

Weeranuch Boonrung 2010: Organic Compounds and Color Removal by Fenton and Coagulation Processes in Textile Wastewater. Master of Engineering (Environmental Engineering), Major Field: Environmental Engineering, Department of Environmental Engineering. Thesis Advisor: Associate Professor Suthep Sirivittayaphakorn, M.Eng. 125 pages.

The textile wastewater was carried out using fenton's process ($\text{FeSO}_4 : \text{H}_2\text{O}_2$), chemical coagulation by aluminium sulfate and poly aluminium chloride with jar test. The jar test was set at rapid mixing 100 rpm for 10 minute then turn down to slow mixing 40 rpm for 30 minute and stop to wait for 30 minute.

The suitable conditions of fenton were 0.92 g/l of ferrous sulfate and 6.38 g/l of hydrogen peroxide at pH 3.4 and time for reaction of 150 minute. The treatment efficiencies for turbidity, color and COD were 97.85, 52.83 and 79.98 % respectively. Using aluminium sulfate amount 2.56 g/l at pH 7.20 the treatment efficiencies for turbidity, color and COD were 94.02, 76.28 and 42.96 % respectively. Using poly aluminium chloride amount 4.00 g/l at pH 7.40 the treatment efficiencies for turbidity, color and COD were 96.12, 86.75 and 54.18 % respectively.

The best treatment efficiency was fenton. The treatment costs of fenton, aluminium sulfate and poly aluminium chloride were 125.32, 25.79 and 83.15 baht / m^3 of wastewater respectively.

Student's signature

Thesis Advisor's signature