考量整備及拆卸時間之開放型工廠排程問題啟發式求解模式建構

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ABSTRACT

In the past few years, when deal with the open shop scheduling problem, most research has focused their performance measures on minimizing makespan or machine idle time. However, form the customers ’ viewpoint, in the practical, due date satisfactions is the most important performance measure. Thus, in this research, we look the setup, processing, and removal time as separated, then take the sequence-independent setup and dependent removal times into account when deal with an open shop scheduling problem with the objective to minimize the total job tardiness. A tabu search based heuristic is proposed to solve the problem in an acceptable running time. The heuristic begins on a designed schedule generator to obtain an initial solution; then tabu search mechanism is applied for the further solution improving. In order to prove the accuracy and superiority of the proposed tabu search heuristic, we make the performance comparisons with mathematical programming model and some existing heuristics such as double genetic algorithm, ant colony optimization, simulated annealing in various different manufacturing environments. The Computational results show that the proposed TS heuristics performs well than the others.

Keywords : 生產排程 ; 開放型工廠 ; 總延遲時間 ; 獨立整備時間 ; 相依整備時間 ; 禁忌搜尋法

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