

Application of Dissolved Air Flotation for Removal of Oil from Wastewater

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Abstract : Mixing the waste water of industries with natural water has caused environmental pollution. So researcher try to obtain methods and optimum conditions for waste water treatment. One of important stage in waste water treatment is dissolved air flotation. DAF is used for the removal of suspended solids and oils from waste water. In this paper, the effect of several parameters on flotation efficiency with Cationic polyacrylamide as flocculant, was examined, namely, (a) concentration of cationic flocculants, (b) pH (c) fast mixing time, (d) fast mixing speed, (e) slow mixing time, (f) retention time and temperature. After design of experiment, in each trial turbidity of waste water was measured by spectrophotometer. Results show that contribution of pH and concentration of flocculant on flotation efficiency are 75% and 9% respectively. Cationic polyacrylamide led to a significant increase in the settling speed and effect of temperature is negligible. In the optimum condition, the outcome of the DAF unit is increased and amount of suspended solid and oil in waste water is decreased effectively.

Keywords : dissolved air flotation, oil industry, waste water, treatment

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