

## 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 – Sponsored by DZ Marine Service (HK) Industrial Ltd

**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**

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

**11:35 – 11:50**

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

<sup>1,2,4</sup>D. Kaklis, <sup>1</sup>T. Varelas, <sup>2</sup>I. Varlamis, <sup>3</sup>P. Eirinakis, <sup>4</sup>G. Giannakopoulos, <sup>4</sup>C. Spyropoulos |

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

**11:50 – 12:05**

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

<sup>1</sup>I. Beltsidis, <sup>2</sup>C. Georgopoulou, <sup>1,2</sup>G. Dimopoulos, <sup>2</sup>L. Koukoulopoulos |

<sup>1</sup>*National Technical University of Athens*, <sup>2</sup>*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**

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

<sup>1</sup>*RINA Classification Society*, <sup>2</sup>*ShipReality Inc.*, <sup>3</sup>*University of Piraeus*, <sup>4</sup>*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**

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

<sup>1</sup>National Technical University of Athens, <sup>2</sup>Winterthur 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 – Sponsored by DZ Marine Service (HK) Industrial Ltd**

**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**

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

<sup>1</sup>FRIENDSHIP SYSTEMS, <sup>2</sup>Hamburg 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**

<sup>1</sup>S. Liu, <sup>2</sup>A. Papanikolaou | <sup>1</sup>*Nanyang Technological University, Singapore*, <sup>2</sup>*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

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

<sup>1</sup>A. Papanikolaou, <sup>2</sup>M. Dahle, <sup>3</sup>E. Tolo, <sup>4</sup>Y. Xing-Kaeding, <sup>5</sup>A. Prinz, <sup>6</sup>F. Jenset, <sup>7</sup>E. Boulougouris,

<sup>1</sup>A. Kanellopoulou, <sup>1</sup>G. Zaraphonitis, <sup>8</sup>C. Jürgenhake, <sup>8</sup>T. Seidenberg |

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

10:45 – 11:00

**Questions & Discussion**

11:00 – 11:20 Coffee Break – Sponsored by DZ Marine Service (HK) Industrial Ltd

**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**

<sup>1</sup>H. Psaraftis, <sup>2</sup>T. Zis, <sup>1</sup>M. Reche Vilanova | <sup>1</sup>*Technical University of Denmark*, <sup>2</sup>*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. Gerakarakis**, *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**

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

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

**15:30– 16:00**

**Questions & Discussion**

**16:00 – 16:15 Coffee Break – Sponsored by DZ Marine Service (HK) Industrial Ltd**

**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**

<sup>1</sup>S. Katsikas, <sup>1</sup>G. Manditsios, <sup>2</sup>F. Dalmiras, <sup>1</sup>G. Sakalis, <sup>1</sup>G. Antonopoulos, <sup>1</sup>A. Doulgeridis, <sup>2</sup>D. Mouzakis |  
<sup>1</sup>Metis Cybertechnology S.A., <sup>2</sup>Andriaki 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*