

Special Session

”TRINITY – Agile production technologies in manufacturing ecosystems”

Organized by:

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Manufacturing companies can remain competitive nowadays only if they maintain a high level of agility in their production processes. They have to be able to respond effectively to changing requirements. The aim of the proposed session is to discuss how to increase the agility of various manufacturing processes by introducing advanced robot technologies into the production, especially in case of small and medium-sized enterprises (SME) manufacturing companies. From our point of view, the improvements are grouped around the following three topics to provide added value, namely robotics, IoT, and cybersecurity. In these main topics, we have identified several main advanced robot technologies that can contribute to this goal, e.g. collaborative robotics, possibly supplemented by sensory systems to ensure safety, programming by demonstration, advanced user interfaces based on augmented reality and speech, reconfigurable robot work cells, reconfigurable peripheral equipment (fixtures, jigs, grippers), automated guided vehicles (AGVs), soft robotics.

Agile manufacturing is one of the main trends in the research and development nowadays, which we ask for the support of the proposed section.

The first part of the session will feature talks of renowned researchers in these areas, focusing on how their technologies can contribute to increasing the agility of industrial production. These initial talks will be followed by presentations from papers, which will focus on production processes that are not yet fully automated.

<p>This special session calls high-quality contributions that investigate the main research challenges, reviews, case studies, and applications related to the following topics (but not limited to):</p> <ul style="list-style-type: none">• Programming by demonstration• Digital twins in agile manufacturing cells• Mobile robotics in agile production• Reconfigurable hardware for agile production• Dexterous manipulation for industrial applications• Interaction modalities• Human-Robot-Collaboration• IoT technologies to support agile manufacturing• Cybersecurity in robotic applications• Safety functions enhancing ISO robotics standards	<p>PAPER SUBMISSION: Authors are invited to submit draft papers reporting original research of theoretical or applied nature, on the topics of the session. Final manuscripts are limited to 6 pages</p> <p>SPECIAL SESSION CODE: xbu4q When you submit your paper to the IFAC system, you will be required this ID number in order to associate your paper to the special session: https://ifac.papercept.net/</p> <p>IMPORTANT DATES: Draft papers submission deadline: 7th November 2020 Notification of acceptance: 15th December 2020 Final papers submission deadline: 1st February 2021 Early registration deadline: 8th February 2021 Late registration deadline: 1st April 2021 Conference date: 7th-9th June 2021</p>
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