Journal of Offshore Mechanics and Arctic Engineering

Editorial

Profiles of Two JOMAE Associate Editors (The Fifth in a Continuing Series)

Associate Editors of the Journal of Offshore Mechanics and Arctic Engineering

Since 1987, the ASME *Journal of Offshore Mechanics and Arctic Engineering* has been a dependable source for the dissemination of the studies of researchers, practitioners, and interested parties working in the ocean, offshore, arctic, and related fields. It is where one can read and learn from peer-reviewed research on all aspects of analysis, design, and technology development in these fields. The journal's goal remains one of showcasing fundamental research and development studies; it has also featured review articles and perspectives on well-established as well as emerging topics.

As I did in a recent editorial that appeared in the April 2022 issue of this journal [1] (and which cited three earlier similar editorials that appeared in June 2019, August 2020, and October 2021), I am seeking to once again highlight the efforts and dedication of an international team of Associate Editors, focusing on profiles of two of them at a time. It is this team that helps keep the journal vibrant, relevant, and timely in allowing the exchange of theoretical and practical developments in the ocean, offshore, and arctic engineering arena.

Today, the journal has 38 Associate Editors who cover the breadth of areas in offshore mechanics and arctic engineering; they represent 14 countries, namely, Australia, Canada, China, Denmark, Finland, Germany, India, Italy, Japan, Mexico, Norway, Singapore, the United Kingdom, and the United States. With support from hard-working reviewers, these dedicated Associate Editors help this journal release six issues each year.

I am truly delighted to continue this series of editorials profiling, each time, two Associate Editors and highlighting their expertise areas and accomplishments. I encourage you to learn about previously profiled Associate Editors [1]. In this issue, I present to you two Associate Editors—Dr. Madjid Karimirad, Associate Professor of Marine and Coastal Engineering at Queen's University, Belfast, United Kingdom, and Dr. Xinshu Zhang, Professor of Naval Architecture and Ocean Engineering at Shanghai Jiao Tong University, China.

Associate Editor, Dr. Madjid Karimirad. Dr. Madjid Karimirad (Fig. 1) is an associate professor (Senior Lecturer) in marine and coastal engineering at Queen's University Belfast (QUB) in the United Kingdom. Before he joined QUB in 2017, he was a Research Scientist at MARINTEK (Norwegian Marine Technology Research Institute) and SINTEF Ocean, Norway. He has more than 15 years of research experience dealing with marine structures and offshore technology. His background in both academia and industry is strong; he has worked as a research scientist and as a post-doctoral fellow and Ph.D. researcher in offshore technology, prior to his current appointment.

Dr. Karimirad earned his Ph.D. in March 2011 in Marine Structures from the Norwegian University of Science and Technology (NTNU). He was employed previously at CeSOS (Centre for Ships and Ocean Structures), a Centre of Excellence in Norway. His post-doctoral research at CeSOS was part of the NOWITECH (Norwegian Research Centre for Offshore Wind Technology) program where he was actively involved in advising Master's and Ph.D. students while carrying out his own research. Projects he was part of were related to offshore renewable energy structures and covered different aspects dealing with the design of offshore wind turbines; addressing fatigue and ultimate limit state analyses; numerical modeling of wind turbine drivetrain; evaluating the use of a combination of wave and wind energy devices; and carrying out studies on faults and transient events for offshore wind turbines.

Dr. Karimirad's expertise is in the design, analysis, and testing of offshore renewable energy (ORE) structures—especially, offshore wind turbines. He has served as a reviewer for several international journals and for conferences such as ASME's annual OMAE conference. He has previously served as an editorial board member for the Journal of Shipping and Ocean Engineering and currently serves as an editorial board member for Ocean Engineering (Elsevier), Applied Ocean Research (Elsevier), the International Journal of Coastal and Offshore Engineering, and Energies (MDPI). He is also an Associate Editor of the ASME *Journal of Offshore Mechanics and Arctic Engineering* (JOMAE) and of the journal, Frontiers in Energy Research.

Dr. Karimirad is a Fellow of IMarEST (Institute of Marine Engineering, Science & Technology, UK), a Fellow of the Higher Education Academy (UK), an active member of the American Society of Mechanical Engineers (ASME), and a Chartered Mechanical Engineer in the UK. He was recently elected as a Fellow of the Institution of Mechanical Engineers, FIMechE, UK.

