Abstract

This paper studies the problem of scheduling Job shops in robotic cells with no intermediate buffers, called No Wait Blocking Transport Job Shop Scheduling Problem (NWBT JSSP). This problem is an extension of the classical job shop problem. No Wait Blocking Transport job shop problems arise in many realistic production environments. To tackle this problem, we developed a Mixed Integer Linear Program and proposed a constructive heuristic based on priority rules. The MILP model has been used to solve optimally problems with as many as ten jobs, ten machines and three robots. Computational results on hypothetically generated test problems are discussed and suggestions of future research projects are proposed.

References

2. N.G. Hall, C. Sriskandarajah, A survey of machine scheduling problems with blocking and
Mixed Integer Linear Programs for Blocking and No Wait Job Shop Scheduling Problems in Robotic cells


Mixed Integer Linear Programs for Blocking and No Wait Job Shop Scheduling Problems in Robotic cells


Index Terms

Computer Science

Applied Sciences
Keywords

Job Shop Scheduling problem, Transport Constraint, Blocking Constraint, No Wait Constraint, Mixed Integer Linear Program