

Tuesday, March 7, 2023 – Symposium Day #1 Eugenides Foundation Auditorium, Athens, Greece

08:15 – 09:00 REGISTRATION

09:00 – 09:20 Opening Addresses

A. Papanikolaou, *SOME 2023 Chair*
J. Kokarakis, *SNAME Greek Section Chair*
R. Spaulding, *SNAME President*
I. Plakiotakis, *Minister of Maritime Affairs and Insular Policy*
G. Pateras, *President of Hellenic Chamber of Shipping*

09:20 – 10:00 Keynote Speech I

Shipping Decarbonization: A Glimmer of Hope?
H. Psaraftis, *Professor, Technical University of Denmark*

10:00 – 11:00 Industry Panel & Discussion No.1: Women in Maritime

Moderator: *Niki Kalogiratou, Chief Communications Officer, Capital Ship Management Corp*
Joanna Koukouli, Co-Global Claims & Managing Director, The American P&I Club
Maria Kyratsoudi, Business Development Manager, American Bureau of Shipping (ABS)
Irene Notias, Country Manager, Sing Fuels Pte Ltd (Hellas)
Matina Petrou, South Europe New Constructions Sales Lead, Lloyd's Register

11:00 – 11:20 Coffee Break

11:20 – 12:35 Session No.1: Emission Control, CII Compliance

Session Chair: L. *Kaiktsis*, *National Technical University of Athens*

Session Co-Chair: G. *Dimopoulos*, *National Technical University of Athens*

11:20 – 11:35

Monitoring Shipping Emissions with Various Techniques Towards Ensuring Compliance to the New Regulations: The SCIPPER Project

¹L. Ntziachristos, ¹S. Mamarikas, ²R. Verbeek, ¹A. Grigoriadis | ¹*Aristotle University of Thessaloniki*, ²*TNO*

11:35 – 11:50

From STEAM to Machine: Emissions Control in the Shipping 4.0 Era

^{1,2,4}D. Kaklis, ¹T. Varelas, ²I. Varlamis, ³P. Eirinakis, ⁴G. Giannakopoulos, ⁴C. Spyropoulos |

¹*Danaos Research Center*, ²*Harokopio University of Athens*, ³*University of Piraeus*, ⁴*NCSR Demokritos*

11:50 – 12:05

Concept Assessment of a Marine Carbon Capture System for Vessel Regulatory Lifetime Extension

¹I. Beltsidis, ²C. Georgopoulou, ^{1,2}G. Dimopoulos, ²L. Koukouloupoulos |

¹*National Technical University of Athens*, ²*DNV Maritime R&D and Advisory*

12:05 – 12:20

CII Compliance: Effects of Operational and Technological Measures on Current Levels and Time Development of Calculated CII

¹A. Trakakis, ¹N. Daremas, ²M. Papatheodorou, ³S. Chatzinikolaou, ⁴C. Papadopoulos, ⁴L. Kaiktsis |

¹*RINA Classification Society*, ²*ShipReality Inc.*, ³*University of Piraeus*, ⁴*National Technical University of Athens*

12:20 – 12:35

Questions & Discussion

12:35 – 12:50 Platinum Sponsor Presentation

Alba Business School

12:50 – 13:50 Light Lunch Break – Sponsored by Polembros Shipping

13:50 – 15:05 Session No.2: Decarbonization, Alternative Fuels

Session Chair: G. Dimopoulos, *National Technical University of Athens*

Session Co-Chair: L. Kaiktsis, *National Technical University of Athens*

13:50 – 14:05

Handling of Ammonia Accidental Fuel Leakages on Ships

M. Bucelli, B. Johnsen, I. Hjorth | *SINTEF Energy Research AS*

14:05 – 14:20

The Potential of Methanol and Ammonia to Decarbonize Shipping: Impact on GHG and Other Pollutants

G. Voniati, A. Dimaratos, S. Kyklis, G. Koltsakis, L. Ntziachristos | *Aristotle University of Thessaloniki*

14:20 – 14:35

Modeling Intermediate and Alternative Fuel Emissions in Large Two-stroke Engines: Towards an Accurate Assessment of Decarbonization Impact

¹V. Kostoulas, ¹G. Pontikakos, ²I. Sklias, ²A. Karvountzis-Kontakiotis, ¹L. Kaiktsis |

¹National Technical University of Athens, ²Winterthur Gas & Diesel (WinGD)

14:35 – 14:50

Life-cycle Assessment and Costing of Alternative Fuels and Emission Reduction Technologies

