



## Advanced Motion Control of Multiple Robots

Guest Editors:

**Dr. Hector M. Becerra**

Centro de Investigación en  
Matemáticas (CIMAT), Jalisco S-  
N, Guanajuato 36240, Mexico

**Dr. David Gómez-Gutiérrez**

Instituto Tecnológico José Mario  
Molina Pasquel y Henríquez,  
Unidad Académica Zapopan,  
Zapopan 45019, Jal., Mexico

**Prof. Dr. America Morales**

Centro de Investigación y de  
Estudios Avanzados (Cinvestav),  
Unidad Saltillo, Av. Industrial  
Metalurgia #1062, Ramos Arizpe  
25900, Coah., Mexico

Deadline for manuscript  
submissions:

**closed (31 July 2023)**



[mdpi.com/si/126865](https://mdpi.com/si/126865)

### Message from the Guest Editors

Dear Colleagues,

This Special Issue is dedicated to presenting research works where several robots have a global objective (task) and algorithmic solutions are proposed to control the motion of each robot such that a desired collaborative behavior is generated, mainly using local information that is shared among the robots.

We aim to provide a broad sampling of the research that is currently ongoing in the field of the motion control of multiple robots, for wheeled, underwater, aerial and humanoid robots in homogeneous or heterogeneous groups.

In this Special Issue, original research articles and reviews are welcome. Research areas in the context of the control of multiple robots may include (but are not limited to) the following:

- Control architectures and scalability.
- Control of robots with motion constraints.
- Advanced control design.
- Optimal and optimization-based control.
- Cooperative motion planning.
- Formation control with collision avoidance.
- Collaborative navigation.
- Synchronization of AGVS.
- Exploration with multiple robots.
- Control of multiple robots for novel applications.

We look forward to receiving your contributions.

# Special Issue



an Open Access Journal by MDPI

## **Editor-in-Chief**

**Prof. Dr. Antonio J. Marques  
Cardoso**

CISE - Electromechatronic  
Systems Research Centre,  
University of Beira Interior,  
Calçada Fonte do Lameiro, P-  
6201-001 Covilhã, Portugal

## **Message from the Editor-in-Chief**

*Machines* is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.

Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.

There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

## **Author Benefits**

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within *Scopus*, *SCIE (Web of Science)*, *Inspec*, and other databases.

**Journal Rank:** JCR - Q2 (Engineering, Mechanical) / CiteScore - Q2 (Control and Optimization)

## **Contact Us**

---

*Machines* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/machines](http://mdpi.com/journal/machines)  
[machines@mdpi.com](mailto:machines@mdpi.com)  
X@Machines\_MDPI