

## **ABSTRACT**

*MWCNT/SDS nanofluids are an innovation in Enhanced Oil Recovery (EOR) technology that aims to improve oil recovery efficiency. The main challenge in its application is to disperse the MWCNTs into a carrier liquid such as water. For that, sonication is required to improve the stability and performance of the nanofluids. This study aims to investigate the effect of sonication time on the properties of MWCNT/SDS nanofluids, focusing on viscosity, stability and contact angle. Experiments were conducted with sonication times of 10, 20, 30, 45, and 60 min, using the best concentrations of MWCNT (0.005 g), SDS (0.250 g), distilled water (500 mL), and NaCl (10 g). The results showed that the viscosity of the nanofluid increased as the sonication time increased, with a peak at 60 min. The stability of the nanofluid also increased, with the best stability recorded at 60 minutes after 36 hours. A sonication time of 60 minutes resulted in the lowest contact angle of 19.22°, indicating an increased wettability of the rock surface. These findings suggest that the best sonication time can improve the characteristics of MWCNT/SDS nanofluids, thereby enhancing EOR efficiency. This research is expected to make an important contribution to the development of more efficient and sustainable oil recovery technologies.*

**Keywords:** *Nanofluid, Enhanced Oil Recovery (EOR), Sonication Time, MWCNT, SDS, Wettability.*