Dr. Karimirad's expertise covers salient aspects of offshore mechanics, hydrodynamics, and structural engineering. Specific research areas deal with the dynamic response of offshore wind and tidal turbines, as well as wave energy converters subject to wave, current, and wind action. He has been part of NOWITECH for eight years and has carried out numerical simulations and ocean basin tests (through numerical analyses) for offshore wind applications. In addition, he has been involved in several European collaborative projects such as H2020 LIFES50+, EU IPRWind, and EU FP7 DTOcean.

Fig. 1 Dr. Madjid Karimirad

Dr. Karimirad's record of research in the field of offshore renewable energy includes more than 110 scientific publications on the subject in the past 15 years [2]. He has more than 2300 citations with an h-index of 26 and an i10-index of 35. At present, he is the Principal Investigator of the Floating Solar Supporting De-Carbonisation of N. Ireland £400 K (£300 K of cash and £100 K in-kind support from four industrial partners).

In addition, he is the PI of several different grants totaling £850 K that deal with offshore wind, floating solar, and wave energy. These grants include SolarTwin: Digital Twinning Lifetime Responses of Floating Solar Panels (£127 K), Decision Support Framework for Reliable and Cost-effective Repowering of Bottom-fixed Offshore Wind Farms (£27 K), as well as recently granted project LEAP HI: U.S.–Ireland R&D Partnership, CoWEC: Control Co-Design for Ocean Wave Energy Conversion, with £300k funded by DfE UKRI (4-year collaborative research between Queen's University Belfast (UK), Maynooth University (Ireland), Virginia Tech (USA), and University of Michigan (USA)).

Dr. Karimirad is currently supervising two postdoctoral researchers and four Ph.D. students. He has supervised more than 25 MS and MEng students. Two of his Ph.D. students have successfully defended their theses and viva (oral) exams.

Recent work of Dr. Karimirad is focused on the numerical and experimental assessment of offshore renewable energy structures to support, in particular, offshore wind and floating solar applications. This work includes hydrodynamic analysis using wave tank testing as well as numerical simulations and code development to enable better estimation of response and load effects. Figure 2 depicts some examples of this work.

Dr. Karimirad believes that further de-risking of offshore renewable energy (ORE) structures through better estimation of load and load effects is the key to reduced levelized cost of energy (LCOE) and sustained growth of green energy to achieve net-zero emission and sustainability. His team at QUB is developing advanced numerical codes verified against experiments that could accurately evaluate the stochastic dynamic response of ORE structures while supporting de-carbonization and sustainable offshore technology development; one example of this research can be found in Ref. [2].

Fig. 3 Dr. Xinshu Zhang

Associate Editor, Dr. Xinshu Zhang. Dr. Xinshu Zhang (Fig. 3) is a professor of the naval architecture and ocean engineering department at Shanghai Jiao Tong University (SJTU), China. Before joining SJTU in 2014, he worked for SBM, Technip, American Bureau of Shipping (ABS), and KBR, USA. He has more than 20 years of research experience in the field of marine hydrodynamics, in particular for nonlinear wave–wave and wave–structure interactions. He has a strong background in both academia and industry work.

Dr. Zhang was awarded his Ph.D. in March 2007 in marine hydrodynamics from the University of Michigan, Ann Arbor (UMICH). While employed in the industry, he was actively engaged in the design and analysis of various oil and gas exploration platforms. In particular, he was extensively involved in the

