

Two-Stage Flowshop Scheduling with Unsystematic Breakdowns

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Abstract : The two-stage flowshop assembly scheduling problem is considered in this paper. There are more than one parallel machines at stage one and an assembly machine at stage two. The jobs will be processed into the flowshop based on Johnson rule and two extensions of Johnson rule. A simulation model of the two-stage flowshop is constructed where both machines at stage one are subject to random failures. Three simulation experiments will be conducted to test the effect of the three job ranking rules on the makespan. Johnson Largest heuristic outperformed both Johnson rule and Johnson Smallest heuristic for two performed experiments for all scenarios where each experiments having five scenarios.

Keywords : flowshop scheduling, random failures, johnson rule, simulation

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