



Special Issue Reprint

Advanced Techniques for Design and Manufacturing in Marine Engineering

www.mdpi.com/books/reprint/4953

Edited by
Antonio Mancuso
Davide Tumino

ISBN 978-3-0365-3114-4 (Hardback)
ISBN 978-3-0365-3115-1 (PDF)



Modern engineering design processes are driven by the extensive use of numerical simulations; naval architecture and ocean engineering are no exception. Computational power has been improved over the last few decades; therefore, the integration of different tools such as CAD, FEM, CFD, and CAM has enabled complex modeling and manufacturing problems to be solved in a more feasible way. Classical naval design methodology can take advantage of this integration, giving rise to more robust designs in terms of shape, structural and hydrodynamic performances, and the manufacturing process. This Special Issue invites researchers and engineers from both academia and the industry to publish the latest progress in design and manufacturing techniques in marine engineering and to debate the current issues and future perspectives in this research area. Suitable topics for this issue include, but are not limited to, the following: CAD-based approaches for designing the hull and appendages of sailing and engine-powered boats and comparisons with traditional techniques; Finite element method applications to predict the structural performance of the whole boat or of a portion of it, with particular attention to the modeling of the material used; Embedded measurement systems for structural health monitoring; Determination of hydrodynamic efficiency using experimental, numerical, or semi-empiric methods for displacement and planning hulls; Topology optimization techniques to overcome traditional scantling criteria based on international standards; Applications of additive manufacturing to derive innovative shapes for internal reinforcements or sandwich hull structures.



Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/4953

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.