

عنوان مقاله:

Developing a hybrid Metaheuristic Approach for Energy-Aware Flexible Job Shop Scheduling Problem

محل انتشار:

هجدهمین کنفرانس بین المللی مهندسی صنایع (سال: 1400)

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خلاصه مقاله:

Nowadays, energy consumption is a very important issue for the societies in terms of both environment and economy. The U.S. Energy Information Administration's (EIA) International Energy Outlook (IEO) presents an analysis of long-term world energy markets in sixteen regions through ۲۰۵۰. According to this report, global energy consumption is estimated to grow by nearly ۵۰% between ۲۰۱۸ and ۲۰۵۰. Following the increase of energy consumption, increasing the energy costs occurs which could be regarded as one of the important factors related to the production costs. This issue encourages production managers to tackle these problems in different situations. So the first important step in this trend seems to be reducing the energy consumption costs in production systems. In this Paper, the hybrid Imperialist Competitive algorithm (ICA) with Simulated Annealing algorithm (SA) are developed for classical Flexible Job Shop Scheduling Problem (FJSP) and then by considering reactive power, an Energy-Aware FJSP model is proposed. Finally total energy consumption is calculated. In order To assess the performance of mentioned algorithm, at firs stage the results of solving the classical FJSP by hybrid algorithms are compared with the literature and then the proposed model is presented.

کلمات کلیدی:

Flexible manufacturing system, Energy-Aware, Hybrid algorithm, ICA

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