Optimized Production Technology: A Study of Lot-Streaming in Job-Shop Production System

黃明智、駱景堯

E-mail: 8701205@mail.dyu.edu.tw

ABSTRACT

For the last two decades, optimized production techology(OPT) has beenbecome an important tool for production planning and scheduling. Lot-streaming is the most important idea of OPT. The purpose of lot-streaming is to split aprocess batch into several transfer batches, therefore different manufacturing processes of the product can be run simultaneously so that the makespan of productcan be shortened. Although the concept of lot-streaming philosophy has been widely used in practice and has shown favorable ressults, up to present, most related literatures did not focus their discussion topics particularly on the quantitativeanalysis of lot-streaming. In this research, first, we make a general description on the development ofOPT. Second, a mathematical model for solving the job shop scheduling problemsis constructed by disjunctive graph representation concept. Finally, the experimentalanalysis is presented to show the advantage of the lot splitting in the job shop environment.

Keywords : 最佳化生產技術 ; 零工式 ; 轉運批 ; 處理批 ; 批量流

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