



19th International Congress of the
International Maritime Association of
the Mediterranean

İTÜ



**Sustainable Development and Innovations
in Marine Technologies**

IMAM 2022 PROGRAMME

26 - 29 September 2022

Istanbul Technical University

Istanbul, Turkey

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IMAM 2022 - SCHEDULE AT A GLANCE

Monday, 26 September 2022		Registration and Welcome Reception (16:30-19:00) ITU Suleyman Demirel Cultural Centre	
Tuesday, 27 September 2022		Registration (from 08:30 onwards)	
ITU Suleyman Demirel Cultural Centre and Online			
Opening Session (09:00-09:45) – Main Hall			
Plenary Session I (09:45-10:30) – Main Hall			
Keynote Lecture 1			
Coffee-break (10:30-11:00)			
Plenary Session II (11:00-12:30) – Main Hall			
Keynote Lectures 2 & 3			
Lunch (12:30-14:00)			
Hall A (14:00-15:30)		Hall B (14:00-15:30)	
Session 1.1 Special Session in honour of Prof. Ömer Gören		Session 2.1 Shipping emissions & digitalization	
Coffee-break (15:30-16:00)			
Hall A (16:00-18:00)		Hall B (16:00-18:00)	
Session 1.2 Hydrodynamics- waves		Session 2.2 Marine structures	
Wednesday, 28 September 2022		Registration (from 08:30 onwards)	
Hall A (09:00-10:30)		Hall B (09:00-10:30)	
Session 1.3 Hydrodynamics		Session 2.3 Marine structures-safety	
Coffee-break (10:30-11:00)			
Hall A (11:00-12:30)		Hall B (11:00-12:30)	
Session 1.4 Hydrodynamics – propulsion & resistance		Session 2.4 Marine structures-safety & risk analysis	
Lunch (12:30-14:00)			
Hall A (14:00-15:30)		Hall B (14:00-15:30)	
Session 1.5 Hydrodynamics- acoustics		Session 2.5 Marine structures-vibration	
Coffee-break (15:30-16:00)			
Hall A (16:00-18:00)		Hall B (16:00-18:00)	
Session 1.6 Offshore renewable energy		Session 2.6 Machinery & control (1)	
Steering Committee Meeting (18:10-18:40)			
Congress Dinner (20:00-)			
Thursday, 29 September 2022		Registration (from 08:30 onwards)	
Hall A (09:00-10:30)		Hall B (09:00-10:30)	
Session 1.7 Port operations & green ports		Session 2.7 Navigaton & human factors	
Coffee-break (10:30-11:00)			
Hall A (11:00-12:30)		Hall B (11:00-12:30)	
Session 1.8 Materials & design		Session 2.8 Machinery & control (2)	
Closing Ceremony (12:30-12:45)			
Lunch (12:45-13:30)			
Cultural Tour (13:30-18:30)			

SESSIONS IN ALPHABETICAL ORDER

Session	Day	Time	Hall
Hydrodynamics, Session 1.3	Wednesday, 28/09/2022	09:00	Hall A
Hydrodynamics- acoustics, Session 1.5	Wednesday, 28/09/2022	14:00	Hall A
Hydrodynamics- propulsion and resistance, Session 1.4	Wednesday, 28/09/2022	11:00	Hall A
Hydrodynamics- waves, Session 1.2	Tuesday, 27/09/2022	16:00	Hall A
Machinery & control (1), Session 2.6	Wednesday, 28/09/2022	16:00	Hall B
Machinery & control (2), Session 2.8	Thursday, 29/09/2022	11:00	Hall B
Marine structures, Session 2.2	Tuesday, 27/09/2022	16:00	Hall B
Marine structures- safety, Session 2.3	Wednesday, 28/09/2022	09:00	Hall B
Marine structures- safety & risk analysis, Session 2.4	Wednesday, 28/09/2022	11:00	Hall B
Marine structures- vibration, Session 2.5	Wednesday, 28/09/2022	14:00	Hall B
Materials & design, Session 1.8	Thursday, 29/09/2022	11:00	Hall A
Navigation & human factors, Session 2.7	Thursday, 29/09/2022	09:00	Hall B
Offshore renewable energy, Session 1.6	Wednesday, 28/09/2022	16:00	Hall A
Port operations & green ports, Session 1.7	Thursday, 29/09/2022	09:00	Hall A
Shipping emissions & digitalization, Session 2.1	Tuesday, 27/09/2022	14:00	Hall B
Special Session in honour of Prof. Ömer Gören, Session 1.1	Tuesday, 27/09/2022	14:00	Hall A