N. Ventikos, P. Sotiralis, M. Annetis | *National Technical University of Athens*

14:50 – 15:05

Questions & Discussion

15:05 – 15:20 Coffee Break

15:20 – 16:35 Session No.3: Digital Twins, Performance Optimization

Session Chair: A. Trakakis, *RINA Classification Society*

Session Co-Chair: A. Papanikolaou, *National Technical University of Athens*

15:20 – 15:35

Estimation of Wind, Waves and Fouling Effect on Ships from Full Scale and Hindcast Data

D. Georgousis, K. Nielsen, J. Petersen, A. Adveev, E. Arvanitaki, S. Tuymetov |

Vessel Performance Solutions ApS

15:35 – 15:50

Integrated Ship Energy Flowchart: A Digital Twin to Mitigate GHG Emissions

E. Yfantis, C. Ioannou, A. Paradeisiotis | *Cyprus Marine & Maritime Institute*

15:50 – 16:05

Time Series Anomaly Detection and Forecasting for Digital Twins in Green Shipping

L. Avgeridis, K. Lentzos, D. Skoutas, I. Emiris | *ATHENA Research Center*

16:05 – 16:20

The Development of an Accurate Digital Twin for Operational Performance Optimization

¹S. Harries, ²J. Brunswig, ²S. Gatchell, ¹S. Hauschulz, ²A. Schumacher, ¹F. Thies, ²J. Marzi |

¹FRIENDSHIP SYSTEMS, ²Hamburg Ship Model Basin (HSVA)

16:20 – 16:35

Questions & Discussion

16:35 – 16:40 Day 1 Closing Remarks

A. Papanikolaou, *SOME 2023 Chair*

Wednesday, March 8, 2023 – Symposium Day #2 Eugenides Foundation Auditorium, Athens, Greece

09:00 – 09:05 Day 2 Opening Remarks

A. Papanikolaou, *SOME 2023 Chair*

09:05 – 09:45 Keynote Speech II

Maritime Training in Soft or Hard Skills?

S. Hatzigrigoris, *Advanced Engineering Services*

09:45 – 11:00 Session No.4: Ship Resistance & Propulsion for Green Shipping

Session Chair: K. *Belibassakis*, *National Technical University of Athens*

Session Co-Chair: G. *Zaraphonitis*, *National Technical University of Athens*

09:45 – 10:00

Recent Progress on the Transparent Prediction of the Added Resistance and Powering of a Ship in Waves

¹S. Liu, ²A. Papanikolaou | ¹*Nanyang Technological University, Singapore*, ²*National Technical University of Athens*

10:00 – 10:15

Numerical Analysis of the Impact of the Bow Thruster Opening on a Fast Catamaran's Resistance

S. Duman, E. Boulougouris, M. Z. Aung, X. Xu, A. Nazemian | *Strathclyde University*

10:15 – 10:30

Extensive Hydrodynamic Optimization Studies for a Series of Small Electric Catamaran Ferries

A. Kanellopoulou, G. Zaraphonitis, G. Grigoropoulos, D. Liarakapis | *National Technical University of Athens*

10:30 – 10:45

Medstraum: Design and Operation of the First Zero-emission Fast Catamaran

¹A. Papanikolaou, ²M. Dahle, ³E. Tolo, ⁴Y. Xing-Kaeding, ⁵A. Prinz, ⁶F. Jensen, ⁷E. Boulougouris,

¹A. Kanellopoulou, ¹G. Zaraphonitis, ⁸C. Jürgehake, ⁸T. Seidenberg |

¹*National Technical University of Athens*, ²*Kolumbus AS*, ³*Fjellstrand AS*, ⁴*Hamburgische Schiffbau-Versuchsanstalt GmbH*, ⁵*Servogear*, ⁶*Wärtsilä*, ⁷*University of Strathclyde*, ⁸*Fraunhofer IEM*

10:45 – 11:00

Questions & Discussion

11:00 – 11:20 Coffee Break

11:20 – 11:30 Platinum Sponsor Presentation

MAN Energy Solutions

11:30 – 12:45 Session No. 5: Ship Propulsion, Autonomous Shipping

Session Chair: T. Gerostathis, *University of West Attica*

Session Co-Chair: D. Pagonis, *University of West Attica*

11:30 – 11:45 Energy-minimizing Kinematics for Actively Morphing Flapping-foil Thrusters

