

## عنوان مقاله:

Designing An Intra-Cell Layout Model in Dynamic Cellular Manufacturing Systems with Unequal-Area Facilities

## محل انتشار:

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## خلاصه مقاله:

This paper presents a novel mixed-integer nonlinear programming model for the intra-cell layout (ICL) design of a dynamic cellular manufacturing system (DCMS). A novel aspect of this model is concurrently making the cell formation (CF) and ICL decisions in a dynamic environment. The proposed model incorporates several design features including alternative process routings, operation sequence, processing time, production volume of parts, duplicate machines, machine capacity, ICL, multirows layout of unequal-area facilities, continuous-area cells with rectangle regular shapes and machine relocation. Since the problem is NP-hard, an efficient simulated annealing (SA) algorithm is developed to solve the proposed model. It is then tested using 10 test problems with different sizes and settings to verify the performance of the proposed model and the computational efficiency of the developed algorithm in compare to classical genetic algorithm (GA) and Lingo software.

## کلمات کلیدی:

Dynamic cellular manufacturing systems; Intra-cell layout; Simulated annealing; Unequal-area facilities

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/172840>

