CONTENTS

Wind assisted propulsion systems and the role of a Ship Classification Society  1
U. Hollenbach, H. Hoffmeister and J. Wienke, DNV GL, Germany

Predicted fuel-savings for a Flettner rotor assisted tanker using computational fluid dynamics  9
L. Jones and M. Prince, Wolfson Unit M.T.I.A., UK
D. Hudson, University of Southampton, UK
J. Cocks, Shell Shipping and Maritime, UK

Performance predictions of wind propulsion systems using 3D CFD and route simulation  19
A. Persson, D.-Q. Li, F. Olsson and S. Werner, SSPA Sweden AB, Sweden
U. Dhomé, KTH Royal Institute of Technology, Sweden

Effect of leeway angle on propeller performance  31
J. J. A. Schot and R. Eggers, Maritime Research Institute (MARIN), the Netherlands

Performance verification of recent Rotor Sail installations  41
V. Paakkari and O. Valkeisenmäki, Norsepower, Finland

Dimensioning, design, manufacturing and performance assessment of Oceanwings Wingsail onboard Energy Observer  47
N. Sdez and M. Van Peteghem VPLP design, France

Ship data driven propulsion models & wind-based propulsion technology  55
J. E. Buckingham, D. R. Pearson and E. Storey, BMT Defence and Security UK Ltd, UK

Optimal routing of a wind-powered cargo vessel using ensemble weather forecast data  61
G. D. S. Davies and T. Waseda, The University of Tokyo, Japan

Seakeeping and manoeuvring for wind assisted ships  67
R. Eggers and A. S. Kisjes, Maritime Research Institute Netherlands, the Netherlands

Zero emissions sailing ship —Conceptual design  79
K. Ouchi, Ouchi Ocean Consultant Inc., Japan
T. Omiya, Mitsui O.S.K. Lines, Ltd., Japan

Transition pathways to very low emissions shipping: The Matisse-Ship model  83
J. Köhler, Fraunhofer ISI, Germany

The influence of a thorough physical model on the payback period of wind-assisted ships*  N/A
G. Bordogna and N. van der Kolk, TUDelft, the Netherlands

Financing ships with wind-assisted propulsion technologies  91
O. Schinas* and D. Metzger* **, *Hamburg School of Business Administration, Germany; **Helmut Schmidt University, Germany

Retrofitting of Flettner rotors – Results from sea trials of the general cargo ship “Fehn Pollux”  97
M. Vahs, University of Applied Sciences Emden / Leer, Germany

© 2019: The Royal Institution of Naval Architects
99kDW Bulker fitted with the Wind Challenger Sail*  N/A
N. Onishi and H. Fukushima, Mitsui O.S.K. Lines, Ltd., Japan
I. Aoki, Oshima Shipbuilding Co. Ltd, Japan
K. Ouchi, Ouchi Ocean Consultant Inc., Japan

Optimum application of wind assisted propulsion on existing Short Sea cargo vessels*  N/A
G. van der Bles, CONOSHIP, the Netherlands

Autonomous sailing vessels for Short Sea shipping  107
A. Chaplin, OneSails, UK

*Unavailable at time of going to press