

Special Issue

Dynamics and Control of Marine Mechatronics

Message from the Guest Editor

Marine mechatronics has emerged as a cornerstone of modern ocean engineering. Integrating mechanics, electronics, and advanced control theory, this field addresses the unique challenges posed by highly nonlinear dynamics, multi-physical interactions, and unpredictable marine environments. Key research priorities include optimizing energy efficiency, ensuring operational reliability under extreme conditions, and enabling autonomous decision making for complex tasks such as deep-sea exploration or offshore infrastructure maintenance. This Special Issue covers topics including, but not limited to, the following:

- Advanced control architectures for marine robotic systems;
- Modeling of coupled mechanical–electrical–hydrodynamic dynamics;
- Real-time sensor fusion and state estimation in noisy or partially observable environments;
- Energy-efficient actuation and power management for long-duration missions;
- Resilient system design addressing failures, extreme loads, or environmental uncertainties;
- AI-driven solutions for autonomous navigation, path planning, and swarm coordination.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Journal of Marine Science and Engineering (JMSE, ISSN: 2077-1312) focuses on research in the fields of Ocean Engineering, Coastal Engineering, Physical Oceanography, Geological Oceanography, Marine Biology, and Marine Environmental Science. It publishes reviews, regular research papers, and short communications, as well as Special Issues on particular subjects. 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 maximum length of the papers.

Editor-in-Chief

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Journal Rank:

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.5 days after submission; acceptance to publication is undertaken in 2.5 days (median values for papers published in this journal in the second half of 2025).