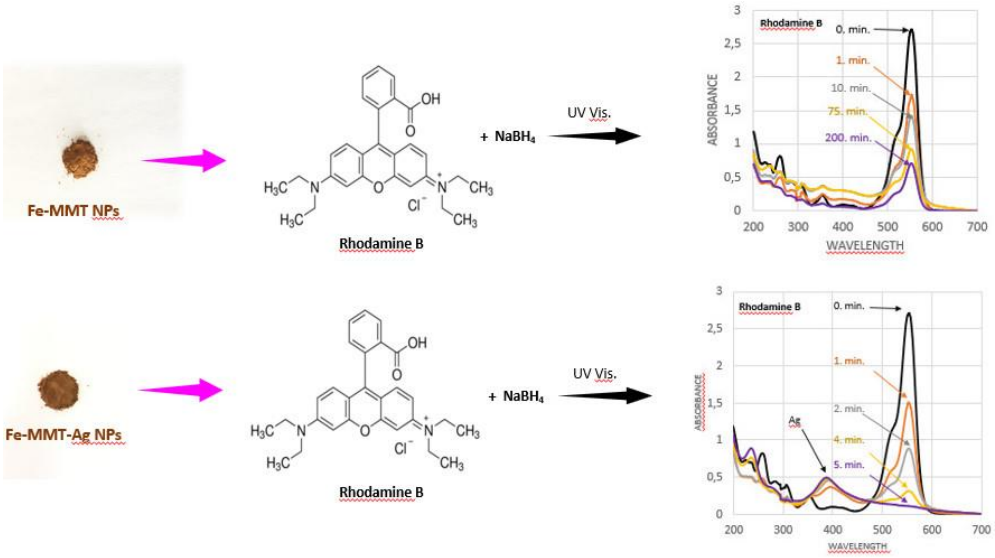
P 11. THE INVESTIGATION OF DEGRADATION OF RHADOMINE B DYE BY USING SILVER DOPED FE-MMT NANOCOMPOSITE

Musa Kazım Acar[1], Türkan Altun[1], İlkay Hilal Gübbük[2]

[1]*Department of Chemical Engineering, Konya Technical University, Campus, 42079 Konya, Turkey*
[2]*Department of Chemistry, Selcuk University, Campus, 42075, Konya, Turkey*

E-mail: acarmusakazim@gmail.com, turkanaltun@yahoo.com, ihilalg@gmail.com

ABSTRACT: Nowadays, synthetic dyes used in industries such as leather, textile, plastic, paint, paper, food, printing, pharmaceuticals and cosmetic pose a serious threat. These dyes have a carcinogenic and toxic effect. Also, these dyes are much dangerous for ecosystem living beings as well as human life [1]. Rhodamine B (RhB), the kind of these synthetic dyes, is mostly used as a colorant in foodstuff and textile [2]. The adverse effects such as carcinogenic, neurotoxicity and chronic toxicity have been reported experimentally harmful toward humans and animals [3]. On that note, removal of RhB is an issue to consider. In this study, silver doped magnetic-clay (Fe-MMT-Ag) nanocomposite was synthesized and characterized by SEM, XRD and IR. Fe-MMT-Ag nanocomposite was used in order to degradation of RhB (Figure 1.). Sodium borohydride ($NaBH_4$) used as reducing agent during the dye degradation experiment. Fe-MMT-Ag exhibited high RhB removal rate, which reached 96,4% within 5 min. However, when Fe-MMT used alone in order to degradation of RhB, reached %75,98 within 200 min. As a result, when used Ag doped Fe-MMT nanocomposite there has been a significant improvement in the degradation of RhB. Fe-MMT magnetic nanoclay has lower and weaker catalytic properties compare to Ag doped Fe-MMT nanocomposite. Briefly, the catalytic effect of silver was evident.



Keywords: Rhodamine B, Silver, Nanocomposite, Degradation

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