

## Monday June 3, 2024

Room	Amstel 1	Amstel 2 / 3	Theems (Thames)
09:00-09:30	<p style="text-align: center;"><b>Welcome and Introduction</b></p> <p>Stein Ove Erikstad: Chair, International Committee Austin A. Kana: Chair, Local Organizing Committee Bart van Oers: Chair, venue host</p>	-	-
9:30 – 10:30	<p style="text-align: center;"><b>Ship Design in the Era of Digital Transition - A State-of-the-Art Report</b></p> <p>Apostolos Papanikolaou, Evangelos Boulougouris, Stein-Ove Erikstad, Stefan Harries and Austin A. Kana</p>	-	-
10:30–11:00	Break		
	<p style="text-align: center;"><b>Design Methodology: Network system design</b></p> <p>Chair: David Singer Co-Chair: Deborah Noffke</p>	<p style="text-align: center;"><b>Design Methodology: Design and Production</b></p> <p>Chair: Myung-Il Roh Co-Chair: Miguel Calvache</p>	<p style="text-align: center;"><b>Digital Transition: Digital Twins</b></p> <p>Chair: Taiga Mitsuyuki Co-Chair: Ben Noble</p>
11:00-11:30	<p style="text-align: center;"><b>Operational Matrix Framework for Energy Balance Analysis for Early Stage Design of Complex Vessels</b></p> <p>M.H. Mukti, R.J. Pawling, D.J. Andrews</p>	<p style="text-align: center;"><b>A Service Blueprint Approach in Ship Building Activity Mapping</b></p> <p>Yong Se Kim, Junsong He, Ludmila Seppälä</p>	<p style="text-align: center;"><b>MariData – Digital Twin for Optimal Vessel Operations Impacting Ship Design</b></p> <p>Jochen Marzi, Stefan Harries, Benjamin Schwarz, Martin Scharf, Katharina Demmich, Martin Pontius</p>
11:30-12:00	<p style="text-align: center;"><b>Supplementing Industry-Specific Dynamic Positioning Requirements to Network Theory</b></p> <p>E.L. Scheffers, P. de Vos</p>	<p style="text-align: center;"><b>Practical implementation of configuration management in the context of concept ship design – first lessons</b></p> <p>S. Bedert, R. Hoogenboom</p>	<p style="text-align: center;"><b>Digital Twin-Enabled Response Function Analysis: A Synthetic Approach to Ship's Propulsion System Assessment</b></p> <p>Oleksiy Bondarenko, Yasushi Kitagawa</p>
12:00-12:30	<p style="text-align: center;"><b>Statistical Reliability Analysis of Marine Systems with varied Levels of Redundancy</b></p> <p>Andrea Ware, Matthew Collette</p>	<p style="text-align: center;"><b>Data models in ship design and construction – insights from 4D BIM</b></p> <p>Janica A. Bronson, Ícaro A. Fonseca, Henrique M. Gaspar, Fernando H.P. Luz</p>	<p style="text-align: center;"><b>Knowledge Graphs underpinning ship digital twins for decarbonisation options assessment</b></p> <p>Bill Karakostas, Antonis Antonopoulos</p>
12:30-13:00	<p style="text-align: center;"><b>Quantifying Flexibility for a Ship Power and Energy System Design</b></p> <p>Drake Platenberg, Julie Chalfant, Warren Seering</p>	<p style="text-align: center;"><b>Defining a Framework for Implementing the Circular Economy Principles into Ship Design</b></p> <p>Elise Hoffmann, Jeroen Pruyin</p>	<p style="text-align: center;"><b>Retrofit modeling for green ships</b></p> <p>Julien J.M. Hermans, Austin A. Kana</p>
13:00–14:00	Lunch		

	<p align="center"><b>Novel Concepts</b> Chair: Per Olaf Brett Co-Chair: Jelmer Pentinga</p>	<p align="center"><b>Novel Concepts: Naval Ships 1</b> Chair: Kelly Cooper Co-Chair: Micha Stam</p>	<p align="center"><b>Digital Transition: Machine Learning and AI</b> Chair: Patrik Rautaheimo Co-Chair: Richmond Anku</p>
