



**FINAL YEAR PROJECT REPORT**

**Digital PID Temperature Controller- An Implementation  
On FPGA**

**By**

|                       |              |                         |
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**2010-2011**

## **Acknowledgments**

First and foremost, we would like to thank Almighty Allah for His grace that we completed our project “Digital PID temperature controller- an implementation in FPGA”.

We are also thankful to our supervisor Mr. Salman Zafar for his inspiration and continuous support. He is always willing to listen, support, and give insightful comments. Our project would not have been possible without his support and guidance.

We are thankful to our friends for their cooperation and support during the time of studies. We are also thankful to our parents for their love and patience.



## Abstract

Our project is all about the design, the synthesis, and the implementation of digital PID temperature controller in Xilinx FPGA (Field Programmable Gate Array) Spartan 3. We have used Verilog language to design PID controller.

PID temperature controller has been widely used in many applications like industries of packaging, food processing, and plastic making industry. In our project, we have designed PID controller to control temperature of water tank.

In many industrial applications, FPGA based PID controller is more useful over the other controller systems like microcontroller etc. Power, compactness, and flexibility of FPGA based PID controller can be useful in controlling. FPGA lets the implementation of parallel processing. We have implemented Verilog model of PID controller implemented on Spartan 3 FPGA. It consumed 548 numbers of slices, 975 numbers of LUTs and 29 numbers of bonded IOBs.



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