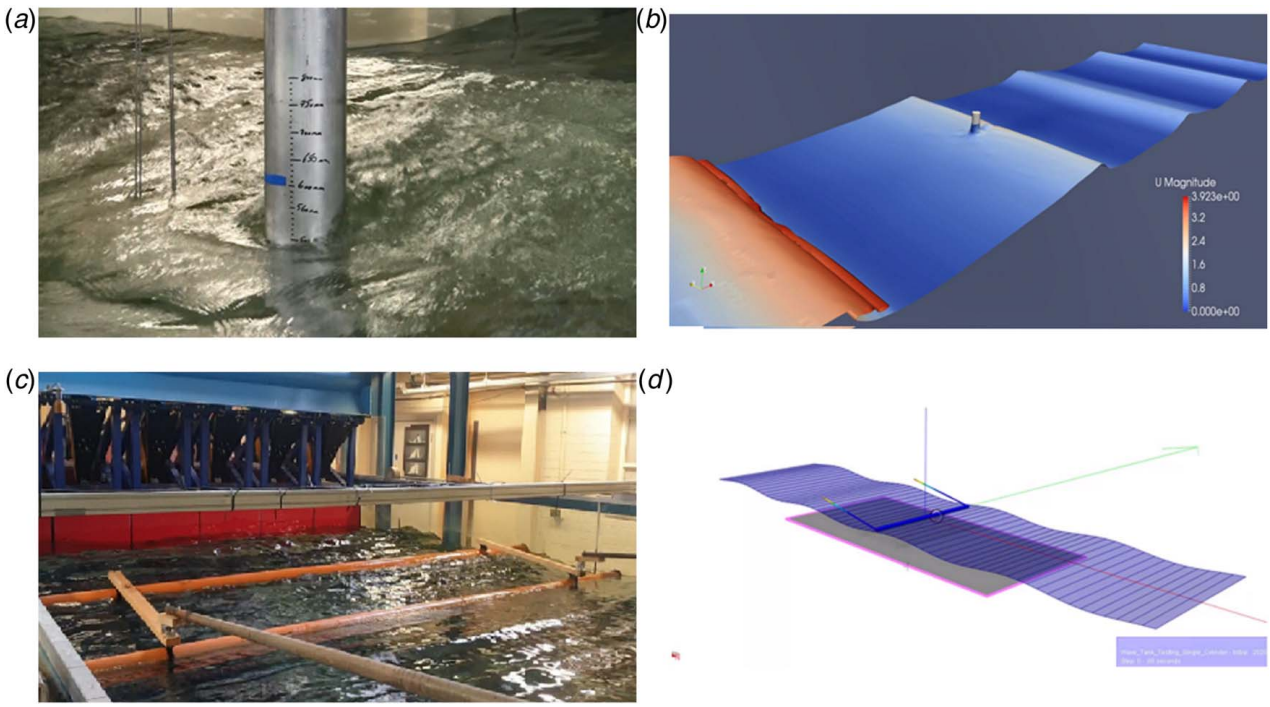

Fig. 2 (*a*) Wave tank testing of offshore monopile in extreme weather, (*b*) CFD modeling of wave–structure interactions using OpenFOAM, (*c*) experimental assessment of floating solar platforms subjected to near-shore waves, and (*d*) hydroelastic modeling of floating solar panel array

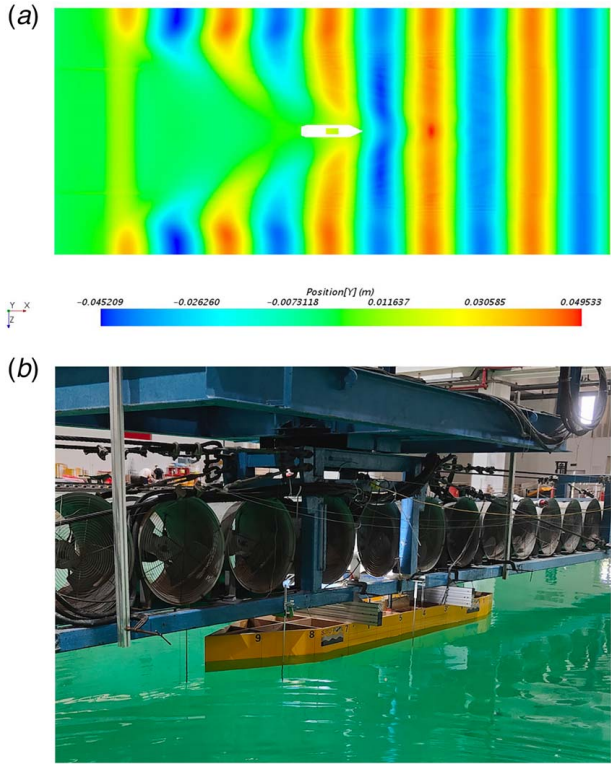

Fig. 4 (*a*) Numerical modeling of a drill ship with a moonpool using CFD and (*b*) Model test of a drill ship with a moonpool in a wave basin

