ABSTRACT

A polarimeter is a tool used to measure the angle of optical rotation by materials with active optical properties, where when the material is influenced it can rotate the angle of polarization of light and have an impact on changes in its intensity. Temperature is a very important quantity in measurement, control, control and processing in the industrial world. Temperature measurement has now developed using sensors. Temperature sensors are now widely used for temperature monitoring, controlling temperature and measuring temperature. Temperature sensors have been widely applied in various conditions, one of which is now applied to polarimeters. In this study, a sample temperature measuring device for a polarimeter has been made, where the sample is heated first and then the temperature change is measured, and its impact on its intensity and on the analyzer angle of 0º, 10º, 20º, 30º, 40º, 50º. The realized sample temperature measuring device consists of a DS18B20 temperature sensor as a temperature measuring sensor, Arduino UNO as a data processor, and a computer screen serial monitor as a data display. The results obtained from this study prove the effect of changes in sample temperature on changes in light intensity passing through the material.

Keywords *: Polarimeter, light intensity, analyzer angle, temperature, DS18B20 sensor*