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Treatment of Cutting Oily-Wastewater by Sono-Fenton Process: Experimental Approach and Combined Process

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Abstract : Conventional coagulation, advance oxidation process (AOPs), and the combined process were evaluated and compared for its suitability to treat the stabilized cutting-oil wastewater. The 90% efficiency was obtained from the coagulation at Al2(SO4)3 dosage of 150 mg/L and pH 7. On the other hands, efficiencies of AOPs for 30 minutes oxidation time were 10% for acoustic oxidation, 12% for acoustic oxidation with hydrogen peroxide, 76% for Fenton, and 92% sono-Fenton processes. The highest efficiency for effective oil removal of AOPs required large amount of chemical. Therefore, AOPs were studied as a post-treatment after conventional separation process. The efficiency was considerable as the effluent COD can pass the standard required for industrial wastewater discharge with less chemical and energy consumption.

Keywords : cutting oily-wastewater, advance oxidation process, sono-fenton, combined process
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