

Demulsification of Oil from Produced water Using Fibrous Coalescer

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Abstract : In the petroleum drilling industry, besides oil and gas, water is also produced from petroleum production. which will have oil droplets dispersed in the water as an emulsion. Commonly referred to as produced water, most industrial water-based produced water methods use the method of pumping water back into wells or catchment areas. because it cannot be utilized further, but in the compression of water each time, the cost is quite high. And the survey found that the amount of water from the petroleum production process has increased every year. In this research, we would like to study the removal of oil in produced water by the Coalescer device using fibers from agricultural waste as an intermediary. As an alternative to reduce the cost of water management in the petroleum drilling industry. The objectives of this research are 1. To study the fiber pretreatment by chemical process for the efficiency of oil-water separation 2. To study and design the fiber-packed coalescer device to destroy the emulsion of crude oil in water. 3. To study the working conditions of coalescer devices in emulsion destruction. using a fiber medium. In this research, the experiment was divided into two parts. The first part will study the absorbency of fibers. It compares untreated fibers with chemically treated alkaline fibers that change over time as well as adjusting the amount of fiber on the absorbency of the fiber and the second part will study the separation of oil from produced water by Coalescer equipment using fiber as medium to study the optimum condition of coalescer equipment for further development and industrial application.

Keywords : produced water, fiber, surface modification, coalescer

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