14:00-14:30	<p><b>A comparative analysis of side and stern installation of a monopile lifting operation using a heavy lift crane vessel</b> Anke Marij Elzinga, J.D. Stroo, and Austin Kana</p>	<p><b>Grounded Ambitions: A Lean Approach for Assessing Beachability in Concept Design</b> Austin Shaeffer, Sam Murphy, Tim McIntyre, Alex Wiggins</p>	<p><b>Comparison and Evaluation of Learning Capabilities of Deep Learning Methods for Predicting Ship Motions</b> Mingyang Zhang, Cong Liu, Pentti Kujala, Spyros Hirdaris</p>
14:30-15:00	<p><b>Effect of Platform Configurations and Environmental Conditions on the Performance of Floating Solar Photovoltaic Structures</b> M I Jifaturrohman, T Putranto, D Setyawan, L Huang, I K A P Utama</p>	<p><b>From Functional Arrangement to Vulnerability Assessment: Automating Naval Ship Design for Enhanced Survivability Analysis</b> H.J. den Ouden, R. van der Wal</p>	<p><b>A Novel Application of Tensor Networks for the Investigation of Design Optimization Tools in the Marine Domain</b> Connor W. Arrigan, Alexander D. Manohar, Matthew D. Collette, David J. Singer</p>
15:00-15:30	<p><b>Special ship design and ocean space multi-use synergies</b> Sigurd Solheim Pettersen, Arnstein Eknes</p>	<p><b>The method to navigate the forward and backward path of a towing tractor for transporting aircraft</b> Ki-Su Kim, Kwang-Phil Park, Sang-Hun Kang</p>	<p><b>Leveraging the concept of information entropy to improve a multi-fidelity design framework for early-stage design exploration of complex vessels</b> Nikoleta Dimitra Charisi, Hans Hopman, Austin Kana</p>
15:30–16:00	Break		
	<p><b>Energy Transition: On-board energy generation</b> Chair: Richard Birmingham Co-Chair: Jacopo Ciappina</p>	<p><b>Energy Transition</b> Chair: Julie Chalfant Co-Chair: Jelmer Pentinga</p>	<p><b>Regulations: Ice</b> Chair: David Andrews Co-Chair: Jitske Weersma</p>
16:00-16:30	<p><b>Optimization of Ship Design for the Effect of Wind Propulsion</b> Timoleon Plessas, Apostolos Papanikolaou</p>	<p><b>Beyond Jack-Ups: A Moonshot for Future Offshore Wind Turbine Installation Vessels for an Uncertain Market</b> J.J. de Ridder, J.D. Stroo, A.A. Kana</p>	<p><b>System level simulation of the winter navigation in the Baltic Sea</b> Pentti Kujala, Ketki Kulkarni, Aleksandr Kondratenko, Lianliang Lu, Casper Winberg, Fang Li, Mashrura Musharraf</p>
16:30-17:00	<p><b>The impact of hydro generation on board large sailing yachts</b> Marijn van der Plas, Wick Hillege, Peter de Vos</p>	<p><b>Hybrid and Alternative Fuel Power Management Systems in Ships – Multi-Criteria Decision-Making Assessment</b> Amin Nazemian, Evangelos Boulougouris, Sarath Krishnan Melemadom</p>	<p><b>A time-dependent ice accretion model for trap-setting fishing vessels with filigree structures</b> Thomas DeNucci, Daniel Brahan, Peter McGonagle, Colman Schofield, Delaney Taplin-Patterson</p>
17:00	Closure of Technical Sessions		
18:00–19:00	Canal Boat Tour		

## Tuesday June 4, 2024

Room	Amstel 1	Amstel 2	Amstel 3	Theems (Thames)
09:00-09:30	<b>How geopolitics are influencing ship design and the shipbuilding industry</b> Michel Janssen, Deputy Director of Department Maritime Systems, Netherlands Materiel and IT Command (COMMIT)	-	-	-
09:30-10:00	<b>The role of advanced simulators in crew-centered operational ship design</b> Dr. ir. Bas Buchner, President, MARIN	-	-	-
10:00-10:30	<b>Managing the complexity of systems integration</b> Peter van Terwisga, Director Research, Development & Innovation, Damen Naval	-	-	-
10:30-11:00	Break			
	<b>Design Methodology: Design Philosophy</b> Chair: Taiga Mitsuyuki Co-chair: Jelmer Pentinga	<b>Energy Transition: Future Fuel Concepts</b> Chair: Myung-Il Roh Co-chair: Deborah Noffke	<b>Digital Transition</b> Chair: Apostolos Papanikolaou Co-chair: Jacopo Ciappina	<b>Novel Concepts: Naval Vessels 2</b> Chair: Hans Hopman Co-chair: Jakub Orłowski