IMAM 2022 Programme

Monday, 26th September 2022

Registration and Welcome Reception (16:30-19:00)
ITU Suleyman Demirel Cultural Center



IMAM 2022 Programme		Tuesday, 27th September 2022	
Registration (from 08:30 onwards)			
Opening Session (09:00-09:45) Main Hall			
Plenary Session I (09:45-10:30) Main Hall			
Keynote Lecture 1			
Trends of digital and intelligent technology development in the shipping industry			
C. Guedes Soares			
Chair: S.Ergin			
Coffee-break (10:30-11:00)			
Plenary Session II (11:00-12:30) Main Hall			
Keynote Lecture 2			
Ocean science and marine technology research and education for sustainable utilisation of ocean resources			
A. İncecik			
Keynote Lecture 3			
Flexible information integration architecture based on cloud native technologies for large cruise ships			
D. Zhao			
Chair: A. Ergin			
Lunch (12:30-14:00)			
(14:00-15:30) Hall A		(14:00-15:30) Hall B	
Session 1.1		Session 2.1	
Special Session in honour of Prof. Ömer Gören		Shipping emissions & digitalization	
Chairs: A. İncecik, K. Spyrou		Chairs: P.G. Georgiev, E. Altarriba	
Evaluation of a practical criterion of ship dynamic course stability for regular following waves		Developing sustainable shipping and maritime transport – multi-criteria analysis between emission abatement methods	
V. Margari & K. Spyrou		E. Altarriba, S. Rahiala, T. Tanhuanpää & M. Piispa	
Dynamic positioning operability assessment by using thrust allocation optimization		Carbon emissions from container shipping in the Black Sea	

