

***Abstract: Advanced Semiconductor Manufacturing Cycle Time
Forecasting with a Fuzzy Collaborative Sensor Network***

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Abstract

Network based sensing has become an important field of research, and new applications of remote sensing are expected to appear. In order to effectively predict the job cycle time in a semiconductor manufacturing factory, a fuzzy collaborative sensor network including 350 sensors is developed in this study. In the fuzzy collaborative sensor network, each sensor monitors the factory conditions, and uses an artificial neural network to aggregate the received information. Each sensor conveys its view and monitoring results to other sensors with the aid of the central control unit. According to experimental results, the aggregate forecasting performance was considerably improved through the sensors' collaboration.

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