Call for Paper

**Special Issue:** Green Manufacturing Supply-Chain Design and Operations Decision-Support

1. Introduction
This special issue of *International Journal of Production Research* addresses a symbiosis between green issues of manufacturing supply-chain (SC) design and operations and decision-support tools in order to robustly conflate these two islands of production. Although these two islands of research are colligated, reported evidences on the development and demonstration of decision-support tools, in a more integrated and holistic manner, in green manufacturing supply-chain design and operations are scant. A large number of articles on green and sustainable supply-chain are available. Literature on the assessment of sustainable production techniques is also rich. However, development and real-world applications of high performance, easy to deploy and flexible decision-support techniques in sustainable manufacturing supply-chain design and operations are seldom noticed.

2. Scope, Relevance and Significance of the Theme
The next generation manufacturing firms are producing products using sustainable manufacturing techniques. These firms are “sensitive to sustainability-related metrics, standards and infrastructures”. There are articles integrating sustainability in strategic decision-support systems for new product development. However, robust decision-support tools that combat the green issues in manufacturing supply-chain are still inadequate. Today’s global manufacturing supply chain issues are broadly related to design, operational, economic, environmental and societal aspects. The design, operational and economic aspects of supply-chain, if coerced with the environmental and societal aspects long term sustainability could be achieved. Theoretically and empirically it is an established fact that such “green initiatives can lower not only the environmental impact of a business but also raise efficiency, possibly creating major competitive advantages in innovation and operations”. Further, it has been reported that “Green Supply Chain Management (GSCM) is an increasingly widely-diffused practice” among some manufacturing firms. The determinants and effects of GSCM on environmental and business performance have also been reported in literature. While theoretical and empirical research in ‘green initiatives’ within supply-chain is abundant
robust decision-support tools in sustainable manufacturing supply-chain design and operations are scant.

3. Special Issue Themes
This special issue aims to publish original manuscripts from practitioners and researchers that respond to the following three generic questions of sustainability and decision-support:

a) How does the data backbone of the decision-support tools and their applications help in bringing sustainability in the elements of the manufacturing supply-chain design and operations?

b) What are the effects on costs and performance of sustainable manufacturing supply-chains while applying the decision-support tools?

c) How are the sustainable manufacturing supply-chain operations coordinated by the use of decision-support tools in order to achieve a cost-effective and high performance network?

The terminology “decision-support” used in this Call for Paper refers to a high-level support for green manufacturing supply-chain design and operations.

4. Features of the Special Issue Manuscripts
This special issue seeks manuscripts on green manufacturing supply-chain building on real-world applications such as company case studies forming the data backbone of decision support tools.

The novel and high quality papers investigating the designs and operations of green manufacturing supply-chains using decision-support tools should include, but not be limited to, the following features:

i) Comprehensive state-of-the-art reviews and surveys that present an integrative view of the reported contributions on decision-support applications on the green manufacturing supply-chain design and operations. This kind of manuscripts should essentially identify the potential research directions;

ii) Identification and solution of sustainability issues of the manufacturing supply-chain design and operations problems using the decision-support tools that provides integrative viewpoints on emerging trends in industry;

iii) Data collection procedures from all the elements of supply-chain processes, data formatting and collating, database creation that facilitates designing robust decision-support tools for sustainable supply-chain design and operations;

iv) Development of appropriate solution methodologies using decision-support and benchmarking the tools for solving green issues of manufacturing supply-chain design and operations;
v) Description and evaluation of individually developed novel and original software packages in order to solve decision-support problems with regard to the green issues for manufacturing supply-chain design and operations.

5. Areas of Manuscripts
Papers should present novel and original research outputs that have not been published or considered for publication. Manuscripts with real-world novel applications of decision-support tools in green manufacturing supply-chain design and operations are welcome from practitioners and researchers. The broad areas includes, at least (but not limited to), the following research themes:

- **Green Operations of Manufacturing SC Decision-Support**
  - Sustainability measurement processes by trading-off criteria within the SC metrics using decision-support tools;
  - Green lean manufacturing supply-chain and its decision-support tools;
  - Decision-support for appropriate green manufacturing SC selection;
  - Manufacturing supplier selection methods and applications in green SC design;
  - Location routing methods and applications in green manufacturing SC;
  - Dynamic decision-support tools for the compliance of the green issues of manufacturing SC.

- **Low Carbon, Green and Clean Manufacturing SC Design & Operations**
  - Low-carbon manufacturing SC design and operations;
  - Green and clean SC design decisions in manufacturing sector;
  - Clean manufacturing SC process management decision-support;
  - Clean manufacturing SC vulnerability decision-support;
  - Expert systems for clean manufacturing SC networks to alert vulnerability issues in manufacturing processes;
  - Intelligence issues in the manufacturing SC networks from low carbon, green and clean aspects;
  - Sustainable / clean SC design with self-adaptive decision-support capability for product life cycle.

- **Reverse Manufacturing Supply-Chain**
  - Decision-support in product reconditioning under reverse manufacturing supply-chains;
  - Decision-support for the green metrics in reverse manufacturing supply-chains.

- **Performance Measurement**
  - Novel decision-support tools and their validations in green / sustainable / clean manufacturing SC performance measurement;
- Intelligent decision-support applications in green / sustainable / clean manufacturing SC performance measurement.

- **Economics and Cost Engineering**
  - Cost engineering decision-support in the green / sustainable / clean manufacturing supply-chain;
  - Economic decision-support for the green issues of manufacturing supply-chain.

- **Case studies from industries**
  - Real-world case studies on the application of decision-support tools in green manufacturing SC design and operations.

- **Decision-Support Softwares and Manufacturing SC**
  - Analysis and efficacy of indigenously developed software tools for decision-supports in the field of study.

### 6. Time Scale (tentative)

- **Full manuscript submission:** 1 November 2013
- **Notification of review reports:** 31 January 2014
- **Revised final manuscript due date:** 30 April 2014
- **Final Manuscript Submission to Publisher:** 30 July 2014
- **Online publication of the Special Issue:** August/September 2014

### 7. Manuscript Preparation

Each manuscript will be refereed for publication by at least 2 reviewers. The length of the submitted article should be within **8,000 words** including tables, references and appendices. Authors should conform to the instructions given in the “Guide for Authors” for “International Journal of Production Research” while preparing their manuscripts and should submit their full papers electronically, **latest by 1 November 2013** through IJPR’s manuscript submission site: [http://mc.manuscriptcentral.com/tprs](http://mc.manuscriptcentral.com/tprs)


Submissions should contain a separate title page with author details. Authors’ details should not be included in the manuscript. All papers will go through the normal review process (double blind review) conforming to the guidelines of International Journal of Production Research.
Potential authors may confer with the “Editor-in-Chief” of *International Journal of Production Research*:

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**References**


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