

UV-ENHANCED OXIDATIVE DEGRADATION OF INDUSTRIAL EFFLUENT

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ABSTRACT

The paper deals with the application of advanced oxidation processes (AOPs) viz. UV/H₂O₂, H₂O₂/FeSO₄ and UV/H₂O₂/FeSO₄ and are found effective for on-site destruction of hazardous and refractory organic pollutants in an industrial wastewater, contains a variety of phenolic or other organics, collected from a major coal complex. Photo-Fenton reaction has been found to work better than Fenton or UV/H₂O₂ reaction. Sequential addition of H₂O₂ and catalyst, Fe⁺², reduce COD of wastewater very effectively within a reasonably short time span than one-time addition of the reagents. The pH of the reaction medium plays an important role in the oxidative degradation process and maximum COD reduction has been achieved at a pH of about 4.

KEYWORDS: UV-Enhanced Oxidative Degradation, Fenton or UV/H₂O₂ Reaction, H₂O₂, Catalyst, COD Reduction