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Design and construction of a temperature monitoring system for a noodles dryer at a local industry

B.H.B.M. De Silva*, W.G.D. Dharmaratna, K.K.A.S. Yapa and J.A.P. Bodhika

Department of Physics, Faculty of science, University of Ruhuna, Matara, Sri Lanka

The drying process of noodles made at a local industry in Matara, was studied with the aim of making improvements to the machine used and the process followed. Frequent oven opening to check the quality and consistency of the drying product is an unnecessary intervention which leads to waste of electric power. A comprehensive study of the noodles drying process was undertaken to search for possible methods to increase the efficiency of the production. It was found that a systematic monitoring of temperature during the drying process and a measurement of time taken for the completion of the process were required to make some improvements. Thus, a digital electronic temperature monitoring system with an adjustable timer was developed to increase the efficiency of the drying process. The designed equipment included a keypad, a LM 35 temperature sensor and a PIC16F877A microcontroller. The temperature sensed is converted to an analog electrical signal and sent to the microcontroller. The analog signal is converted to a digital signal and transmitted to the SSD (Seven Segment Display) unit. The time left for the completion of the drying process and the temperature inside the oven at any moment are displayed on SSD. When the time exceeded a preset value, a buzzer was activated automatically to draw the attention of the workers to remove the dried product. An attractive display system was accomplished at a minimal cost.

Key words: Temperature sensor, Microcontroller, SSD

* biyunidesilva@gmail.com