不等候條件考量下具非等效平行機台之流程型排程問題研究

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摘 要

本研究針對多階段平行機台流程式工廠的排程問題，考量不等候(no wait)條件、非等效平行機台(unrelated parallel machine)、可分割整備時間(separable setup time)及相依拆卸時間(dependent removal time)等因素。並以總完工時間與總延遲時間最小化為目標，發展出粒子群最佳化演算法(PSO)與混合型基因演算法(HGA)兩種啟發式演算法。 在影響演算法執行結果之參數分析上，利用田口實驗求出最佳參數組合，來增進啟發式演算法之求解品質及效率，並比較兩啟發式演算法之成效。研究發現問題規模較小時，粒子群最佳化演算法的求解品質表現較好，當問題規模變大，則為混合型基因演算法的求解品質表現較佳，在求解時間上，卻較粒子群最佳化演算法緩慢。

關鍵詞 : 不等候條件 ; 非等效平行機 ; 獨立整備時間 ; 相依拆卸時間 ; 多階段平行機台 ; 多目標排程 ; 混合型基因演算法 ; 粒子群最佳化演算法

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