



Open Invited Track on *Complexity in Control of Circular Supply Chains and Distributed Production*

Organised by:

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In recent years, the unparalleled waste and resource inefficiencies generated by linear economy concepts and the limited life-time of consumer goods have become increasingly noticed in society. To address these issues, concepts for circular economy and sustainable product design have been developed. These are based on the idea, that products should be designed with regard beyond their end-of-life, and rather than a one-way transformation of resources to landfill, proactively enable new recycling and recovery methodologies to extract all usable material for reintroduction to the supply chain. However, these concepts introduce major complexity to Supply Chain Management (SCM) and Production Planning and Control (PPC). A multitude of parameters requires consideration in order to ensure financially and ecologically sustainable production. Parameters include among others fluctuating resource prices, available waste material for recovery and recycling, reliability of forecasts, fluctuation in production, supply and demand and numerous human factors. As such, planning and control are faced with an increasingly complex environment, characterized by a multitude of different subproblems and various data sources.

This session aims to explore recent advances in modeling and implementation of circular supply chains, distributed production control, data analysis and AI-applications. Moreover, business models and concepts for sustainable circular supply chains are a key interest. Thus, topics may include, but are not limited to:

- Circular Supply Chains;
- Distributed Supply Chain Control;
- Distributed Production Control;
- Data Analysis and Forecasts for Circular Supply Chains;
- Complexity Management of Circular Distributed Production Systems;
- AI-based Approaches for Distributed Production Systems and Performance Prediction;
- Business Models and Concepts for Circular Supply Chains

For author guidelines, please refer to www.ifac-control.org. All papers must be submitted electronically at <https://ifac.papercept.net/>. All papers must be prepared in a two-column format in accordance with the IFAC manuscript style. Please use the official IFAC instructions and template to prepare your contribution as full-length draft paper and submit it on line. Submission details are available on the conference website. All submissions must be written in English. All papers that conform to submission guidelines will be peer-reviewed by IPC members.

The corresponding authors need to submit their paper online (pdf format) as Open Invited Track Paper using the following code: **b15h5**

Important dates:

- Draft paper submission: 31st January 2024
- Notification of acceptance: 15th March 2024
- Final paper submission: 15th April 2024