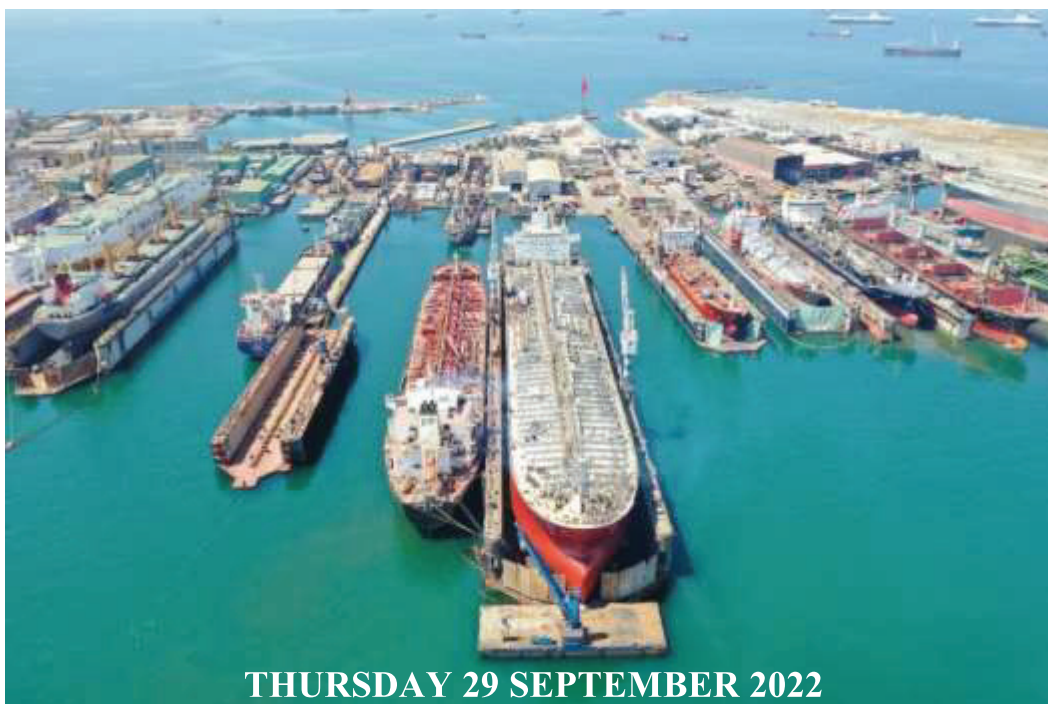
<p><i>C. Fruzzetti, S. Donnarumma, F. Maggiani & M. Martelli</i></p> <p>The influence of numerical parameters on the total resistance of a container ship <i>C.G. Grlj, N. Degiuli, A. Farkas & I. Martić,</i></p>	<p><i>P.G. Georgiev, L. Naydenov & Y. Garbatov</i></p> <p>Meta-data analysis, prospects, challenges, and a roadmap for optimal ship energy management using a digital twin (on-line) <i>C. Spandonidis, P. Theodoropoulos, E. Pariotis, T. Zannis, S. Polyzos, K. Alexiou, Y. Konstantaras, M. Koukou & M.Gr. Vrachopoulos</i></p>
Coffee-break (15:30-16:00)	
<p>(16:00-18:00) Hall A Session 1.2 Hydrodynamics- waves Chairs: J. Parunov, I. Martić</p>	<p>(16:00-18:00) Hall B Session 2.2 Marine structures Chairs: N. Vladimir, M. Mokhtari</p>
<p>Dependence of the long-term extreme significant wave heights on the wave directionality: A case study of the Adriatic Sea <i>A. Mikulić & J. Parunov</i></p> <p>Particle paths and hydrodynamic forces of random wind forced nonlinear ocean waves (on-line) <i>M. Hollm, L. Dostal & R. Seifried</i></p> <p>A coupled BEM-FEM scheme for the interaction of water waves with porous breakwaters consisted by multiple vertical cylinders in the presence of current (on-line) <i>A.A. Magkouris, A. Karperaki & K. Belibassakis</i></p> <p>Numerical investigation of interference effects for the Delft 372 catamaran <i>A. Farkas, N. Degiuli, I. Tomljenović & I. Martić</i></p>	<p>Salt spray fog ageing of Al/Steel Structural Transition Joints for shipbuilding (on-line) <i>P. Corigliano, L. Calabrese & V. Crupi</i></p> <p>Cumulative buckling deformation of stiffened panel under cyclic loading <i>B. Barsotti & M. Gaiotti</i></p> <p>Assessment of structural integrity of an aged ship during towing in waves <i>N. Vladimir, I. Senjanović, I. Jovanovic, S. Tomašević & P. Jurišić</i></p> <p>Localized corrosion damage prediction of steel plates in marine applications using quadrilateral inverse-shell elements based on iFEM <i>M. Ghasemzadeh, M. Mokhtari & A. Kefal</i></p>



