

Design of supervisory control for electric resistance furnace thermal process via Ethernet network

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Abstract: This topic aims to research and design an automatic control and monitoring system for resistance furnaces by leveraging communication technology over Ethernet networks. The context of the topic is driven by the need to improve energy efficiency and accuracy in the heat treatment process of metal materials. The objective of the research is to develop a comprehensive solution combining automatic control theory with experimentation, in order to provide real-time monitoring capabilities of furnace temperature information. Thereby, the system helps optimize the production process and ensure output quality. The expected outcome of the topic is a sophisticated control system that enhances performance and reduces power consumption, bringing significant value to industrial applications.

Keywords: Automatic control, Ethernet, Resistance furnace, Temperature monitoring, Energy saving