



15th IFAC Workshop
Intelligent Manufacturing Systems (IMS 2025)
Koszalin, Poland, 11-12 September 2025



<https://ims2025.pl/>

This proposal is endorsed by TC 5.1, TC 5.2 and TC 9.2

Invited Session Proposal:

Intelligent Methods in Management of Production Systems

Proposed by: Anna Burduk (Poland), Margret Anuncia S. (India), Joanna Kochańska (Poland), Anthony Xavier Michael (India), Izabela Miturska-Barańska (Poland) Suthep Butdee (Thailand).

Keywords: Artificial intelligence, Intelligent optimization, Intelligent manufacturing systems, Smart factories, Industrial Internet of Things (IIoT)

Code: 3say5

ABSTRACT

Management of manufacturing systems involves the development of detailed solutions related to decision-making and problem-solving processes. There are many important decisions to be taken and high complexity problems to solve (NP-hard), related to e.g. processes organization, planning and control of manufacturing systems. Special attention is paid to inexact solutions for which no known algorithm can obtain an exact solution in polynomial time. Research into new production management methods is also driven by the need to increase the autonomy and flexibility of production systems. The answer to these needs is production focused on cyber-physical systems, which are one of the paradigms of the Industry 4.0 concept. The aim of this session is to present the results of research related to the management of production systems. Taking into account the complexity of problems related to production management, soft computing and intelligent methods may deliver the most adequate answers.

This session invites high-quality contributions that investigate the latest theoretical developments, methods, practical tools, and real-world applications related to intelligent methods in management of production systems in the context of Industry 5.0. These contributions may address the main research challenges, reviews, case studies and applications related to (but not limited to) the following topics:

- Artificial intelligence methods in decision support systems
- Intelligent optimization of production processes
- Intelligent systems in management
- Intelligent Manufacturing Systems
- Intelligent Models and Control Systems
- Smart factories and Industrial Internet of Things (IIoT)
- Cyber security applications for Industry 4.0
- Reliability & risk assessment in production
- Monitoring systems and sensors
- Databases & knowledge management
- Modelling & Simulation & Digital Twins
- AI-based industrial data analysis and decision support systems in Industry 4.0 and 5.0
- Knowledge Management

Timeline:

- **December 16, 2024:** Deadline for paper submission
- **March 03, 2025:** Notification of acceptance/rejection
- **April 07, 2025:** Final paper submission
- **September 11-12, 2025:** 15th IFAC IMS Workshop (IMS 2025), Koszalin, Poland

Manuscript Preparation

For Manuscript Preparation please look at <http://www.ifac.papercept.net/conferences/support/support.php>

For Manuscript submission please look at <https://ifac.papercept.net/conferences/scripts/start.pl>

Upon submission, make sure to use the **Invited session identification code: to be announced latter**

For any further information, please contact the Special Session Technical Committee

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