

11th IFAC Conference on Manufacturing Modelling, Management and Control (MIM 2025)

<http://conferences.ifac-control.org/mim2025/>

Invited Session:

Management and control in smart manufacturing and logistics systems

Organized by:

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Aim & scope :

Given the substantial potential for economic growth at both regional and global levels, market and business transformation has emerged as a vital competitive asset, with turnover being manufacturers' primary source of profit. As a result, the manufacturing and logistics management sectors play an increasingly critical role in today's global economy. Recently, the fields of smart manufacturing and logistics systems have gained significant attention from both academia and industry, owing to their remarkable potential to boost profitability in fast-paced, competitive markets. Central to smart manufacturing and logistics is the optimization of production and supply chain processes through the integration of advanced technologies, including machine learning, big data analytics, and artificial intelligence algorithms. In addition, the call of novel metaheuristics like eagle optimization, Particle Swarm Optimization, Dung beetle optimizer, red kite Optimization Algorithm (ROA), Shuffled shepherd optimization method, and Gannet optimization algorithm

Indeed, an efficient and effective management of supply chains is essential for businesses to meet customer demands, reduce costs, and gain a competitive edge. Optimization, scheduling, and operations management are key disciplines that enhance the performance of modern logistic systems and supply chains. Optimization involves finding the best possible solutions to complex problems, often characterized by multiple variables, constraints, and objectives. Operations management focuses on designing, managing, and improving processes that transform inputs into goods and services. Together, these disciplines help streamline processes, minimize waste (reverse logistics), and improve resource allocation.

For this reason, we invite authors to submit research papers that focus on the modeling, analysis, control, and optimization of smart manufacturing and logistics systems (including logistics in smart cities). Topics may include but are not limited to, innovative approaches in automation, real-time data processing, predictive maintenance, sustainable supply chains, and the implementation of Industry 4.0 principles.

In this Special Issue, original research articles and reviews are welcome. Research areas may include (but are not limited to) the following:

- Supply logistic systems: Optimization and operations management
- Green logistics
- Logistics in smart city
- Industry 4.0: strategies, models, and technologies
- Data mining in smart logistics
- Supply chains and operations management
- Digital supply chain transformation
- Supply network resilience
- Digital supply chain twins
- Predictive models in smart logistics and supply chains
- Design and optimization of transport networks
- Reverse logistic and closed-loop supply chains
- Sustainable logistics and delivery
- Carbon footprint and carbon trading
- Transport and delivery
- Scheduling algorithms in transportation
- Manufacturing and remanufacturing systems

Both theoretical and applied research contributions and real-world application feedback are welcome.