D. Anevlavi, E. Filippas, K. Belibassakis | *National Technical University of Athens*

11:45 – 12:00 Augmenting Ship Propulsion in Waves by Flapping-foil Thrusters

K. Belibassakis | *National Technical University of Athens*

12:00 – 12:15 Facing Challenges Raised in Designing Battery Based Green Ships

J. Prousalidis, E. Sofras, P. Vlachos | *National Technical University of Athens*

12:15 – 12:30 The Logistics of Autonomous Shipping and the AEGIS Project

¹H. Psaraftis, ²T. Zis, ¹M. Reche Vilanova | ¹*Technical University of Denmark*, ²*Cyprus University of Technology*

12:30 – 12:45 Questions & Discussion

12:45 – 13:30 Light Lunch Break - Sponsored by Polembros Shipping

13:30 – 14:30 Industry Panel & Discussion No.2: Electrification in Shipping

Moderator: J. Prousalidis, *National Technical University of Athens*

A. Papanikolaou, *National Technical University of Athens*: The “Medstraum” Project: Design and Operation of the First Zero Emission High-Speed Catamaran

G. Dimopoulos, *National Technical University of Athens*: Overview of Electric Driven Ships - Some Lessons Learnt

P. Scialla, *LRS*: Implementing Battery Swapping in Battery Powered Ships: The “Current Direct” Project

C. Gerarakakis, *PPA*: The Ports Supporting the Electrification of Ships: Studying the Implementation of Shore-to-Ship Connection in the Port of Piraeus

A. Manos, *HEDNO SA*: The Initiatives of the Hellenic Power Distribution Network Operator to Support the Electrification of the Greek Maritime Sector

14:30 – 16:00 Session No.6: Ship Design and Engineering, Marine Pollution

Session Chair: *C. Leontopoulos, ABS Classification Society*

Session Co-Chair: *C. Papadopoulos, National Technical University of Athens*

14:30 – 14:45

High Fidelity Finite Element Modeling of Complex Ship Structures: The Particular Case of a Passenger Vessel

P. Ntaoularis, N. Sillionis, K. Anyfantis | *National Technical University of Athens*

14:45 – 15:00

Solution Space and Optimality Concerns for the Shafting System Alignment of a Typical Bulk Carrier

P. Theofilis, G. Rossopoulos, C. Papadopoulos | *National Technical University of Athens*

15:00 – 15:15

Dilating Disk Valve - A New High Efficiency Control Valve

J. Guedesse, B. Re, W. Velkoff | *Curtiss-Wright – Target Rock*

15:15 – 15:30

Microplastics and their Impact on the Marine Environment

¹J. Kokarakis, ²E. Kokarakis, ³E. Ladakis, ⁴H. Petrakakos | ¹*Bureau Veritas*,

²*Michigan State University*, ³*National Kapodistrian University of Athens*, ⁴*P&P Marine Consultants Inc.*

15:30– 16:00

Questions & Discussion

16:00 – 16:15 Coffee Break

16:15 – 18:15 Session No.7: Data Science, Real-time Monitoring

Session Chair: C. Papadopoulos, *National Technical University of Athens*

Session Co-Chair: A. Papanikolaou, *National Technical University of Athens*

16:15 – 16:30

Challenges on Taking Advantage of High Frequency Data Analytics to Address Environmental Challenges in Maritime Sector

¹S. Katsikas, ¹G. Manditsios, ²F. Dalmiras, ¹G. Sakalis, ¹G. Antonopoulos, ¹A. Doulgeridis, ²D. Mouzakis |

¹Metis Cybertechnology S.A., ²Andriaki Shipping Co. Ltd.

16:30 – 16:45

Failure Knowledge Graphs

B. Vučinić | *MA-CAD*

16:45 – 17:00

In-cylinder Pressure Prediction for Marine Engines Using Machine Learning

C. Patil, G. Theotokatos, K. Milioulis | *University of Strathclyde*

17:00 – 17:15

Fault Classification and Diagnosis for Rotating Equipment Using Machine Learning Algorithms

D. Emiris | *University of Piraeus*

17:15 – 17:30

From Preventive to Predictive Maintenance of Ship Hulls: The Role of SHM

N. Sillionis, K. Anyfantis | *National Technical University of Athens*

17:30 – 17:45

An Investigation on the Effect of Sea Currents on Weather Routing Optimisation

A. Kytariolou, N. Themelis | *National Technical University of Athens*

17:45 – 18:00

Short-term Optimal Ship Routing via Reliable Satellite Current Data

A. Ioannou, E. Moschos, B. Le Vu, A. Stegner | *AMPHITRITE, X-Novation Center*

18:00 – 18:15

Questions & Discussion

18:15 – 18:20 Closing Remarks

A. Papanikolaou, *SOME 2023 Chair*