11:00-11:30	<b>What is a ship design firm, really?</b> Benjamin Lagemann, Randi Lunnan, Per Olaf Brett, Jose Jorge Garcia Agis, Astrid Vamrak Solheim, Stein Ove Erikstad	<b>The Potential of Next Generation Nuclear Power for Marine Propulsion of Commercial Vessels</b> Niels de Vries, Koen Houtkoop, Zeno Leurs	<b>Industry 5.0: Transforming ship design through human-centered approach</b> Ludmila Seppälä	<b>An Overview of Digital Engineering Methods for Platform Integration of Power and Energy Systems</b> Robert M. Ames, Norbert H. Doerry, Madeleine M. Koerner, Mark A. Parsons
11:30-12:00	<b>New Conventions: Intentional Implementation of Set-Based Design Leveraging Limited Point-Based Approaches to Recognize Complex Project Realities</b> Jonathan E Page, Warren P Seering, Christopher J Higgins, Drake M Platenberg	<b>Nuclear fusion as unlimited power source for ships</b> E.S. van Rheenen, J.P.K.W. Frankemölle, E.L. Scheffers	<b>C-ShipGen: A Conditional Guided Diffusion Model for Parametric Ship Hull Design</b> Noah J. Bagazinski, Faez Ahmed	<b>Naval Wargaming as a Requirements Elucidation Tool for Warship Design Teams</b> Nick Bradbeer, David Manley
12:00-12:30	<b>Closing the gap between early and detailed ship design models</b> Herbert Koelman, Bastiaan N. Veelo, Ludmila Seppälä, Paul Filius	<b>Integration of the methanol power propulsion and energy systems' temporal uncertainties in a Markov decision process framework</b> Apostolos S. Souflis – Rigas, Jeroen F.J. Pruyn, Austin A. Kana	<b>A novel usage of rough sets in design of data fusion systems</b> Brendan Sulkowski, Matthew Collette	<b>Capability driven vulnerability analysis of a naval combatant</b> Michal Czap, Demi van Megen, Koen Droste
12:30-13:00	<b>The Importance of Ontological Commitment and Linguistics in Relation to the Elucidation of Design Requirements</b> Connor W. Arrigan, Morgan C. Parker, David J. Singer	<b>Exploring the opportunities of Generative Artificial Intelligence in Concept Ship Design</b> Andrea Grech La Rosa, Peter Simpson, Ryan Zammit	<b>Enhancing Hull Form Design for Robust Efficiency: A Data-Enhanced Simulation-Based Design Approach</b> Yasuo Ichinose, Tomoyuki Taniguchi	<b>Integration of the Power Corridor Concept in the Early-Stage Design of Electric Naval Vessels using Mathematical Design Models</b> Giorgio Trincas, Luca Braidotti, Andrea Vicenzutti, Andrea Alessia Tavagnutti, Chathan M. Cooke, Julie Chalfant, Vittorio Bucci, Chryssostomos Chryssostomidis, Giorgio Sulligoi

13:00–14:00	<b>Lunch</b>			
	<b>Design Methodology</b> Chair: David Andrews Co-Chair: Micha Stam	<b>Design Methodology: Traditional Ship Design</b> Chair: Stefan Krueger Co-chair: Jacopo Ciappina	<b>Design Methodology: Naval Vessels (Activity)</b> Chair: Nick Bradbeer Chair: David Manley	<b>Novel Concepts:</b> Chair: Julie Chalfant Co-chair: Jelmer Pentinga
14:00-14:30	<b>Characterizing three-dimensional general arrangements and distributed system configurations utilizing an architecturally normalized current representation</b> Matthew Dowling, Willis Tarn, Alexander D. Manohar, Connor W. Arrigan, David J. Singer	<b>Digital Sailmate: Enhancing Safety through Low-Cost Stability Monitoring in Artisanal Fishing</b> Nathan Manojlovic Smith, Priscila Melo, Simon Benson	<b>Naval Wargaming demonstration and activity</b> Nick Bradbeer	<b>Conceptual design of shore station for an innovative waste collecting vessel</b> Niklas K., Pruszko H., Reichel M., Jaworska J., Marcinkiewicz E.