WEDNESDAY 28 SEPTEMBER 2022

IMAM 2022 Programme		Wednesday, 28th September 2022	
Registration (from 08:30 onwards)			
(09:00-10:30) Hall A Session 1.3 Hydrodynamics Chairs: A. Pechenyuk, C. Fruzzetti		(09:00-10:30) Hall B Session 2.3 Marine structures-safety Chairs: K. Spyrou, A. Kefal	
Assessment of the second generation intact stability criteria (on-line) <i>M. Taylan & A.Süliis</i>		Finite element and economic analysis of buckle arrestors on marine pipeline (on-line) <i>M. Kotb, A. Banawan, Y. Ahmed & E.O. Shaaban</i>	
Effects on partially cavitating hydrofoils in finite submergence depth via an adjoint-based prediction method (on-line) <i>D. Anevlavi & K. Belibassakis</i>		Steps towards a systematic analysis and prevention of fires onboard containerships (on-line) <i>I. Papoutsis, I. Koromila, N. Themelis & K. Spyrou</i>	
Development of hull form and propulsion system, optimal for river-sea ships of the Northern Black Sea (on-line) <i>O. Hordienko & A.V. Pechenyuk</i>		Utilising Bayesian Networks for the crisis classification during piracy or armed robbery incidents on passenger ships (on-line) <i>N. Ventikos, A. Koimtzoglou, A. Michelis, A. Rammos, I. Kopsachelis & I. Androulakis</i>	
Coffee-break (10:30-11:00)			
(11:00-12:30) Hall A Session 1.4 Hydrodynamics – propulsion & resistance Chairs: V. Slapnicar, I. Martić		(11:00-12:30) Hall B Session 2.4 Marine structures-safety & risk analysis Chairs: S. Koroğlu, T. Coppola	
Propeller retrofit on a fishing vessel: Self-propulsion CFD simulations with existing and new propeller <i>A. Bakica, N. Vladimir & M. Koričan</i>		Assessing the risk during mustering in large passenger vessels: A digital tool for real time decision support (on-line) <i>A. Koimtzoglou, N. Themelis, N. Ventikos, K. Louzis, M.A. Koimtzoglou, K. Giannakis, P. Panagiotidis, M. Ramiro, J. Peña, D.G. Fernández, J. Ruiz, A. Gardel, P. Kavassalis, N. Traintafyllou & K. Ksysra</i>	
The Cb calculation model of a merchant ship by empirical methods		A comprehensive description of the FloodW Simulation Code and its applications	

<p><i>V. Slapnicar, K. Zadro, V. Lozar & I. Čatipović</i></p> <p>Neural network model for the prediction of added resistance of container ships in regular head waves</p> <p><i>I. Martić, N. Degiuli, A. Farkas & C.G. Grlić</i></p>	<p><i>M. Acanfora, M. Altosole, T. Coppola & R. Martino</i></p> <p>Impact of Covid-19 on shipbuilding and shipping industry</p> <p><i>M. Taylan</i></p>
Lunch (12:30-14:00)	
<p>(14:00-15:30) Hall A</p> <p>Session 1.5</p> <p>Hydrodynamics- acoustics</p> <p>Chairs: B. Uğurlu, S. Bulut</p>	<p>(14:00-15:30) Hall B</p> <p>Session 2.5</p> <p>Marine structures- vibration</p> <p>Chairs: C. Bayındır, M.E. Yıldızdağ</p>
<p>Experimental investigation on the hydro-acoustic characteristics of tandem cylinders (on-line)</p> <p><i>S. Bulut & S. Ergin</i></p> <p>Modelling underwater noise propagation emitted from oscillating lifting surfaces (on-line)</p> <p><i>I. Malefaki, A. Karperaki & K. Belibassakis</i></p> <p>Vibroacoustic noise estimation of a combined elastic submarine-propeller system subjected to the self-propulsion conditions</p> <p><i>İ. Kahraman, G. Bilici, E. Tunca, T. R. Azrak, A. Kutlu & B. Uğurlu</i></p>	<p>Investigation of acoustic radiation from a sphere pulsating on the free surface using a boundary element approach</p> <p><i>B. Üstündağ, B. Uğurlu & A. Ergin</i></p> <p>Hydroelastic vibration analysis of fully or partially submerged structures by Material Point Method</p> <p><i>M.E. Yıldızdağ</i></p> <p>Efficient measurement of floating breakwater vibration and controlled vibration parameters using compressive sensing (on-line)</p> <p><i>K. Akkaş & C. Bayındır</i></p>
Coffee-break (15:30-16:00)	
<p>(16:00-18:00) Hall A</p> <p>Session 1.6</p> <p>Offshore renewable energy</p> <p>Chairs: I. Čatipović, E. Oğuz</p>	<p>(16:00-18:00) Hall B</p> <p>Session 2.6</p> <p>Machinery & control (1)</p> <p>Chairs: M.Akman, S. Rahiala</p>
<p>Investigation of the influence of wind assisted propulsion devices on hull design</p> <p><i>Z. Saydam, G. Küçükşu, M. Insel & S. Gökçay</i></p> <p>Seakeeping assessment of a floating object with installed photovoltaic system (on-line)</p> <p><i>I. Čatipović, L. Ilić, A. Mikulić & D. Smoljan</i></p> <p>Coupled aerodynamic and hydrodynamic analyses of upscaled floating offshore wind turbines</p> <p><i>M.J. Putra, E. Oğuz & N.S. Uzoğlu</i></p> <p>Residual ultimate strength prediction of monopile foundation of offshore wind turbine subjected to pitting (on-line)</p> <p><i>M. He, M. Pang & N.Z. Chen</i></p>	<p>Investigation of oil emission mechanisms in a marine medium-speed dual-fuel engine</p> <p><i>B. Hochfellner, F. Wirz, K. Prymak, A.-C. Preuß & G. Matz</i></p> <p>The necessity of time-based calculations for dimensioning of hybrid power supply systems of ships within the early design stage</p> <p><i>C.H. Emmersberger, B. Carstensen, A. Lübcke & S. Krüger</i></p> <p>Path planning for USV based on artificial potential field approach with learning automata (on-line)</p> <p><i>C. Xiong, R. Wu, W. Wu & D. Zhao</i></p> <p>Improved particle swarm optimization and DDQN algorithm for multi-UUV path planning (on-line)</p> <p><i>W. Wu, C. Xiong, X. Guo & D. Zhao</i></p>
Steering Committee Meeting (18:10-18:40)	
Congress Dinner (20:00-)	



