



the 10th IFAC Conference on
Manufacturing Modelling, Management and Control MIM 2022!

22/23/24 June 2022

Nantes, France

<https://hub.imt-atlantique.fr/mim2022/>

Invited Section on

Industrial robotics: modeling, control and applications

Invited Track Code: **51r68**

Session Chairs:

- Dr. Alexandr Klimchik, Innopolis University, RUSSIA
- Prof. Dr. Anatol Pashkevich, IMT Atlantique, FRANCE

Abstract. The primary objective of this track is to bring together specialists in different fields of industrial robots modeling, control and their application in manufacturing and service. It addresses scientific and engineering problems that arise in automation of various technological processes and robot-based transportation in the industrial environment. Particular topics covering by the track include optimal design, simulation and modeling of robotic manipulators and robotic manufacturing cells, robot calibration and estimation model parameters, manipulator accuracy improvement, advanced and intelligent robot control, human-robot collaboration, cooperation and interaction, as well as robot application in assembling, milling and welding. Special emphasis is given to the innovative methodologies and advanced technologies in the area of modern industrial robotics and multi-robot cooperation.

Keywords. Industrial robots, modeling, advanced control, calibration, intelligent system, robot-based transportation

Track topics and their description

Modern industrial robotics gradually advances in the direction of intelligent control and automation of both primary and secondary operations required by manufacturing process. This induced essential enlarging of research topics and developing of multidisciplinary approach. In recent years, they moved from conventional mechanical modeling and optimization of robot/process parameters to sophisticated perception and adaptive control, as well as multi-robot cooperation in presence of human being. In order to contribute to the above-mentioned areas, this track includes the following topics, but not limited by them:

- Industrial robots
- Advanced robot modelling
- Optimization and optimal control of robotic systems
- Motion planning and optimization
- High precision manufacturing
- Robot calibration
- Collision avoidance
- Intelligent and flexible automation
- Collaborative robots
- Human-robot interaction, collaboration and cooperation
- Learning and adaptive robotic systems
- Deep reinforcement learning in robotics
- Augmented, virtual and mixed reality in robotics
- Design new robotic components

Important dates:

December 25, 2021

February 15, 2022

March 15, 2022

Deadline for the submission

Notification of acceptance/rejection

Deadline for the final submission

Proposal 24 submitted to 10th IFAC Conference on Manufacturing Modelling, Management and Control. Received November 23, 2021.