

CALL FOR PAPERS:

***SPECIAL ISSUE ON ADVANCED CONTROL AND AUTOMATION
TECHNOLOGIES FOR INTELLIGENT MECHATRONICS SYSTEMS***

Mechatronics is the combination of mechanical, electrical, and electronic control and automation, and computer engineering. It is part of an industrial automation control system and is a synergistic combination of electrical components, electronic units, and precision mechanical components; microprocessor technology; various energy sources; and electric, hydraulic, and pneumatic drives. These units and components are combined in an intelligent control system, which is the focus of contemporary automated industrial systems.

Advanced automation technologies are deployed in numerous mechatronic and robotic systems, especially those requiring industrial autonomous operation. These systems are multidisciplinary and involve integrated systems engineering that combines various fields of study, including mechanical, electrical/electronic, control, and information disciplines. Despite advances in mechatronics and automation of robotic systems, problems remain for the rapidly changing industrial environment. These systems need to be smarter and more integrated in the industrial environment in which they operate. They must be robust and fault-tolerant and, where appropriate, contain self-diagnostic and predictive tools. New solutions are needed, especially in advanced sensing and perception, motion planning, intelligence, and control. These are the challenges for the next generation of mechatronics and robotics systems, so these new ideas can be incorporated into the analysis and design of future mechatronics and robotics systems.

This special issue provides an interdisciplinary platform for researchers and engineers alike to present and discuss the latest innovations, trends, and concerns in the field of advanced control and automation technologies. Potential topics include but are not limited to:

- Control and automation applications
- Nonlinear control system applications
- Industrial applications of robotics and electromechanical systems
- Artificial intelligence-based control
- Mechatronics and smart manufacturing systems
- Control and motion planning for precision technical operations such as machining, additive manufacturing, laser cutting
- Fault diagnosis and fault tolerant control applications
- Intelligent adaptive motion control
- Control modelling for sustainable development
- Innovative applications of mechatronics (predictive maintenance, mechatronics in sustainability and healthcare, digital agriculture, new human-machine interfaces, advanced robotics, educational systems, etc.)

Tentative schedule

- Deadline for submissions **31 December 2022**
- Tentative Publication Date **July 2023**

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