14:30-15:00	<b>Early Marine Systems' Design—Cracking the wicked problem - The case of a novel biomass harvesting vessel</b> Per Olaf Brett, Jose Jorge Garcia Agis, Benjamin Lagemann	<b>Empowering Adolescents through Hands-on Wooden boatbuilding Training: Adapting Javanese Wooden Boat Design and Construction for a Teenage-Friendly Training Experience</b> Daniel M. Rosyid and Samodra		<b>Concept Design of Typhoon Power Generation Ship Using System Simulation</b> Taiga Mitsuyuki, Haruki Ebihara, Shunsuke Kado
15:00-15:30	<b>Early Risk Quantification Strategy for Design Space Reduction Decisions in Set-Based Design</b> Joseph Van Houten, Austin Kana, David Singer, Matthew Collette	<b>Flipflop: Circular economy design inspiration from a recycled plastic sailing dhow</b> Simon Benson, Ali Skanda, Hassan Shafii, Katharina Elleke, Simon Scott-Harden, Nathan Smith, Richard Birmingham, Dipesh Pabari		<b>Utilizing amphibious AGVs to optimize container transshipment for deep sea and hinterland operations</b> Abhishek Rajaram, Lavanya Meherishi, Jovana Jovanova, Andrea Coraddu
15:30-16:00	<b>Break</b>			
	<b>Design Methodology</b> Chair: Richard Birmingham Co-chair: Ben Noble	<b>Energy Transition</b> Chair: Per Olaf Brett Co-chair: Jelmer Pentinga	<b>Design Methodology: Naval Vessels (Activity)</b> Chair: Nick Bradbeer Chair: David Manley	<b>Novel Concepts: Offshore Wind Service vessels</b> Chair: Stein Ove Erikstad Co-chair: Vasileios Sideris
16:00-16:30	<b>Human digital twins to inform ship design</b> Nicole Catherine Taylor, Anriette Bekker, Karel Kruger	<b>Using a design exploration model to assess the global techno-economic feasibility of far offshore green hydrogen production towards 2050</b> T. Melles, J.F.J. Pruyn, J.L. Gelling, J.J. de Wilde	<b>Naval Wargaming demonstration and activity</b> Nick Bradbeer	<b>Design of Floating Installation Vessel for Offshore Installation of Floating Offshore Wind Turbines</b> Karl H. Halse, Sunghun Hong, Behfar Ataei, Ting Liu, Shuai Yuan, Hans P. Hildre
16:30-17:00	<b>Improve Ship Design Success by Utilising Proactive Elicitation to Enhance Communication Among Diverse Stakeholders</b> Chengfeng Ou, David Trodden, Serkan Turnkmen	<b>Ship system design changes for the transition to hydrogen carriers</b> E.S. van Rheenen, J.T. Padding, A.A. Kana, K. Visser		<b>A Fundamental Study on Inter-Array Cabling Methods Between Two Floating Offshore Wind Turbines in Shallow Waters</b> Kangho Kim, Chunsik Shim, Min Suk Kim, Daseul Jeong
17.00	Closure of technical sessions			

## Wednesday June 5, 2024

Room	Amstel 1	Amstel 2	Amstel 3	Theems (Thames)
09:00-09:30	<b>The impact of maritime decarbonization on ship design: State-of-the-Art Report</b> Thomas A. McKenney, University of Michigan	-	-	-
09:30-10:00	<b>The Expanding Scope of Ship Design Practice</b> David Andrews, University College London	-	-	-
10:00-10:30	<b>The History of Dutch Ship Design</b> Jeroen van der Vliet, Head of Collections Netherlands Maritime Museum	-	-	-
10:30-11:00	Break			
	<b>Regulations: Passenger Ships</b> Chair: David Singer Co-chair: Deborah Noffke	<b>Design Methodology</b> Chair: Stein Ove Erikstad Co-chair: Jaap Marcus	<b>Design Methodology: Pipe Routing</b> Chair: Taiga Mitsuyuki Co-chair: Marijn van Giesen	<b>Energy Transition</b> Chair: Per Olaf Brett Co-chair: Jesper Zwaginga
