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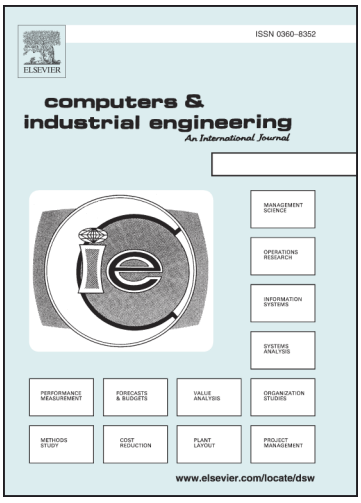

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Cyclic jobshop hoist scheduling with multi-capacity reentrant tanks and time-window constraints

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Cyclic jobshop hoist scheduling with multi-capacity reentrant tanks and time-window constraints

Abstract. This paper studies the cyclic jobshop hoist scheduling with multi-capacity reentrant tanks and time-window constraints. Parts of different types are processed in a series of tanks with bounded processing times. Multi-capacity tanks are used to handle stages with long processing times. Tanks can be reentrant so that a part visits them more than once. A hoist is responsible for the transportation of parts between tanks. We consider the cyclic scheduling where multiple parts enter and leave the production line during a cycle. The difficulty to deal with the problem lies in how to effectively handle the constraints related to multi-capacity reentrant tanks and their relations with time windows. To this end, a mixed-integer linear programming model is developed by addressing the time-window constraints and tank capacity constraints in a novel way. Computational experiments are conducted to demonstrate the effectiveness of the

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