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Optimum Dispatching Rule in Solar Ingot-Wafer Manufacturing System

Authors : Wheyming Song, Hung-Hsiang Lin, Scott Lian

Abstract : In this research, we investigate the optimal dispatching rule for machines and manpower allocation in the solar ingot-wafer systems. The performance of the method is measured by the sales profit for each dollar paid to the operators in a one week at steady-state. The decision variables are identification-number of machines and operators when each job is required to be served in each process. We propose a rule which is a function of operator's ability, corresponding salary, and standing location while in the factory. The rule is named 'Multi-nominal distribution dispatch rule'. The proposed rule performs better than many traditional rules including generic algorithm and particle swarm optimization. Simulation results show that the proposed Multi-nominal distribution dispatch rule improvement on the sales profit dramatically.

Keywords : dispatching, solar ingot, simulation, flexsim
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