Bayu Ariwanto, 2012. *Utilization Fiber Optic Displacement Sensor For Detecting Photoacoustic Signal In Liquid Material of Al(OH)₃*. Guidance by Drs. Pujiyanto, M.S. and Samian, S.Si., M.Si., Department Of Physics, Faculty Of Science and Technology, Airlangga University

ABSTRACT

One application is photoacoustic detection concentration of a substance. Photoacoustic signal detection requires a suitable sensor, so this experiment has the objective to reveal that the fiber optic displacement sensor can be used to detect the photoacoustic signals liquid material of Al(OH)₃. The samples used in this study is a solution of Al(OH)₃ with various concentrations. In this experiment, fiber optic displacement sensor used for detecting of the photoacoustic signal on the liquid material of Al(OH)₃. Modulated light source applied to the photoacoustic cell containing the sample solution of Al(OH)₃. Pressure changes that occur within the cell photoacoustic events is expected to be detected by fiber optic displacement sensor. The results obtained that the laser diode light source with 30 mW power, fiber optic displacement sensor can not detect the photoacoustic signal on the liquid material of Al(OH)₃ so that performed experiments using laser light source Nd: YAG. In this experiment used an ultrasonic transducer. The results obtained using the laser Nd: YAG is not a photoacoustic signal but the signal originating from the shock wave.

Key Word : Photoacoustic, Fiber Optic Displacement Sensor, Shock Wave