11:00-11:30	<b>Integrated infection and crowd behaviour model for COVID-19 infection risk assessment onboard large passenger vessels</b> N.A. de Haan, A.A. Kana, B. Atasoy	<b>Wither now the Design Building Block (DBB) Approach</b> Henrique M. Gaspar, Icaro A. Fonseca, David J. Andrews	<b>Methods for Graph Conversion and Pattern Recognition for P&amp;IDs</b> Min-Chul Kong, Myung-Il Roh, In-Chang Yeo, In-Su Han, Dongki Min, Dongguen Jeong	<b>Overall Scheme Design of Green Typical Demonstration Ship Types under the Background of Double-Carbon Policy</b> ZhengChen Lian, LiZheng Wang
11:30-12:00	<b>The importance of first-principles tools for safety enhancement in the design of passenger ships in the case of flooding events</b> Dracos Vassalos, Francesco Mauro, Donald Paterson, Ahmed Salem	<b>Modular Ship Design: Rapid Prototyping and Enhancing Efficiency through Design Modules</b> Minjoo Choi, Jaekyeong Lee	<b>Piping layout integrated in ship design and stability assessment</b> Herbert Koelman	<b>A review of the state-of-the-art Sustainable and Climate-resilient inland waterway vessels</b> Richmond Selase Anku, Jeroen Pruyn, Cornel Thill
12:00-12:30	<b>Satisfaction of passengers - process comparison between two different cruise ship classes</b> Sabina Akter, Jani Romanoff	<b>Seeing a Sea of Ships - Exploring the Ship Design Space in the Digital Domain</b> Henrique M. Gaspar, Yasuo Ichinose, Kazuo Nishimoto	<b>An Automated Method for Pipe Routing in Ship Unit Modules</b> Jisang Ha, Myung-Il Roh, Min-Chul Kong, Mijin Kim, Jeoungyoun Kim, Nam-Kug Ku	<b>Functional analysis of speed, battery pack capacities and chargers of small electric ships – Adriatic Sea case study</b> Vedran Slapnicar, Jerolim Andric, Smiljko Rudan
12:30-13:00	<b>Modernisation of Domestic Ro-Ro Passenger Ships Operating in the Philippines</b> Dracos Vassalos, Donald Paterson, Francesco Mauro, Ahmed Salem	-	<b>Sailing through uncertainty: ship pipe routing and the energy transition</b> Berend Markhorst, Joost Berkhout, Alessandro Zocca, Jeroen Pruyn, Rob van der Mei	<b>Technical and economic feasibility study on reducing CO2 emissions of Dutch beam trawlers</b> Arnoud de Bruin, Walter van Harberden, Austin A. Kana
13:00 – 14:30	Lunch			

	<b>Energy Transition</b> Chair: Patrik Rautaheimo Co-chair: Willem Toet	<b>Design Methodology</b> Chair: Kelly Cooper Co-chair: Jesper Zwaginga	<b>Design Methodology and Autonomous Transition</b> Chair: David Andrews Co-chair: Marijn van Giesen	<b>Design Methodology: Hydrodynamics</b> Chair: Stefan Krueger Co-chair: Richmond Anku
14:30-15:00	<b>Simulation Method of Decarbonization of International Shipping for Evaluating the Impact of Possible Regulation Limiting GHG Intensity of Marine Fuels</b> Shinnosuke Wanaka, Kazuo Hiekata, Tomohito Takeuchi, Masanobu Taniguchi	<b>Improving Ship Response Estimation using Neural Networks</b> Samuel J. Edwards, Michael Levine	<b>Development of a Novel Codesign Method for Use in Early-Stage High-Performance Craft Design</b> Evan J. Branson, Arend Vyn, Kevin Maki, David J. Singer	<b>Hydrodynamics of an Underwater Vehicle Near the Sea Surface</b> Mavrakos S. Anargyros, Konispoliatis N. Dimitrios, Rossides George, Mavrakos A. Spyridon
