

Modeling the response of a thermistor*

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A thermistor is a semiconductor used to measure temperature. Its resistance depends on the temperature. The goal of the present experiment is to determine the resistance R as a function of temperature T . You are expected to come up with a mathematical model that can predict the temperature from the measured resistance. A beaker fitted with a calibrated thermometer (a thermocouple), a stirrer and hotplate is provided.

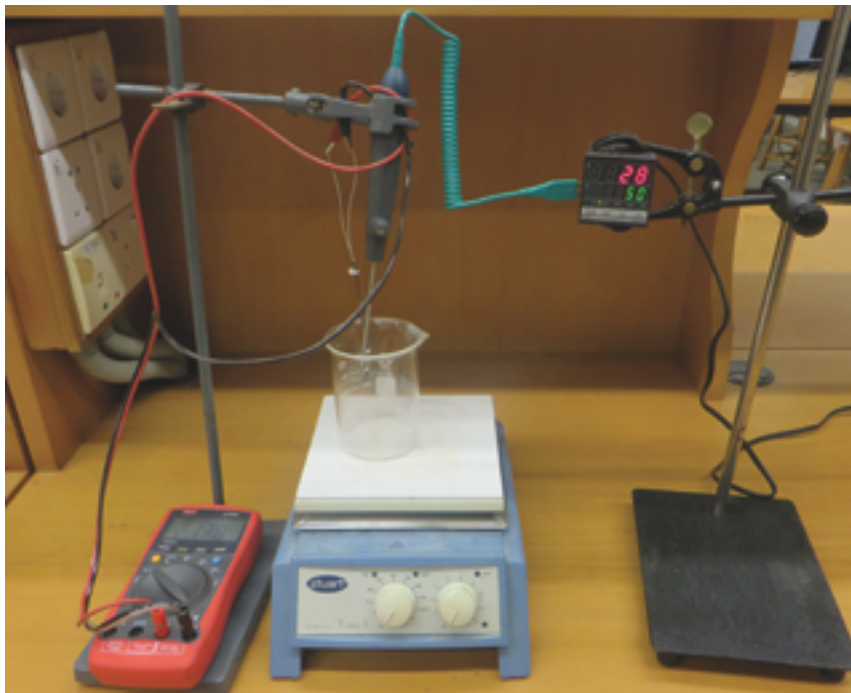


Figure 1: Modeling a thermistor's response.

You will receive credit for determining the function $R(T)$. Use a curve fitting software (e.g. Matlab) and choose an appropriate fitting function. In the industrial setting, thermistors are usually modeled using the Steinhart relationship. A typical calibration file is uploaded for your curiosity.

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