應用禁忌搜尋法求解單元形成之排程規劃

蔡達彥、駱景堯

E-mail: 9510781@mail.dyu.edu.tw

摘 要

單元製造系統為群組技術(Group Technology)之應用，其可簡化生產流程、降低整備時間、減少物料處理等，達到降低成本之目的。而單元形成問題為單元製造系統中最重要的一環，過去有許多學者對其加以探討，由於它具有NP-Complete特性，因此對於大型問題，欲在合理時間內求得最佳解相當困難。 零工式排程問題(Job-Shop Scheduling Problem，JSP)是最複雜的排程問題之一，該問題具有NP-Complete之特性，過去四十年來它一直是學術界與產業界急欲解決的重要問題。 由上述可知，單元形成問題與零工式排程問題，都是學術界與產業界急欲解決的重要問題，故本研究將兩問題整合在一起，本研究將在第一階段探討單元形成問題，第二階段將針對第一階段所得之分派結果，進行JSP問題的探討，以最大總完工時間最小化為目標，並發展出一禁忌搜尋演算法(Tabu Search Algorithm，TSA)來求解該問題，盼能提供學術界與實務界在此方面研究之參考 本研究以文獻中之例題測試，演算法參數使用SAS統計軟體分析決定。研究結果顯示，本研究所提出之演算法有不錯之表現。

關鍵詞 : 群組技術 ; 單元形成 ; 零工式生產系統 ; 禁忌搜尋法

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