

عنوان مقاله:

Produced Water Treatment Using a New Designed Electroflotation Cell

محل انتشار:

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خلاصه مقاله:

A novel continuous electroflotation cell, about ۰.۶ liter volume capacity, using aluminum electrodes was designed for oil produced water treatment. The treating performance of a novel continuous electroflotation cell for oil produced water was investigated. The pH, current density, and feed water flow rate as affecting parameters of electroflotation process were studied. The results show that the removal efficiency decreased with increasing feed flow rate. However, it increased with increasing current density. The AC current was preferred because DC current causes passivation of the anode with time. The maximum removal for all types of pollutants is achieved at pH۶. The designed electroflotation cell could remove different constituents of oil produced water with range ۸۷.۵ - ۹۹.۵ % at ۲۵°C, ۵V, pH۷ and AC current density of ۸۰A/m^۲ through a bipolar connection of the ۸ electrodes with feed water flow rate of ۶۰ml/min (۳.۶l/hr). The energy consumption was about ۱.۳۸Kwh/m^۳ and the operating cost (cost/m^۳) was about ۰.۳US/m^۳ for the produced water treatment.

کلمات کلیدی:

Electroflotation, Produced Water, Water Treatment, cell design

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