

Special session Title:

Digital transition for flexible manufacturing systems

Accelerating the concurrent green and digital transitions is crucial for fostering sustained and prosperous growth in alignment with the European Green Deal initiative strategy. To lead these dual transformations successfully, European research and innovation will play a pivotal role for manufacturing sector. One key element for production systems lies in flexibility to meet the demands of a rapidly changing global landscape. Indeed, flexibility of production system is essential for accommodating changes in production based on specific requirements and evolving circumstances. This adaptability involves the introduction, modification, or removal of various process steps. As such, Reconfigurable Production Systems (or Modular Production System) represents a means to achieve such flexibility. Although the concept of modularity is well-established, there is still a considerable number of production steps that do not possess modularity, and those that do may not align with current requirements or sustainable production practices.

In that way, the objective of this special session is to present the contribution of European projects to these aims. A focus will be given to the contribution of digital technologies to enhanced flexibility in production systems. In particular, the contribution should ease the transition from modular technology to sustainable production for varying batch sizes, including single lots, with a clear integration of control and decision-making strategies at different levels and throughout the supply chain. The expected contribution should present project contribution concept.

Keywords: reconfigurable manufacturing, sustainable manufacturing, digital technologies, industry 4.0, European project.

Organized by:

Alexandre VOISIN	Université de Lorraine	alexandre.voisin@univ-lorraine.fr
Doru S. ANDREIANA	Idener.ai	doru.stefan@idener.ai
Markus WABNER	Fraunhofer Institute for Machine Tools and Forming Technology	markus.wabner@iwu.fraunhofer.de
Ivo ZELLER	Steinbeis Europa Zentrum	ivo.zeller@steinbeis-europa.de

Important dates:

- Full paper submission: 31 January 2024
- Notification of acceptance: 15 March 2024
- Final, camera-ready paper submission: 15 April 2024
- Conference days: 28-30 August 2024, Vienna, Austria