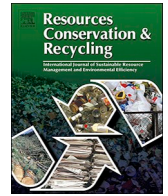




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Remanufacturing: Opportunities and Challenges for a Sustainable Consumption

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Environmental concerns have prompted companies around the world to seriously think about the sustainability of their products and business processes and operations. The challenge for companies is to design products and delivery processes that will result in a less environmental damage, and at the same time stay competitive in the global market. Remanufacturing is a research field that is gaining attention lately, since it is a process that can help companies to become environmentally sustainable by considering all these factors simultaneously (materials, processes and recycling). Remanufacturing is an industrial process whereby used products are disassembled, cleaned, reprocessed, inspected, and then reassembled to be used again. This concept has also gained significant importance because of consumer awareness, oversight from non-governmental organizations and legislative pressures which have encouraged manufacturers to produce eco-friendly products, and thus, more and more manufacturers now build reverse channels to recover used products for remanufacturing (Subramoniam et al., 2013; Long et al., 2019). Thus, remanufacturing strategy through design for the environment (DfE) can be considered as a way of complying with environmental legislation, but also as a business opportunity (Feng et al., 2019; Zheng et al.). Despite this growth in remanufacturing activities, there is a general acknowledgment that more research efforts are needed in order to examine in depth the relationships between sustainable consumption and remanufactured products (Abbey et al., 2015; Govindan, et al., 2015; Govindan, 2018).

This Virtual Special Issue (VSI) attempts to impel new research in the fields of remanufacturing and sustainable consumption with the objective of helping companies with their sustainability challenges and in turn to be competitive in the 21st century global market. The objective of this VSI is to generate research that proposes suitable strategies, and relevant methods and technologies for the development of sustainable remanufacturing. Research focused on strategies and management systems that can help to increase benefits and reduces costs (economic, social and environmental) and measure such benefits and

costs is also welcome. In practice, it is important for companies to adjust their performance and management strategies in response to the new environmental demands of consumers with the introduction of remanufactured products that contribute to the conservation of natural resources, raw materials, and sustainable development.

Authors are invited to submit research and/or review papers that address some of the topics shown in Table 1. In this regard, please note that although the topics are listed under four broad categories, the editorial team invites authors to focus upon one or more of the *'Research macro-areas'* and to address one or more *'Topics'*, in an integrated, multi-disciplinary paper designed to provide insights about the present and likely future directions of sustainable consumption through remanufacturing. The list of topics in Table 1 is illustrative but not restrictive; therefore, papers addressing other related dimensions are also welcomed.

1. Manuscript Preparation and Submission

A Virtual Special Issue (VSI) is an online-only grouping of Special Issue articles traditionally assigned to a single Special Issue. The articles in a VSI will be assigned a unique identifier and published in a regular journal issue. The unique identifier allows to simultaneously adding the article to a VSI in ScienceDirect.com. Articles grouped together in a VSI retain their original citation details. A VSI speeds up the publication of individual articles as, unlike the publication process for conventional Special Issue articles, a VSI does not need to wait for the final article to be ready before publication.

All authors are invited to submit extended abstracts of 1000-1500 words of their proposed papers to Dr. Kannan Govindan (kgov@iti.sdu.dk). The editorial team will review all submissions and will provide prompt feedback to the authors so that they are best guided for preparation of top-quality papers.

After the extended abstracts have been reviewed, all authors will be

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¹ Managing Guest Editor.

Table 1
Research macro-areas and topics.

Emerging markets for remanufactured products	<p>Supply side:</p> <ul style="list-style-type: none"> ● Role played by organizations (OEMs, 3PL) from emerging economies (India, China, Brazil, etc.) to deal with the main barriers to implement remanufacturing operations. ● Role played by government and public institutions in fostering implementation of remanufacturing systems in emerging economies or emerging markets. ● R + D in remanufacturing activities: identification and development of new categories of products suitable for remanufacturing; new materials, processes, management systems, that make remanufacturing easier and less costly. ● Trends and challenges of remanufacturing industry for 21st century. <p>Demand side:</p> <ul style="list-style-type: none"> ● Level of knowledge of consumers about the existence and main features (quality, warranty, performance, etc.) of remanufactured products, in these emerging economies and markets. ● Existence of consumer segments interested in purchasing remanufactured products. ● Identification of new trends in consumption habits that can match with a wider supply of remanufactured products.
Online channels for remanufactured products	<ul style="list-style-type: none"> ● Types of strategies to be performed to reduce consumer's uncertainty about features of remanufactured products sold online. ● Main factors that could affect the highest or least consumer's acceptance of remanufactured products sold online. ● Possibility that different categories of remanufactured products require different online commercialization strategies.
Information Technology (IT) systems for remanufactured products such as core management	<ul style="list-style-type: none"> ● State-of-the-art in IT capabilities likely to apply at remanufacturing operations management. ● Role played by enterprises to improve the customer buying experience (product characteristics, buying conditions, product tracking, etc.) by using IT systems. ● Role played by IT systems to improve the return process (commercial returns) initiated by customers. ● Social and economic balance of remanufacturing. ● Cost-benefit analysis of remanufacturing processes.
Management and metrics of remanufacturing for a sustainable development	<ul style="list-style-type: none"> ● Economic and environmental savings: key performance indicators of the impact of remanufacturing on environment, raw materials and natural resources; measure of economic savings for companies. ● Life cycle analysis as a basic approach for making decisions considering the costs and benefits of using a particular material and process combination in remanufacturing.

notified whether their abstracts have been accepted as submitted or amendments should be made as the authors develop their full, peer-review ready papers. The authors invited to develop their full papers are kindly requested to access and to follow the "Guide for Authors" at: <http://www.journals.elsevier.com/resources-conservation-and-recycling>. All manuscripts and any supplementary material should be submitted through Elsevier Editorial System (<http://ees.elsevier.com/recycl>). The authors must select "SI: Remanufacturing" in the submission process.

2. Important Dates

- Submission of extended abstracts: 01 November 2019
- Feedback of extended abstracts: 30 November 2019
- Full paper submission deadline: 01 April 2020
- Final decision notification: 01 August
- Publication: As soon as accepted (VSI)

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