

A Binary Particle Swarm Optimization Approach to Optimize assembly sequence planning

Abstract

This paper presents an approach of applying Binary Particle Swarm Optimization (BPSO) algorithm to an assembly sequence-planning (ASP) problem. Permutation encoding of sequences is used to represent particles, then those particles are strictly subjected to a precedence constraint matrix at which only the feasible sequences will be iterated in the process. An archive is used in storing the feasible sequences and a swap mechanism is used to identify the feasible sequences for iteration. As the nature of assembly sequence planning is a discrete type of problem Binary PSO technique is used.