Special Issue

Hydrodynamics of Wave Energy Conversion Systems

Message from the Guest Editor

Wave energy converters (WECs) operate in challenging hydrodynamic environments where irregular seas, strong nonlinearity, and multi-physics coupling govern both energy capture and survivability. This Special Issue, “Hydrodynamics of Wave Energy Conversion Systems” , seeks original research and review articles that advance the numerical modeling and rigorous validation of WEC hydrodynamics. We welcome contributions spanning linear and nonlinear potential flow methods, time-domain solvers, fully nonlinear numerical wave tanks, CFD approaches (e.g., URANS/LES, VOF free-surface capturing), and hybrid multi-fidelity frameworks that balance accuracy and computational efficiency. We additionally encourage submissions that discuss high-quality tank tests and field measurement campaigns, benchmark datasets, scaling and uncertainty analyses, and systematic model–experiment/field comparisons. Topics of interest include, but are not limited to, wave–structure interactions, nonlinear wave effects, WEC arrays, farm interactions, model tests, techno-economic assessments, hybrid modelling, and numerical wave tanks.

Guest Editor

Prof. Dr. Guanghua He
School of Ocean Engineering, Harbin Institute of Technology, Weihai 264209, China

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Journal of Marine Science and Engineering
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
jmse@mdpi.com

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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

Prof. Dr. Charitha Pattiaratchi
School of Engineering, The UWA Oceans Institute, The University of Western Australia, Perth, WA 6009, Australia

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