Sono-Electrocoagulation of Fresh Leachate from Municipal Solid Waste; Simultaneous Applying of Iron and Copper Electrodes

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Fresh leachate of municipal solid waste (MSW), is a kind of high-strength organic wastewater, so generally could lead to rapid and massive bioactivity of microorganisms. Fresh leachate (FL) often defined as a hazardous and heavily polluted wastewater. Thus, this study aimed to investigate treatment of fresh leachate from Municipal Solid Waste by Sono-Electrocoagulation process with dual applying of Iron and Copper electrodes for enhance the removal of COD and TSS. The effects of reaction time and voltage on COD and TSS removal has been studied. Sono-electrocoagulation process was found to be more efficient than ultrasonic waves and electrocoagulation processes in COD removal. The efficiency of COD removal was found to be 98% in the case of sono-electrocoagulation process. In the removal of Total Suspended Solids (TSS), electrocoagulation was found to be more efficient than other processes. The efficiency of TSS removal was found to be 79% in the case of electrocoagulation process. The COD and TSS removal increased with increasing reaction time and voltage. Sono-electrocoagulation was found to be efficient in fresh leachate treatment. The results show that ultrasound was significantly enhanced in the electrocoagulation process.

Keywords: Sono-electrocoagulation, Fresh Leachate, Electrocoagulation, Ultrasonic, Copper Electrode, Iron Electrode

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