Short Communication

Experimental Study on Removal of Emulsified Oil by Electrocoagulation with a Rotating Container

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doi: 10.20964/2019.06.47

Received: 6 February 2019 / Accepted: 18 March 2019 / Published: 10 May 2019

Electrocoagulation (EC) was proved to be highly effective to remove the oil from oily sewage in an oilfield. However, much work still needs to be done to improve the oil removal performance and to reduce the energy consumption of the EC device. In this text, a rotating container method was employed for the purpose of strengthening the mass transfer process in the EC device. Firstly, the effect of different rotation rates and APEs on the oil removal process was determined, showing that the rotation of the container decreases the effect of EC on oil removal. Then, the effect of the current density on oil removal was investigated, showing that the oil removal efficiency rises with increasing current density. Lastly, the effect of the rotation rate on the appearance time of flotation was investigated, showing that the rotation of the container slows down the formation of floating floc, resulting in a lower oil removal efficiency.

Keywords: Electrocoagulation; oily sewage; oil removal efficiency; rotation container.

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