Sustainable manufacturing-distribution systems: recent advances in reliability and maintenance modelling and optimization

In the majority of industrial sectors, manufacturing systems represent a significant portion of the capital. For the design, operation and management of these systems, integrated approaches have been well recognized to be effective and have hence attracted researchers from reliability, availability, and maintainability (RAMS), and operational research (OR) research fields. Manufacturing-distributions systems must indeed be cost-effective, time-efficient, resilient, agile, and sustainable. Sustainability has become not only a crucial performance indicator but also a customer attraction feature. Sustainability concerns relate to the material and energy consumption and greenhouse gas emissions from raw material extraction to production processes and distribution. Several recent studies demonstrated the benefit of making joint decision on production and maintenance planning problems for manufacturing-distributions systems. In addition to maintenance and production decisions, quality control, ethical sourcing and decarbonization need to be accounted for in the overall decision processes. In addition, the recent developments within large-scale, robust optimization, machine learning and Industrial internet of things must be considered.

This session aims to bring together a group of researchers who have investigated these topics and will have them share their research work with the community with the goal of fostering future research on these key issues. The session also aims to establish a bridge between scientific communities sharing research issues in reliability & maintenance, operational research, remanufacturing, large-scale optimization, supply chain and logistics management, etc.

Original research papers, methodological papers, case studies, and short communications on the theme of this special session are welcomed. Topics may include but are not limited to:

- Machine learning modelling for diagnostics and prognostics
- Integration of Industry 4.0/5.0 concepts with RAMS for complex systems
- Design for sustainable manufacturing-distribution systems
- Failure data analysis and condition assessment models for remanufacturing
- Maintenance and production outsourcing models for manufacturing systems
- Integrated analysis of quality, production, and maintenance for manufacturing systems
- Reliability assessment of manufacturing and remanufacturing systems
- Robust optimization of joint maintenance and production planning
- Optimal maintenance strategies for sustainable systems
- Warranty and leasing models for new or reconditioned manufacturing systems
- Safety models for manufacturing and remanufacturing systems
- Sensor-data and data-driven maintenance and reliability optimization
- Case studies on Wind farms, unmanned aerial vehicles, etc.

Guidelines for the preparation of manuscripts are on the conference website at: https://www.incom2024.org/
Paper submission: https://ifac.papercept.net/conferences/scripts/start.pl Find INCOM 2024, proceed as an invited paper and indicate the invited session identification code XXXX. If you experience any difficulties, please contact one of the organizers**.**

Submission Deadline: January 31, 2024 **Final paper submission deadline: April 15, 2024**

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