



# Editorial

## A Continuing Series on the Journal's Associate Editors



Fig. 1 Dr. Sören Ehlers

The ASME *Journal of Offshore Mechanics and Arctic Engineering* is an international resource for original peer-reviewed research that advances the state of knowledge on all aspects of analysis, design, and technology development in ocean, offshore, arctic, and related fields. Its main goals are to provide a forum for timely and in-depth exchanges of scientific and technical information among researchers and engineers. It emphasizes fundamental research and development studies as well as review articles that offer either retrospective perspectives on well-established topics or exposures to innovative or novel developments.

In an Editorial [1] that appeared in the April 2020 issue of the journal, I noted that it is the dedication of an international team of Associate Editors, each with his or her own individual expertise in different areas, that helps keep the journal vibrant and ensures quality in the dissemination of knowledge in the field. The journal today has 38 Associate Editors who cover the breadth of areas in offshore mechanics and arctic engineering. They represent 15 countries—namely, Brazil, Canada, China, Denmark, Germany, India, Italy, Japan, Norway, Portugal, Singapore, Spain, Sweden, the United States, and the United Kingdom. It is these behind-the-scenes Associate Editors and the many hard-working reviewers

who support them that make the journal what it is. In this issue, I continue an aperiodic series began last year [1] where my goal is to acknowledge contributions of the Associate Editors, while highlighting their own technical expertise areas and accomplishments. Accordingly, in this issue, I am pleased to present to you two Associate Editors—Dr. Sören Ehlers, a Professor and the current Head of the Institute for Ship Structural Design and Analysis at the Hamburg University of Technology (TUHH) and Dr. Qing Xiao, a Reader in the Department of Naval Architecture, Ocean and Marine Engineering at the University of Strathclyde, Scotland, in the United Kingdom.

### Associate Editor, Dr. Sören Ehlers

Dr. Sören Ehlers (Fig. 1), D.Sc. (Tech.), is a professor who specializes in the design and analysis of ships and offshore structures. He is the current Head of the institute for Ship Structural Design and Analysis at the TUHH. He studied at the University in Rostock, Germany; in 2004, he obtained the title of Diplom-Ingenieur in Mechanical Engineering with a specialization in Naval Architecture and Ocean Engineering. Also in 2004, he co-founded the engineering service company, AS2CON. From 2004 to 2009, he worked as a researcher at the Helsinki University of Technology and obtained a Doctor of Science in Technology degree with distinction in the field of Naval Architecture. From 2010 to 2011, he worked as a post-doctoral fellow at Aalto University in Finland. In 2011, he joined the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway, and worked with the faculty there on sustainable Arctic Sea transportation. From 2013 to 2015, he held an adjunct professorship at the Ålesund University College in Norway, now part of NTNU. In 2014, while continuing as an adjunct professor with NTNU, which he did until 2018, Dr. Ehlers was appointed as a Professor for Design and Analysis of Ships and Offshore Structures at the Hamburg University of Technology, Germany. To date, he has supervised six doctoral candidates to completion of their degrees, 18 others are under his current supervision; additionally, 320 Master's theses have been successfully completed under his supervision.

Dr. Ehlers is an expert in consequence assessment for accidental events and in the field of material modeling for nonlinear finite element simulations. Additionally, he is developing new material models aimed at improving ice–structure interaction and design methods for ice-going vessels using small- and large-scale experimental research. Dr. Ehlers' work is concerned with the strength and overall structural response of ships subjected to extreme conditions. He combines optimization techniques with extensive assessment procedures to develop new concepts.

To date, Dr. Ehlers has more than 230 publications in his field of specialization. He currently serves as the Chairman of the International Ship Structures Committee V.2 on Experimental Methods. He is also a symposium co-coordinator for the Arctic Technology Symposium at ASME's annual OMAE conferences. He is a member of the Ocean, Offshore and Arctic Engineering Division's



**Fig. 2 Dr. Qing Xiao**

Executive Committee, a member of the Board of the German Association for Marine Technology, a conference co-chair for the International Conference on Ships and Offshore Structures, as well as a Board Member of the German Society of Naval Architects. He serves as an Associate Editor for the journal, *Marine Structures*, as one of the editors for *Ship Technology Research*, as an Associate Editor for the *ASME Journal of Offshore Mechanics and Arctic Engineering*, and as an Editorial Board member for *Ships and Offshore Structures*. He continues to serve as a reviewer for several international journals.

In Dr. Ehlers' words: "Decisions under uncertainty and based on sensor data are becoming more and more important. Intelligent learning approaches allow for fascinating solution paths. Ships and offshore structures continue to be designed for uncertain conditions and extreme loads. Therefore, sound and reliable methods are needed to assess these conditions in a format suitable for design as well as to assess their structural compliance to these uncertain conditions. A close link between simulation capabilities and experimental analysis—both in the laboratory and in full-scale tests—is essential to meet current and future requirements. The development of meaningful design methods is essential and the current trend toward development of high-fidelity models where fundamental analytics can serve a better purpose must be emphasized."