THURSDAY 29 SEPTEMBER 2022

IMAM 2022 Programme		Thursday, 29th September 2022	
Registration (from 08:30 onwards)			
(09:00-10:30) Hall A Session 1.7 Port operations & green ports Chairs: F. Quaranta, T. Santos		(09:00-10:30) Hall B Session 2.7 Navigaton & human factors Chairs: S.I. Vergiev, T. Raid	
Greening the logistics of container transportation to port terminals using inland waterways (on-line) <i>T. Santos</i>		On some issues related to general average in International Maritime Transport (on-line) <i>D. Marinova</i>	
Determining effects of controllable factors on flawless operations of tanker terminals: Tupras case study (on-line) <i>T.T. Yaman & M.Ö. Yildiz</i>		Management of the Gulf of Riga herring (Baltic Sea): Lessons learned and challenges ahead <i>T. Raid, E. Sepp, O. Kaljuste, G. Strods, I. Putnis, M. Plikshs, K. Hommik & T. Arula</i>	
Possible approaches to the study of the emissions from ships during their operations in ports (on-line) <i>S. Ergin, L. Mocerino & F. Quaranta</i>		Comparative study of the capacity of native to the Bulgarian Black Sea Coast plant species for erosion and flooding control of coastal areas (on-line) <i>S.I. Vergiev</i>	
Coffee-break (10:30-11:00)			
(11:00-12:30) Hall A Session 1.8 Materials & design Chairs: J. Parunov, G.Palomba		(11:00-12:30) Hall B Session 2.8 Machinery & control (2) Chairs: T. Tanhuanpää, M. Akman	
Structural analysis of tourist submarine with acrylic hull <i>J. Parunov, M. Ćorak, Z. Šperanda & J. Čokić</i>		Thermal analysis of thermo-electric power generation system for the waste heat recovery from a marine diesel engine aboard a handymax-size tanker <i>F. Bobur & S. Ergin</i>	
Flapping-foil thruster design with optimal flexural rigidity profile based on a coupled BEM-FEM model (on-line) <i>D. Anevlavi & K. Belibassakis</i>		Thermo-economic optimization of an ORC system for a dual fuel marine engine (on-line) <i>M. Akman & S. Ergin</i>	

