

STUDI DEGRADASI ZAT PEWARNA AZO, METIL ORANYE MENGGUNAKAN FERRAT (FEO42-)

Title	STUDI DEGRADASI ZAT PEWARNA AZO, METIL ORANYE MENGGUNAKAN FERRAT (FEO42-)
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Abstract	<p>Synthesis of ferrate and its application to azo dyes degradation have been investigated. The synthesis was carried out by reacting $\text{Fe}(\text{NO}_3)_3$ solution with NaOCl in alkaline condition. Oxidation reaction of azo dyes was carried out by adjusting the molar ratio of ferrate to azo dyes. When ferrate reacted with azo dyes, its absorbance was monitored using UV-Vis spectrophotometer at pH condition that had been optimized. Kinetics study for azo dyes degradation was carried out at the absorbance maximum of azo dyes, as a function of time. Ferrate can oxidize azo dyes, methyl orange effectively in optimum pH of 9.6. With the molar ratio of ferrate/azo dyes 5/1, it showed that the percentages of methyl orange degradation reached 100%. The azo dyes degradation followed first order of kinetics. Analysis using UV-Vis spectrofotometry suggests that the products of azo dyes degradation are nitrate, ammonia, and benzene. This results showed that ferrate is an alternative and green oxidizing agent which can be used for azo dyes degradation.</p>
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