### Associate Editor, Dr. Qing Xiao

Dr. Qing Xiao (Fig. 2) is a Reader of Marine Hydrodynamics, since 2007, in the Department of Naval Architecture, Ocean and Marine Engineering at the University of Strathclyde, United Kingdom. Dr. Xiao has more than 20 years of research experience in the computational fluid dynamics (CFD) field with extensive experience ranging from numerical simulation of aerodynamic compressible flow to bio-mimetic and ocean renewable energy incompressible flow. Dr. Xiao graduated with a Ph.D. in

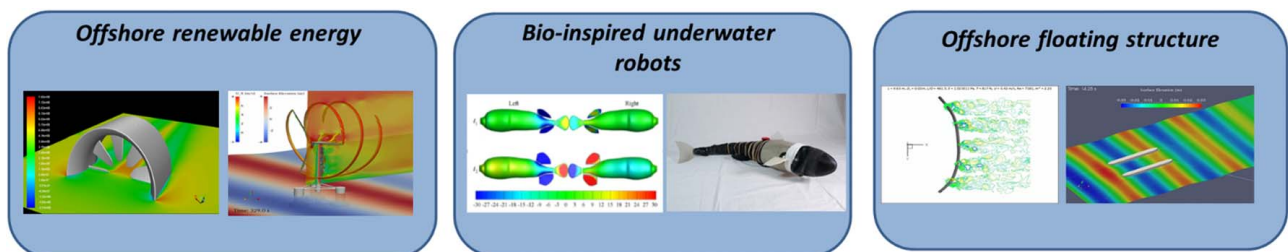
Mechanical Engineering from the National University of Singapore, where she studied, through measurements, the stability, and bifurcation of Taylor-Couette flow and investigated how "flow history" and Taylor-Couette geometries affect the flow regime development. Prior to joining the University of Strathclyde, Dr. Xiao worked as a Research Fellow and a Research Scientist at the Institute of High Performance Computing and the Temasek Laboratories in Singapore. During that time, a significant part of her research was devoted to developing several CFD codes that were successfully used to model several physiological flows as well as transonic and supersonic aerodynamics flows.

At Strathclyde, Dr. Xiao currently leads CFD and computational structural dynamics research groups. Her main research interests lie in the use of CFD for flow analysis in bio-inspired applications and in ocean renewable energy. Examples of her research activities include studies on the physical phenomena associated with flapping wings, swimming fish, bio-inspired underwater robots, flapping-related tidal energy devices, tidal turbines, fixed and floating wind turbines, and fluid-structure interaction phenomena such as vortex-induced vibration (see Fig. 3 for some examples of her work).

Over her academic career, Dr. Xiao has been the primary supervisor for eight Ph.D. graduates and she currently supervises seven additional Ph.D. students. She has published over 130 original research articles in peer-reviewed journals and conferences.

In addition to her extensive research activities, Dr. Xiao is currently a member of the International Towing Tank Conference Ocean Engineering Committee. She is also an Editorial Board member for the journal, *Ocean Engineering*. She is a senior member of the American Institute of Aeronautics and Astronautics. Dr. Xiao has been selected as a Grant Reviewer for the Engineering and Physical Sciences Research Council in the United Kingdom and for the Research Council of Norway.

In Dr. Xiao's words: "CFD has become and will continue to be an effective tool for exploring and verifying flow physics associated with ocean renewable energy devices and bio-inspired marine applications. With relatively low-cost but high-fidelity numerical modelling tools, we are able to replicate, perform and conduct successfully a wide range of parametric studies. Such studies are difficult to achieve in laboratory tests, which are limited in their ability to analyze, for instance, aquatic fish swimming behavior, including body stiffness and flow conditions. CFD, in contrast, has superior capabilities for conducting studies of bio-inspired soft robots with applications for Autonomous Underwater Vehicle (AUV) use. CFD also makes it possible to obtain accurate solutions for complex fluid- and structure-interaction problems." This is evidenced, for instance, by the utilization of an advanced numerical tool developed by Dr. Xiao's team to address regular and extreme wave and wind conditions for offshore floating wind turbines. Although calculation speeds for CFD still lag some industry analysis tools, Dr. Xiao strongly believes that this limitation will be overcome in the near future with rapid advancement in computer hardware. This will enable wider application of CFD to address complex ocean and offshore engineering problems.



**Fig. 3 Some examples of CFD-related studies undertaken by Dr. Qing Xiao**

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## Reference

- [1] Manuel, L., 2019, "ASME Journal of Offshore Mechanics and Arctic Engineering —An Editorial," *ASME J. Offshore Mech. Arct. Eng.*, **141**(2), p. 020201.