

Developing a Simulation Model for the Re-Design of a Reconfigurable Factory Testbed at Morgan State University

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Abstract

The primary focus of this work is to complete a simulation model in the re-design, analysis, and installation of selected hardware and software for a Reconfigurable Factory Testbed (RFT). This paper discusses a simulation model developed to assess the existing factory layout and determine equipment requirements for a future system that meet the needs of a production scenario and the construction of a web-enabled laboratory for testing new automation for manufacturing applications.



A Neural Network Analysis of Wire-EDM Cutting Parameters and Thermal Effect on Workpiece Surface Layers in Manufacturing

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Abstract

This project involved an investigation and study of the complex relationship of Wire-EDM machining parameters (machine cutting speed, discharge voltage and pulse-On time) and the size of the thermally affected surface layers on a machined workpiece, low carbon steel, AISI4340. A neural network approach was used to compare the results of the statistical analysis with the objective to further improve the prediction of optimum machining parameters.