

Proposal for Special Session at IEEE CASE 2021

Goal:

- With the rapid development of automation, information and communication technology (ICT), and artificial intelligence, manufacturing is moving from an automation-oriented industry to a more intelligence-oriented one. In the intelligent manufacturing environment, the market demand and products are highly dynamic, the manufacturing process is complex, and there are a lot of uncertain factors inside and outside the intelligent factory. Most of the researches and applications about Smart Factory are conducted from the perspective of ICT, whereas researches from the perspective of operations management (OM) perspective are lagging behind.
- These deficiencies motivate us to embrace new operations management methods to improve the adaptability, foresight, optimization, and agility of the smart factory. In this session, we welcome all contributions that relate to using the modeling and algorithmic approaches with application to addressing intelligent manufacturing operational problems, including but not limited to:
 - The value formation mechanism in intelligent manufacturing through OM and ICT integration
 - Digital twin-based decision making for intelligent manufacturing system
 - CPS or HCPS-based manufacturing system integration
 - Simulation-based intelligent manufacturing optimization
 - Servitization of intelligent manufacturing
 - Human machine/robot manufacturing optimization
 - Optimization of product-service system
 - Supporting platform for smart products
 - Intelligent production planning and scheduling for manufacturing network
 - Production planning and scheduling for customized products manufacturing
 - AI-based novel approaches for intelligent manufacturing
 - Machine learning and OR hybrid algorithm for complex intelligent manufacturing management
 - Intelligent manufacturing logistics system optimization
 - Big data analysis for intelligent manufacturing
 - Human machine/robot collaboration
 - Transient and real time production control

Session Title: [New Methods for Intelligent Manufacturing Operations Management]

Organizers:

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Contributions:

1. “Integrated Production and Transportation for Cooperative Planning in a Make-to-Order Manufacturing Network” by Kefei Liu

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More contributions to be added.