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SUWANNA MUKEM : TREATMENT OF TEXTILE DYEING WASTEWATER BY  
COAGULATION WITH FENTON'S REAGENT. THESIS ADVISORS : CHAOVAYUT

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This study is conducted to investigate the efficiency of Fenton's reagent (hydrogenperoxide + ferrous ion ( $Fe^{+2}$ )) in removing the color and chemical oxygen demand (COD) of reactive dyed wastewater. The textile dyeing wastewater was treated in a continuous reactor. The experiments were divided into 2 parts. Each part tested 2 FTP (Fenton's Process) units; one had influent pH of 3 and the other had pH of 4. The flow rate was 0.50 L/min for part I and 0.25 L/min for part II.

The results of this study showed that the efficiencies of the process with the influent pH of 3 for part I and part II were 89.21% and 78.07% for color removal and 66.99% and 51.61% for COD removal. The efficiencies of the Fenton's process with the influent pH of 4 for part I and part II were 90.19% and 79.05% for color removal and 65.18% and 54.13% for COD removal. Statistical analysis at a 0.05 level of significance showed that efficiencies of the process using influent pH of 3 and pH of 4 were not significantly different ( $P$ -value  $> 0.05$ ) in removing color and COD. The experiment showed that the color and COD removal efficiency of the process with a flow rate of 0.50 L/min was significantly higher than that of the process with a flow rate of 0.25 L/min.

It can be concluded that 0.50 L/min of flow rate with 20 minutes of contact time in a slow mixing treatment process with influent pH of 4 achieves good removal efficiency.