

A SIMULATION STUDY OF REWORK STRATEGIES AND DISPATCHING RULES IN SEMICONDUCTOR FABRICATION. *G. Laubisch and Dr. M. Kuhl**,
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The semiconductor industry is a fast paced, cutting edge industry where products have short life spans. In order to stay competitive, manufacturers must be able to quickly adapt to produce new products and to adopt new machinery into their fabrication plant (fab). Consequently, in order for fabs to be competitive they must achieve a high level of productivity. Two major issues that effect productivity are machine scheduling policies (dispatching rules) and the handling of rework. Rework is common in semiconductor manufacturing because of the tight specifications required by the products and processes. Although prior research has been conducted on these two issues independently, the hypothesis of this study is that the interrelationship between the dispatching rule and rework strategy implemented in the fab has a significant effect on productivity. Simulation models have been constructed using real fab data to test this hypothesis. The experimental design contains four factors including dispatching rules, rework strategies, rework level, and fab type. These factors are compared using various performance measures of fab productivity. We will present a brief overview of semiconductor manufacturing, and focus on the methodology and results of the experiment.