Analysis of energy-efficient materials for vessels environmental impact reduction (on-line) <i>G. Palomba, V. Crupi & V. Palomba</i>	A comprehensive study on flow conditioner design working in a Fi-Fi Monitor <i>A.Ç. Bilir, A. Doğrul & N. Vardar</i>
Closing Ceremony (12:30-12:45)	
Lunch (12:45-13:30)	
Cultural Tour (13:30-18:30)	

Honorary Session

Prof. Ömer Gören



Academic History

Prof. Ömer Gören has been a Faculty Member at ITU Department of Naval Architecture and Marine Engineering since 1987. After graduating from ITU, he started his professional career in 1979 as a research engineer at Ship Research Institute, ITU. He got his M.Sc. degree in 1981 and Ph.D. degree in 1985 from Graduate Institute of ITU. He studied at the University of British Columbia in 1986-1987 as a post-doctoral fellow. During the period of 1998-2004 he was the superintendent of Ata Nutku Ship Model Testing Laboratory of ITU. He served as the Dean of the Faculty of Naval Architecture and Ocean Engineering between 2004-2008. He teaches mainly on ship hydrodynamics and numerical techniques in ship hydrodynamics (6 undergraduate courses and 2 graduate courses since 1987).

Research Areas and Interests

His focal points of research remain under the general title of free-surface hydrodynamics, namely Non-linear motions of floating bodies (radiation and diffraction problems), Computational analysis of ship wave resistance, Hull form optimization for minimum resistance, Devices to improve flow uniformity around ships, Design of naval and commercial ships for hydrodynamic point of view, Analysis of free surface violent flows by SPH. He has been actively engaged in NATO-STO Applied Vehicle Technology Panel in various research tasks as Technical Team Member for more than 10 years. He published 22 journal papers and 29 conference papers in his areas of interest.

Industrial Applications

He carried out hydrodynamic form optimization of more than 40 ships –including naval ships- built and now in operation. Computational ship wave resistance analysis code (TRAWSON) – developed jointly with UBC Naval Lab – licensed and marketed by UBC University Industry Liaison Office (Canada).

Honors and Awards

He received (together with S.M. Calisal and D. McGreer) ATMA (Assoc. Tech. Maritime et Aeronautique, France) 1990 medal for the paper “Economie de Carburant por Navire de Peche”. He was granted NATO (TUBITAK) Science Fellowship at UBC Canada in 2004, The Royal Society (ESEP) Visiting Scholarship at Univ. of Newcastle in 1998, NATO (TUBITAK) Science Fellowship at UBC Canada in 1994, NATO Research Grant at UBC in 1990, Post-doc Fellowship at UBC Mech. Engng Dept., 1986 – 1987.

Biographical Data and Interests

Born in 1956, Söke/Aydın, Turkey, Married and has two children, Old discus thrower, trying to continue sports (running, walking, swimming), Interested in political history and philosophy, history of science and technology (as a reader), Experienced Sinagrit (Aegean) and Halibut (Pasific) catcher. He became a Fellow Member of SNAME in 2014.

Keynote Lectures

Prof. Carlos Guedes Soares



Carlos Guedes Soares is a Distinguished Professor of the Engineering Faculty (Instituto Superior Técnico) of the University of Lisbon and Scientific Coordinator of the Centre for Marine Technology and Ocean Engineering (CENTEC), which is a research centre of the University of Lisbon that is rated as “Excellent” and funded by the Portuguese Foundation for Science and Technology. He concluded his postgraduate studies at the Massachusetts Institute of Technology, USA in 1976, and at the Norwegian Institute of Technology of the University of Trondheim, in 1984 and has since then been at the University of Lisbon (Technical University of Lisbon until 2013). He has supervised more than 75 PhD students and has co-authored more than 900 journal papers and several more in Conferences. He has been Chair or Co-Chair of various conferences in the series of OMAE, ESREL, IMAM, ISSC, ICCGS, MARSTRUCT, MARTECH and RENEW Conferences. He is a Fellow of SNAME, RINA, IMarEST, ASME, Ordem dos Engenheiros, Member of ASCE, AGU and SRA and a Member of the Portuguese Academy of Engineering.