15:00-15:30	<b>Ammonia bunker vessel: ship design for energy transition</b> Friederike Dahlke-Wallat, Katja Hoyer, Ljubisav Isidorović, Sophie Martens, Nathalie Reinach, Benjamin Friedhoff, Igor Bačkalov	<b>Operational data for sea margin calculations in early ship design</b> Sietske de Geus-Moussault, Henk Seubers, Harry Linskens, Andrea Coraddu, Jeroen Pruyn	<b>Large Uncrewed Surface Vessel: An opportunity for Energy Transition?</b> T. Beard, J. Rigby	<b>Static hydroelastic study of composite T-foils with beam and lifting line models</b> Galen W. Ng, Eirikur Jonsson, Yingqian Liao, Sicheng He, Joaquim R.R.A. Martins
15:30-16:00	<b>Simulation-based evaluation of concepts for short sea shipping of green hydrogen</b> M. Bergström, A. Niemi, B. Skobiej, Y. Dave, M. Begum, F. Schmid, F. Roland, M. Braun	<b>Leveraging a Small Dataset to Predict Nonlinear Global Loads in Irregular Waves</b> Kyle E. Marlantes, Kevin J. Maki	<b>Simulation for Designing the Transition to Autonomous Shipping - Japanese Coastal Shipping</b> Kazuo Hiekata, Yuki Maeda, Takuya Nakashima	<b>The effect of main dimensions in the preliminary design of motor yachts</b> Francesco Mauro, Ermina Begovic, Enrico Della Valentina, Antonino Dell'Acqua, Barbara Rinauro, Gennaro Rosano and Roberto Tonelli
16:00	Closure of Technical Sessions			
18:00 – 19:30	Maritime Museum Reception and Museum Tour			
19:30 – 22:00	Conference Banquet at Maritime Museum			

<b>Thursday June 6, 2024</b>			
Room	Amstel 1	Amstel 2 / 3	Theems (Thames)
09:00 – 09:30	<b>Innovations in ship design – turning visions into reality</b> Per Olaf Brett, Ulstein	-	-
09:30-10:00	<b>Energy Transition Challenges</b> Arne Hubregtse, Director, Spliethoff	-	-
10:00-10:30	<b>Yacht Design: Is it really that difficult?</b> Joris Lentjes, Senior FEM Engineer, Feadship / De Voogt Naval Architects	-	-
10:30 – 11:00	Break		
	<b>Design Education</b> Chair: Richard Birmingham Co-Chair: Jelmer Pentinga	<b>Regulations and Design Methodology</b> Chair: Hans Hopman Co-Chair: Kurt Spiteri	<b>Energy Transition and Design Methodology</b> Chair: Myung-Il Roh Co-Chair: Ben Noble
11:00-11:30	<b>Educating for an unknown Future: How to prepare students of ship design for the propulsion of tomorrow</b> Carmen Kooij	<b>Digital Shipbuilding – Needs, challenges, and opportunities</b> Jose Jorge Garcia Agis, Per Olaf Brett	<b>Design Lab: a simulation-based approach for the design of sustainable maritime energy systems</b> Kevin Koosup Yum, Sadi Tavakoli, Torstein Aarseth Bø, Jørgen Bremnes Nielsen, Dag Stenersen
11:30-12:00	<b>“Are You Sure About That?”: Handling Uncertainty in an Early-Stage Ship Design Process</b> Rachel Pawling	<b>Introduction to the Concept of the German Navy Stability Standard DMS 1030-1</b> Philipp Russell	<b>Iron Powder as a fuel on Service Vessels</b> Erik P W Scherpenhuijsen Rom, Austin A Kana
12:00-12:30	<b>Designing a marine systems design specialization track at NTNU</b> Stein Ove Erikstad, Per-Olaf Brett, Benjamin Lagemann	<b>The Impact of the new DMS-1030 Stability Standard on the Future Design of Navy Ships</b> Stefan Krüger	<b>An optimisation-based approach to reduce fuel consumption and emissions from shipping navigation</b> S. Ribeiro e Silva, M. Bento Moreira
12:30-13:00	-	<b>On empirical methods to predict the rolling period of ships</b> Rob Grin	<b>Prediction of main engine power of oil tankers using artificial intelligence algorithms</b> Darin Majnaric, Nikola Anđelić, Sandi Baressi Segota, Jerolim Andrić
13:00 – 14:00	Lunch		
14:00	Closure of technical Program		
14:00 – 18:30	Shipyards tour		