Solving Weighted Number of Operation Plus Processing Time Due-Date Assignment, Weighted Scheduling and Process Planning Integration Problem Using Genetic and Simulated Annealing Search Methods

Authors : Halil Ibrahim Demir, Caner Erden, Mumtaz Ipek, Ozer Uygun

Abstract : Traditionally, the three important manufacturing functions, which are process planning, scheduling and due-date assignment, are performed separately and sequentially. For couple of decades, hundreds of studies are done on integrated process planning and scheduling problems and numerous researches are performed on scheduling with due date assignment problem, but unfortunately the integration of these three important functions are not adequately addressed. Here, the integration of these three important functions is studied by using genetic, random-genetic hybrid, simulated annealing, random-simulated annealing hybrid and random search techniques. As well, the importance of the integration of these three functions and the power of meta-heuristics and of hybrid heuristics are studied.

Keywords : process planning, weighted scheduling, weighted due-date assignment, genetic search, simulated annealing, hybrid meta-heuristics

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