

Solving Flowshop Scheduling Problems with Ant Colony Optimization Heuristic

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Abstract : This study deals with the application of Ant Colony Optimization (ACO) approach to solve no-wait flowshop scheduling problem (NW-FSSP). ACO algorithm so developed has been coded on Matlab computer application. The paper covers detailed steps to apply ACO and focuses on judging the strength of ACO in relation to other solution techniques previously applied to solve no-wait flowshop problem. The general purpose approach was able to find reasonably accurate solutions for almost all the problems under consideration and was able to handle a fairly large spectrum of problems with far reduced CPU effort. Careful scrutiny of the results reveals that the algorithm presented results better than other approaches like Genetic algorithm and Tabu Search heuristics etc; earlier applied to solve NW-FSSP data sets.

Keywords : no-wait, flowshop, scheduling, ant colony optimization (ACO), makespan

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