International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.11, pp 123-127, 2018

Combination of Solid-Liquid Separation Process to Remove Grease, Oil and Organic from Food and Dairy Wastewater

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Abstract : Oily wastewater pollution could affect source water quality since the industrial will discharge the treated wastewater into river body. Treatment methods of oily wastewater, including floatation, coagulation, biological treatment, has different capability to remove pollutant. Aim of this study is to compare the efficiency removal of combination of solid-liquid separation process to remove, organic grease, oil and organic compound simultaneously. This study applied four treatments that is floatation only (F), coagulation-floatation (CF), floatation-activated sludge (FAS), coagulation-floatation-activated sludge (CFAS). Poly aluminum chloride (PAC) coagulant 50 mg/L was added as pretreatment, floatation was setup under pressure at 30, 50, 70 psi and recycle ratio 0.25; 0.5; 75. The results shown that combination solid-liquid separation, such as FAS have shown a good performance. It was observed that PAC coagulation as pretreatment had successfully enhanced solid-liquid separation process, such as in CF and in CFAS. CFAS system performed the highest removal of BOD 70% and 95% removal of grease and oil.
Keywords : coagulation, floatation, activated sludge, grease, oil, organic, separation.

Euis Nurul Hidayah *et al* /International Journal of ChemTech Research, 2018,11(11): 123-127.

DOI= http://dx.doi.org/10.20902/IJCTR.2018.111112

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