

The Application of Tabu Search in FMS Scheduling

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ABSTRACT

In this research, Tabu Search heuristic algorithm is presented to deal with the Flexible Manufacturing System (FMS) scheduling problems with the due date constraints in anticipation to minimum the mean tardiness of the system. The approach is studied in three phases. First, for the mean tardiness criterion, a job-oriented heuristic (JOH) is constructed to solve the addressed FMS scheduling problem. Then an experiment is designed to check the best combination of tabu list size and ending iteration number. Finally, the Tabu Search with long-term memory construction is developed to improve the performance quality. The performance of the designed algorithm will be compared with the Tabu Search heuristic using short-term memory construction. Through the statistical analysis to show the superiority of the constructed heuristic.

Keywords : 排程 ; 啟發式演算法 ; 最小平均延遲 ; 動態記憶體架構 ; 禁忌搜尋法 ; 彈性製造系統

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