

# Special Issue

## Motion Optimization of Mechanical Structures

### Message from the Guest Editors

Motion control is a key requirement in many fields, such as engineering, micromanufacturing, biotechnology, and nanotechnology. Although great advances have been made in control engineering, it is still challenging to achieve the desired performance level in precision motion control systems. In high-dimensional manipulation platforms, this optimization is so computationally complex that traditional approaches have long focused primarily on solution feasibility rather than local optimality. Efforts to holistically understand the optimization problem and exploit the structure of the problem to increase computational efficiency begin to pay off. There are very fast constrained optimizers that use second-order information to enhance convergence and exploit the geometry of the problem much more efficiently than conventional planners. This Special Issue is devoted to state-of-the-art research on reliability technologies and applications for mechanical equipment and their subsystems and components, such as robots, vehicles, machine tools, etc. We seek submissions with an original perspective and advanced thinking on the addressed themes.

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### Guest Editors

Dr. Zoltán Virág

Prof. Dr. Florin Dumitru Popescu

Dr. Andrei Andras

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### Deadline for manuscript submissions

closed (15 January 2024)



# Machines

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## About the Journal

### 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.

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### Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso

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### Author Benefits

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#### Journal Rank:

JCR - Q2 (Engineering, Mechanical) / CiteScore - Q1 (Control and Optimization)

#### Rapid Publication:

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