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International Journal of Production Economics

Special Issue

on

Meta-Heuristics for Manufacturing Scheduling and Logistics Problems

Special Issue Guest Editors

Ching-Jong Liao

Department of Industrial Management

National Taiwan University of Science and Technology

Taipei, Taiwan

Mitsuo Gen

Fuzzy Logic Systems Institute

Fukuoka 820-0067, Japan

Hanyang University, Korea

Manoj Kumar Tiwari

Department of Industrial Engineering and Management

Indian Institute of Technology

Kharagpur - 721302, India

Pei-Chann Chang

Department of Information Management

Yuan Ze University

Chung-Li, Taiwan

Introduction

Nowadays, customer demand for order variety, short-lead time, and fast delivery has created a great impact on manufacturing problems such as production scheduling, job sequencing, vehicle routing, bin-packing, and loading. The related problems of manufacturing scheduling and logistics support are even more crucial than ever. Traditional approaches are incapable

of dealing with the challenges of such intractable problems. There is a need for the development of new solution methods to address these challenging issues. Meta-heuristics based on ant colony optimization, evolutionary algorithms, particle swarms etc. provide a new problem-solving paradigm for academic researchers and industrial practitioners.

Manufacturing scheduling and logistics problems are practical decision-making problems in organizations and factories. Scheduling and transportation logistics problems are notoriously difficult problems in the domains of production economics, operations research, optimization, and computer science. Due to their theoretical challenges and practical values, scheduling and logistics problems have attracted a considerable amount of research attention in the literature. However, traditional approaches can only solve small-scale scheduling or logistics problems optimally as the computational efforts to solve large-sized problems are beyond the capability of contemporary computational resources. This limitation has prompted researchers and practitioners to develop problem-specific heuristics or use meta-heuristics to solve such problems quickly with reasonable solution quality.

This special issue of the *International Journal of Production Economics (IJPE)* is devoted to publishing new and significant results on developing new approaches that combine meta-heuristics with other problem-solving paradigms to yield highly effective solution methods for manufacturing scheduling and logistics problems. In view of the recent advances and breakthroughs in Computational Intelligence, various techniques such as Neural Networks, Fuzzy Theory, and Evolutionary Algorithms can be deployed to develop more reliable and accurate solution approaches. New tools, techniques, or models that can be applied to cope with manufacturing scheduling and logistics problems are all welcomed. Potential topics include, but are not limited to, the following:

- Application of ant colony optimization, evolutionary algorithms, and related meta-heuristics (e.g., particle swarm, artificial immune system, DNA approach, bee system etc.) to deal with manufacturing scheduling and logistics problems
- Design and development of conventional optimization based heuristics
- Design and development of new meta-heuristics or bio-inspired algorithms
- Solving practical problems using heuristics, meta-heuristics, or hyper-heuristics
- Methods for dealing with stochastic, dynamic, and multi-objective problems

- Comparisons with other meta-heuristics (tabu search, local search based methods etc.)
- Hybrid methods and hyper-heuristics

Manuscript Preparation and Submission

To prepare their manuscripts, authors are asked to closely follow the “Instructions to Authors” that is presented at the back of any recent issue of the *IJPE*. Authors should submit their papers via the EES <http://www.ees.elsevier.com/ijpe/> and select “Special Issue: [Meta-heuristics for Manufacturing Scheduling and Logistics Problems](#)” when asked to indicate the “Article Type” in the submission process. Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Manuscripts will be refereed according to the standards of *IJPE*.

Publication Schedule

INFORMATION	DEADLINE
Manuscript submission	15 October 2011
Reviewer reports	1 February 2012
Revised paper submission	30 April 2012
Final manuscript submissions to publisher	15 July 2012

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<p>Ching-Jong Liao <i>PhD</i> Professor Department of Industrial Management National Taiwan University of Science and Technology, Taipei, Taiwan Tel: +886-2-27303277 E-mail: yklin@mail.ntust.edu.tw</p>	<p>Manoj Kumar Tiwari <i>PhD</i> Department of Industrial Engineering and Management Indian Institute of Technology, Kharagpur - 721302, INDIA Tel: +91-3222-283746 E-mail: mkt09@hotmail.com</p>
<p>Mitsuo Gen <i>PhD</i> Professor Fuzzy Logic Systems Institute Fukuoka 820-0067, Japan Tel: +81-948-24-2771 Dept. of Industrial & Management Eng. Hanyang University, Korea E-mail: mitsuoGen@gmail.com</p>	<p>Pei-Chann Chang <i>PhD</i> Professor Department of Information Management Yuan Ze University Chung-Li, Taiwan Tel: +886-3-4638909 E-mail: iepchang@saturn.yzu.edu.tw</p>