Keynote Lectures

Prof. Atilla Incecik



Atilla Incecik is Associate Principal and Professor of Offshore Engineering at the University of Strathclyde, Glasgow. Prior to his appointment as Associate Principal he was Associate Principal & Executive Dean of the Faculty of Engineering. Before that, he was Associate Deputy Principal, Acting Executive Dean of the Faculty of Engineering, Head of Department of Naval Architecture, Ocean and Marine Engineering at the University, and the Lloyd's Register Chair of Offshore Engineering and Founding Head of School of Marine Science and Technology at Newcastle University.

Professor Incecik has been responsible for the development of design and analysis tools and model testing of marine and offshore engineering systems during his research activities both in industry and academia. His current research includes development of dynamic load and response prediction tools for ships, offshore platforms and marine renewable energy devices.

In May, 2019 Professor Incecik was awarded an Honorary Doctorate by Chalmers University of Technology, Sweden in recognition of his research on green shipping and environmental sustainability. In February 2022, Professor Incecik received The Royal Institution of Naval Architects' William Froude Medal and in May 2022 he has been awarded the Council of the Confederation of European Maritime Technology Societies 2021 award in recognition of his contribution to the advancement of knowledge in the field of ocean engineering

Professor Incecik is an advisory professor at Shanghai Jiao Tong University, a visiting professor at Harbin Institute of Technology and Zhejiang University. Professor Incecik is Editor-in-Chief of Ocean Engineering Journal.

Keynote Lectures

Dr. Dongming Zhao



Dongming Zhao is an associate professor at the Green & Smart River-Sea-Going Ship, Cruise and Yacht Research Center in Wuhan University of Technology. He received his Ph.D. degree from the Department of Control Science and Technology at Huazhong University of Science and Technology in 2006 and B.S. degree from the Huazhong University of Science and Technology, Wuhan, China in 1999. Dr. Zhao's research focuses on applying modern computer science in ship and marine engineering fields. With his collaborators, Zhao systematically develops discrete theories and computational algorithms in the interdisciplinary field: cloud native technology, and apply them for solving real problems, such as intelligent control of unmanned ship, integrated platform management in ship, model-based machinery surveillance system designing, etc.

He is a recipient of science and technology progress award of China satellite navigation and positioning Association, 2016.

Congress Venue

Süleyman Demirel Cultural Center (SDKM)

The conference will take place at Maslak Campus, Istanbul Technical University - half an hour distance from Taksim Square, the city centre. There is a metro line from Taksim Square to the campus.

Conference Venue, Süleyman Demirel Cultural Center (SDKM) at the Istanbul Technical University main Campus in Maslak, Istanbul, Türkiye.



The full address:

İstanbul Teknik Üniversitesi,
Ayazağa Kampüsü,
Süleyman Demirel Kültür Merkezi,
Maslak 34469 İstanbul, Turkey.

Congress Secretariat:

Istanbul Technical University, Faculty of Naval Architecture and Ocean Engineering,
Maslak 34469 Istanbul, Turkey.

Contact: imam2022@itu.edu.tr

Congress Website: <https://imam2022.itu.edu.tr/>

Congress Dinner

Yüksel Balık Restaurant, Tarabya

Yüksel Balık is a stylish fish restaurant, which has adopted the principle of delivering high quality sea food from fishing line to you with its understanding of modern and traditional service. You may find more information from its website, <https://www.yukselbalik.com.tr/yukselTarabya/iletisim-en.html>

Address:

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