

## **ABSTRACT**

*Thermal properties is the most important parameter which determine characteristics of material. Thermal conductivity is the main thermal properties which indicate the material's ability to conduct heat. There are some instrument that made for thermal conductivity measurement, but most of them is not made for liquids material measurement. Although several instruments for liquids material has been designed and built, yet those instruments have expensive price and complicated prototype for lab scale. In this research of Final Assesment, design of a thermal conductivity measurement system for liquids material has been built. The measurement system has been tested on range temperature 1,5 °C - 20°C with good result on accuracy (Error  $\pm 3,24\%$ ) but not precise (50,83%). Measured k value is liniear to Temperature on  $k = 0,0032T + 0,5647$*

**Keywords :** *Thermal conductivity, Thermal properties, Heat Transfer, Measurement system*