



RINA - IMarEST MALTA Joint Branch

A Joint Branch of the RINA and the IMarEST

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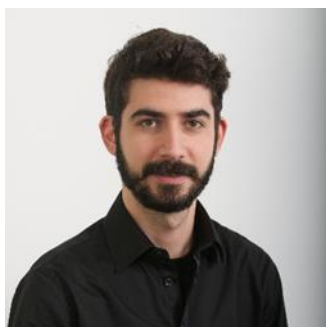
Linkedin Group: RINA-IMarEST Malta Joint Branch

TECHNICAL PRESENTATIONS

“Effect of biofouling on ship performance and energy efficiency”

By Dr Yigit Kemal Demirel

Description of the presentation: Marine biofouling is an increasing problem from both economic and environmental points of view in terms of increased fuel consumption, increased GHG emissions and transportation of harmful non-indigenous species. The fuel consumption of a ship is strongly influenced by her frictional resistance, which is directly affected by the roughness of the hull's surface, i.e. biofouling. Increased hull roughness leads to increased frictional resistance, causing higher fuel consumption and CO2 emissions. It would, therefore, be very beneficial to be able to accurately predict and quantify the effects of biofouling on ship performance and energy efficiency. However, it is a major challenge to relate fouling-control coatings and the effect of biofouling, to full-scale ship resistance and powering, in order to accurately evaluate their effects on energy efficiency, fuel consumption and hence CO2 emissions. The answers to the question, “How might the roughness of biofouling and fouling-control coatings be related to full-scale ship resistance and powering?” will be discussed thoroughly. The state-of-the-art and novel experimental and numerical methods will be presented, along with the future directions in research on the issue.



Short bio: Dr Yigit Kemal Demirel is currently a Senior Lecturer (Associate Professor) in the Department of Naval Architecture, Ocean and Marine Engineering (NAOME) at the University of Strathclyde, Glasgow. Dr Demirel's expertise and research interests lie in computational (CFD) and experimental hydrodynamics. He is actively engaged in fundamental and industry-focused research on effect of roughness (hull fouling and antifouling coatings) on ship performance, ship design, energy efficiency of ships, hull-propeller optimisation and energy saving devices.

“Ship performance prediction in waves using high-fidelity and practical tools”

by Dr Tahsin Tezdogan

Description of the presentation: It is critical to be able to estimate a ship's response to waves, since the resulting added resistance and loss of speed may cause delays or course alterations, with consequent financial repercussions. The resistance of a ship operating in a seaway is greater than its resistance in calm water. The difference between these two resistances arises from ship motions and wave forces in waves and has been termed the added resistance due to waves. Added resistance can account for up to 15-30% of the total resistance in calm water. It is therefore very necessary to be able to accurately predict the added resistance of a ship in waves, and this should be included in ship performance assessments. There are many techniques to calculate the performance and behaviour of a ship in seaways. This talk will include a summary of these methods available for naval architects, focusing on their advantages and shortcomings. The application of the state-of-the-art Computational Fluid Dynamics (CFD) method in the prediction of seakeeping and added resistance in waves will also be introduced. Some practical methods for quick estimation of these quantities will be discussed. The presentation will also cover the future directions in research in this context.



Short bio: Dr Tahsin Tezdogan is currently a senior lecturer in Fluid-Structure Interactions in the Department of Naval Architecture, Ocean and Marine Engineering (NAOME) at the University of Strathclyde, Glasgow. He is also the Director of Postgraduate Taught Programmes within NAOME. Dr Tezdogan received his PhD degree in 2015 from Strathclyde from the same department, with his PhD thesis entitled, 'Potential Flow and CFD-Based Hydrodynamic Analyses of Mono- and Multi-Hull Vessels'.

Tuesday 30th June 2020 Online Seminar

Online Zoom link to the presentation:

url: <https://strath.zoom.us/j/97438186677>

Meeting ID: 974 3818 6677

Password: 791194

*Members and addressees are cordially invited to attend
and are welcome to bring their guests with them.*

A certificate of attendance will be issued upon request by emailing to

rina.imarest.mlt@gmail.com.

The presentation will start at 18.00

RSVP: rina.imarest.mlt@gmail.com