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Newton's Law of Cooling Experiment Set using Temperature Sensor Arduino

Abstract. The research aims to develop the experimental set of the temperature measurement in liquid by Arduino program. The experimental set is composed of 1) 2 liquid temperature sensors (DS18B20 model), 2) Arduino program, and 3) LED screen for showing the temperature value in unit of ℃. The experimental set developed by the researcher is measurable the liquid temperature from -55 ℃ to 125 ℃. The effective of the temperature sensor 1 and temperature sensor 2 is 1.57% and 1.51% errors respectively compared with temperature sensor of the experimental set compared with B Smart Sayence Co., Ltd. Company. Moreover, the experimental set can display the data on Smartphone via Blynk Application. The research is applied to the laboratory class on Newton's law of cooling for finding Liquid cooling rate.

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