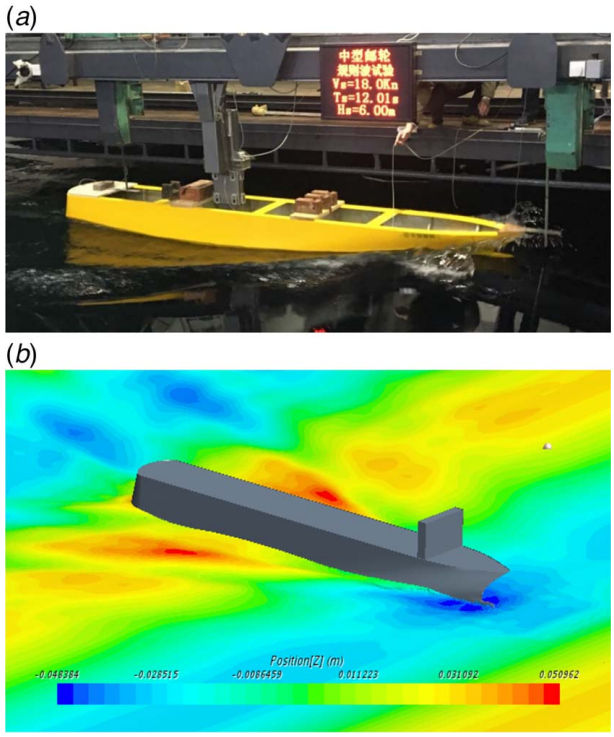

Fig. 5 (*a*) Model test of added resistance for a ship in a towing tank and (*b*) CFD simulation of a ship traveling in waves

design of the largest semi-submersible Floating Production Unit, Jack St. Malo (JSM), for Chevon. Dr. Zhang worked on different projects focusing on the design, analysis, and testing of offshore platforms; these included spars, tension-leg platforms (TLPs), floating production storage and offloading (FPSO) systems, and semi-submersible platforms. Relying on his practical experience, Dr. Zhang's team at SJTU has developed a novel design strategy for the optimization of oil and gas platforms that uses surrogate-model-based computational tools. This strategy is valuable to engineers working on the sizing of floater concepts as it can lead to a significant reduction in computation time and make the design iteration loop more efficient.

Currently, Dr. Zhang is serving as an editorial board member of Ocean Engineering (Elsevier) and of the Journal of Hydrodynamics (Springer). He is also an Associate Editor of the ASME *Journal of Offshore Mechanics and Arctic Engineering* (JOMAE). He is very active in the International Towing Tank Conference (ITTC). From 2017 to 2021, he was a technical committee member for the Specialist Committee on Modeling of Environmental Conditions of the 29th ITTC. From 2021 until 2024, he is serving as a technical committee member for the Specialist Committee on Wind Powered and Wind Assisted Ships of the 30th ITTC.

Dr. Zhang's expertise covers different aspects of marine hydrodynamics. He has a long record of research in the field of nonlinear wave–wave and wave–structure interaction with more than 50 scientific publications related to this subject. He is currently supervising six Ph.D. students and three M.S. students.

Dr. Zhang's recent work, funded by the National Natural Science Foundation of China, focuses on numerical and experimental studies on linear and nonlinear moonpool resonance. This work includes hydrodynamic analysis using wave tank testing as well as numerical simulations and code development to enable better response estimation. Figure 4 depicts examples of this work.

Dr. Zhang believes that a better understanding and estimation of hydrodynamic loads and failure modes of novel floating structures is important as they will be key to the safety of offshore floaters, renewable energy structures, and ships. His team at SJTU is developing advanced numerical codes verified against experiments [3] that could accurately evaluate the added resistance of ships at different Froude numbers and loading conditions and, thus, support de-carbonization efforts underway in the shipping industry (Fig. 5).

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Conflict of Interest

There are no conflicts of interest.

Data Availability Statement

No data, models, or code were generated or used for this paper.

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[1] Manuel, L., 2022, "Profiles of Two JOMAE Associate Editors (The Fourth in a Continuing Series)," ASME J. Offshore Mech. Arct. Eng., **144**(2), p. 020201.
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