TMSI Tropical Marine Science Institute
National University of Singapore

RESEARCH SEMINAR

From Marine Biofouling to Sustainable Hull Management

By Asst Prof Kim Youngrong
School of Civil and Environmental Engineering, NTU

Date: **Friday 30th October 2026**
Time: 2- 3 PM SGT
Format: Hybrid
In Person at TMSI Conference Room, S2S Building Level 1, 18 Kent Ridge Road, Singapore 119227
Host: Dr Serena Teo
Registration: Zoom Link



ABSTRACT:
Marine biofouling affects ship energy efficiency and poses challenges for sustainable hull management. Understanding its impact requires connecting biological observations with engineering assessments of ship performance. This seminar will introduce how biofouling-related fuel penalties can be quantified, drawing on selected findings from our research in European and tropical waters. It will also explore how these findings, together with the environmental implications of antifouling and maintenance practices, can support more informed decisions through tools such as HullMASTER. Finally, I will share my ongoing research and future directions towards more reliable and sustainable hull management.

About the Speaker:
Dr. Youngrong Kim is Assistant Professor at the School of Civil and Environmental Engineering (CEE) at Nanyang Technological University (NTU), Singapore. He holds BSc (2012) & MSc (2019) degrees in Navigation Science from Korea Maritime and Ocean University, Korea. He completed his PhD (2023) in Marine Technology from the Norwegian University of Science and Technology (NTNU), Norway, followed by postdoctoral research at the Department of Mechanics and Maritime Sciences, Chalmers University of Technology, Sweden. Dr. Kim's main research interests lie data-driven ship performance analysis, the development of intelligent systems for enhanced ship navigation and safety, the application and impact assessment of green shipping technologies, and optimal strategies for ship antifouling and hull maintenance considering socio-environmental factors. Prior to academia, he served as Chief Officer for navigation for 5 years on container ships and LNG carriers with Hyundai Merchant Marine and Hyundai LNG Shipping. This practical experience provided him with extensive operational knowledge and expertise within the maritime sector.

