

Design of a temperature controller for an electric resistance furnace using PID and fuzzy PID.

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Abstract: This topic focuses on the design and implementation of an intelligent temperature control system for resistance furnaces by combining PID and fuzzy PID control algorithms. This is a necessary issue in practical production to improve the efficiency and stability of the heating process. The objective of the research is to develop an automation solution to optimize the temperature in the resistance furnace while ensuring safety and energy savings. The applied method combines theory with experimentation to build and test the PID and fuzzy PID algorithms. The expected result is to provide an effective control system, contributing to the development of electronic technology in the manufacturing industry.

Keywords: temperature control, PID, fuzzy PID, electric resistance furnace, automation