

MIM ON MANUFACTURING MODELING MANAGEMENT & CONTROL
10th International Federation of Automatic Control (IFAC) Conference

Invited session

Recent Advances in Smart and Sustainable Maintenance

(code XXXXX)

Organizers

Malgorzata JASIULEWICZ-KACZMAREK, *Poznan University of Technology, Poland*, malgorzata.jasiulewicz-kaczmarek@put.poznan.pl

Alexandre VOISIN, *Université de Lorraine, CNRS, CRAN, France*, alexandre.voisin@univ-lorraine.fr,

Chiara FRANCIOSI, *University of Salerno, Italy*, cfranciosi@unisa.it,

Irene RODA, *Politecnico di Milano, Italy*, irene.roda@polimi.it,

Grzegorz BOCEWICZ, *Koszalin University of Technology, Poland*, grzegorz.bocewicz@tu.koszalin.pl

The maintenance function has gained an important role to promote sustainability, reducing industrial impacts and guaranteeing assets availability and product quality while keeping resources and energy consumption under control. From the one hand, maintenance guarantees the compliance of processes and products, and reduces their impacts on society, and surrounding environment. From the other hand, it must be a sustainable business function by itself and limit its flows and impacts generated during all maintenance activities. Moreover, Industry 4.0 technologies bring high potentiality for enhancing maintenance management and execution, which is an opportunity for integrating the sustainability dimension. In this context, adopting sustainability in maintenance requires a comprehensive look covering not just the maintenance processes but also technologies involved in their realization. The aim of this session is to present the state-of-art of theoretical developments and applications of Industry 4.0 technologies in the area of sustainability in maintenance in various industry sectors. Topics and themes can include but are not limited to:

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

Keywords: Industry 4.0, technologies, maintenance management, decision support system, risk and opportunities.

Submission:

For author guidelines, please refer to <https://ifac.papercept.net/conferences/scripts/start.pl>. All papers must be submitted electronically using Symposium Manuscript Management System (CMMS): www.ifac.papercept.net. Please use the official IFAC instructions and template to prepare your contribution as a full-length draft paper. 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 xxxxx**.