

CRITICAL REVIEW ON SCHEDULING IN FLEXIBLE MANUFACTURING SYSTEM: A RESEARCH PERSPECTIVE

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Abstract

One of the methods to increase competitiveness in manufacturing is by converting existing manufacturing systems to flexible manufacturing systems (FMS) and implementing proper scheduling system. Scheduling in an FMS environment is more complex and difficult than in a conventional manufacturing environment. To achieve high performance for an FMS, a good scheduling system should make a right decision at a right time according to system conditions. Since the late 1970s when the first collection of papers on scheduling of FMS has been published, it has been one of the most popular topics for researchers. The objective of this paper is to critically review scheduling study on FMS and analyze future trend that employed advanced techniques as the analyzing tool. Some published articles provide frameworks to clarify different approaches and models to describe scheduling problems in FMS. This paper provides a survey of different approaches and models proposed in the literature to tackle the FMS scheduling problems during the last two decades. At the same time, it provides the basis for the evaluation of the areas for future research directions.

Keywords: Flexible Manufacturing Systems (FMS), Scheduling, job shop