Abstract

Tamer Ahmed Aly A Ismail

A Heuristic Algorithm for Hoist Scheduling in Electroplating lines

Hoist scheduling has been considered a very important factor in improving the productivity of production lines which uses a transporter for handling jobs between successive processing stations. In this paper a heuristic algorithm for scheduling of hoist moves in a no-wait system is developed, where the processing time of the jobs in the processing stations is prescribed between a lower and upper bound known as time window. The system can process multiple job types in which each type differs in its processing sequence as well as the immersion time in the different processing stages. The considered system may contain multi tank processing stages where a number of duplicate tanks can perform the same process, as well as multi function tanks where a single tank can be visited by a job more than once. The algorithm is developed and tested on three bench mark problems of a single product type, and one problem with two product types. The results showed that the proposed algorithm gives comparable results with those obtained by exact mathematical methods.