

Digitizing the Future: Low-Cost Technologies for Sustainable Industry 4.0



This proposal is endorsed by TC51 Manufacturing Plant Control

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Abstract:

As Industry 4.0 continues to transform manufacturing, small and medium-sized enterprises (SMEs) often need help adopting new digital solution due to technological complexities and high costs. This special session highlights the emerging trend of low-cost digital solutions accelerating the adoption and transition to Industry 4.0, especially by SMEs. There has been a recent emergence of practical, innovative, and cost-effective pathways to digital transformation in Industry 4.0. These pathways offer interesting and impactful insights into how SMEs can adopt low-cost technologies to improve competitiveness, sustainability, and social impact. Interestingly, many of these approaches are also well-suited for larger organizations with certain considerations and adjustments, primarily around IT governance policies and network security. This session will primarily focus on methodologies, best practices, and case studies that use affordable monitoring, automation, and other emerging technologies tailored for SMEs but equally compelling for large organizations. Submissions are expected to explore both theoretical developments and practical approaches for cost-effectively adopting digital systems, overcoming barriers posed by legacy systems, achieving robust digital transformation without compromising security or efficiency, while enabling capabilities for industrial sustainability in the light of societal and environmental challenges.

Call for Papers:

We look forward to receiving submissions that explore the challenges and solutions for driving affordable digital transformation within the framework of Industry 4.0. We welcome contributions focusing on cost-effective digital solutions within the context of Industry 4.0, particularly those that benefit SMEs. Submissions are encouraged (but not limited to) in the areas of:

- Affordable Digitalization in Key Sectors (manufacturing, logistics, construction, healthcare, and agriculture).
- Sustainable & Circular Practices with Digitalization
- Low-Cost Automation and Control
- AI & Automation for Low-Cost Industry 4.0
- Enhancing Legacy Systems with Low-Cost Technologies
- Cost-Effective Digital Twins & Industry 4.0 Applications
- Digital Transformation for SMEs
- Digital Skills for Industry 4.0 Workforce
- Digital Performance and Impact Assessments
- Digital Security and Data Protection for Low-Cost approaches

- Value and Impact of Digital Solution Deployment
- Low-Cost technologies used in Digital Solutions

Invited Session Code:

6817i

Please use the above code on the submission portal to select this session for your paper.

Important dates:

- **30 November 2024** - Full regular papers, papers for invited tracks/sessions, extended abstracts deadline
- **30 January 2025** - Notifications to authors; Registration opens
- **28 February 2025** - Camera ready paper submission deadline
- **15 March 2025** - Early registration rates expiration date