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Effect of current strength on electrocoagulation using Al-Fe electrodes in COD and TSS removal of domestic wastewater

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Abstract

Domestic wastewater is wastewater from household activities such as kitchens, baths, laundry, and water closets. Domestic wastewater contains parameters that can cause environmental pollution, so it needs to be treated. One of the domestic waste treatment technologies is electrocoagulation.

Electrocoagulation is a continuous coagulation process using direct electric current through electrochemical events. The purpose of this study was to determine the effect of current on electrocoagulation using Al-Fe electrodes in reducing contaminant levels of domestic wastewater (COD and TSS). The electrode configuration used in this study was Al-Fe, with a variation of the current strength used was 1 A, 2 A, 3 A. The electrocoagulation process was carried out

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Efficient removal of tannins from anaerobically-treated palm oil mill effluent using protein-tannin complexation in conjunction with electrocoagulation

Khongkliang, P. , Khemkhao, M. , Mahathanabodee, S. (2023) *Chemosphere*

Domestic wastewater in Indonesia: generation, characteristics and treatment

Widyarani , Wulan, D.R. , Hamidah, U. (2022) *Environmental Science and Pollution Research*

The Efficiency of Reducing COD and Turbidity of Tofu Wastewater using A Combination of Electrocoagulation and Ozone

Oktiawan, W. , Samadikun, B.P. , Ashari, A.S. (2022) *IOP Conference Series: Earth and Environmental Science*

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continuously with a contact time of 12 minutes. The sampling process was replicated at 12 minutes, 17 minutes, 22 minutes, 27 minutes, 32 minutes, 37 minutes and 42 minutes. The instrument used in this study was an electrocoagulation reactor with dimensions of 6 cm x 10 cm x 18 cm with Al and Fe electrode configurations. Treatment of domestic waste using electrocoagulation and filtration technology can remove COD parameters in the Al-Fe electrode configuration with a current of 2 A and sampling at 27 minutes with an efficiency of 95%. The most optimum removal of TSS parameters of 94% was obtained in the Al-Fe electrode configuration with a current of 2 A and taking samples at 37 minutes. © 2021 IOP Conference Series: Earth and Environmental Science

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