

Simulation and Scheduling Implementation Study of TFT-LCD Cell Plants
Using Drum-Buffer-Rope System

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Abstract

The thin film transistor liquid crystal display (TFT-LCD) manufacturing process consists of three basic process stages: array process, Cell process and Module process. Little previous research works are found on the problem of scheduling and control TFT-LCD Cell plant due to its specific domain. In this article, we are concerned with the scheduling and control of Cell plants by using Drum - Buffer - Rope (DBR) System based on theory of constraints (TOC). Although the DBR system have been successfully implemented in some manufacturing plants, the detailed design rule or applications must be customized based on the special characteristics and requirement of different manufacturing environments. A DBR customized model for TFT-LCD Cell process is proposed in this article due to its specific domain. A detailed exploration of the required customization of Drum design algorithm in this method is presented. A real-life Cell plant case is utilized to explain the significance and feasibility of the proposed method.

Keyword : TFT-LCD Cell process, Drum - Buffer - Rope, Theory of constraints