

## **ABSTRACT**

### **PRESSURE GAUGES DESIGN AND ANALYSIS OF WATER FLOW RATE OF MATERIAL IN WATER FLOWING RIVER SYSTEM WITH IMAGE PROCESSING METHOD**

by

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***Abstract.** It has been designed the measure of flow pressure and material system in the river analysis system used image processing method. The designing of this measurement system used to measure the flow pressure and material velocity in the river. This research used flexiforce sensor which have a function to measure the pressure of water flow. Image processing method is used to analysis the material in the water to know the sediment of material velocity. This method was done by 3 step equalization, smoothing and thresholding. Image processing application made by Delphi 7.0. The results in this research, was a pressure measurement system better to use in a range 1,31 atm to 9,16 atm and percentage of error about 5.329% pressure. For measurement of the material velocity, get an error measurement was 0.08 m/s.*

***Keywords.** Image processing, preassure, smoothing, theresholding, and velocity.*