DESIGN AND TESTING OF A MICROCONTROLLER-BASED LARGE-SCALE OVEN TOASTER

Undergraduate Design Project
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ABSTRACT

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The study aimed to design and test an automated large-scale oven toaster. The toaster was composed of three major components: the microcontroller, the burner regulator, and the oven toaster unit. The microcontroller unit was the electronic and computer part of the system. It was a temperature-sensing device that logically operates the system within the preset cooking time and temperature. The burner regulator unit was the motored regulating part that accepts the instructions from the microcontroller. It regulates the amount of gas to control the burner's flame. A software was developed using assembly language to manage the microcontroller in performing the operation of the automated oven toaster.

The automated oven toaster was evaluated and the following information were gathered: average heating time of 6.99 minutes which was within the range of 6 to 9 minutes heating time of commercial ovens and an average of 0.568 Kg/Hr LPG consumption which was also within the 0.4 to 0.8 Kg/Hr gas consumption range of commercial ovens used today.

Based on the results, the performance of the machine was comparable with that of other existing oven toasters used today. The best advantage of the system was that it has minimized the human intervention and eased the bread cooking operation.

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