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KATTIKA THURDTHOONTHAM : EFFICIENCY OF OIL-WATER SEPARATION
FROM A GAS STATION BY FLOTATION AND CORRUGATED PLATES.
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The purpose of this research was to study the efficiency of using flotation and corrugated plates methods to separate oil and grease, and suspended solids in wastewater from a selected gas station. The planned experiments which consisted of two options were run in a laboratory. In the first option, waste-water treatment was carried out by plain sedimentation in the first chamber and by corrugated plates in the second chamber of the experimental unit. While in the second option, air diffusers were installed on the bottom of the first chamber to provide air bubbles for flotation effects provided that there was no change in the second chamber. The experimental unit called a separator was a galvanized-steel tank with dimensions of $12.5 \times 80 \times 60$ cm, which was divided into two chambers. The first chamber was provided for sedimentation of suspended solids and the second chamber in which corrugated plates were installed was provided for oil and grease separation. The corrugated plates were small wave resin sheets. They were arranged in parallel with spacing of 0.6 cm in a 45 – degree inclined housing.

The results indicated that the first option yielded 67.11 % oil and grease removal efficiency, and 67.70 % suspended solids removal efficiency. For the second option, removal efficiency was 78.69 % for oil and grease, and 77.42 % for suspended solids. Based on the findings, conclusion was made that the efficiency of flotation and corrugated plates oil/water separation was higher than sedimentation and corrugated plates oil-water separation with a statistical significance of P- value < 0.001 , $\alpha = 0.05$.