

Invited Session on “**Recent advances in Smart and Sustainable Manufacturing and Maintenance**”

Special session identification code: \_\_\_\_\_

IFAC World Congress 2023, Yokohama, JAPAN, 9 July – 14 July 2023

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**Objectives:**

Increasing of globalization and contemporary market demands, manufacturing efficiency is more and more often defined not only as the capacity for low-cost production of specified quality products but also being in line with social and environmental requirements. In this context the manufacturing and maintenance functions play an important role, which ensure the asset availability and product quality simultaneously monitor of natural resources using and people and process safety. On the one hand, the effectiveness of manufacturing and maintenance functions guarantees the compliance of processes and products and reduces their impacts on society, and the surrounding environment. On the other hand, they must be sustainable business functions by themselves and limit their flows and impacts generated during all production and maintenance activities. Moreover, Industry 4.0 technologies bring high potentiality for enhancing manufacturing and maintenance management and execution, which is an opportunity for integrating the sustainability dimension. Adopting sustainability in manufacturing and maintenance requires a comprehensive look covering not just these processes but also the technologies involved in their realization.

The objective of this Invited Session is to present the state-of-art of theoretical developments and applications of Industry 4.0 technologies in the area of sustainability in manufacturing and maintenance areas in various industry sectors.

This Special Session is focused on:

- optimal and sustainable manufacturing systems designing,
- designing and improving of smart and sustainable manufacturing and maintenance processes,
- applications of Industry 4.0 technologies for modelling sustainable manufacturing and maintenance systems and processes,

- implementing interoperability in real and cyber-physical manufacturing and maintenance systems.

**Scope:**

This Special Session covers all theoretical and application oriented aspects of smart manufacturing systems. Topics of interest include, but are not limited to:

- Drivers and barriers of Industry 4.0 technologies implementation for sustainability in manufacturing and maintenance processes;
- Multicriteria optimization in manufacturing and maintenance systems operations and engineering,
- Intelligent decision support for sustainable manufacturing and maintenance practices;
- Human factors, industrial ergonomics, and safety in smart and sustainable production maintenance;
- Modelling and simulation of smart and sustainable manufacturing and maintenance processes;
- Big Data analytics for sustainable manufacturing and maintenance;
- Digital-twin-driven intelligent manufacturing and maintenance for sustainability;
- Internet of Things solutions in manufacturing and maintenance for sustainability;
- Data-driven manufacturing, maintenance and product lifecycle management systems;
- Manufacturing and maintenance data management for sustainability and circular economy
- Predictive and prescriptive maintenance for sustainability
- Operator 4.0 concept for smart manufacturing and sustainable maintenance.

Contributions containing of both: the theoretical and practical results obtained in this area are welcome.

**Submission:**

All papers must be submitted electronically using the IFAC PaperPlaza conference manuscript management system: [www.ifac.papercept.net](http://www.ifac.papercept.net). Submissions must be prepared according to IFAC format, see: [ifac.papercept.net/conferences/support/support.php](http://ifac.papercept.net/conferences/support/support.php) Please submit your contribution online by 31 October, 2023. 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 author submits the paper online (pdf format) as **an invited session paper**. Submission as an invited paper requires the **invited session code**.

**Important dates:**

October 31, 2022	Draft manuscript submission
February 21, 2023	Notification of acceptance/rejection
March 31, 2023	Deadline for the final submission