

Preface

This special issue on *“Underwater System Technology: Control, Sensing and Instrumentations”* is a compilation of selected papers from the 5th International Conference on Underwater System Technology 2014 (USYS 2014) held in Melaka, Malaysia. Papers of this issue are related to the area of modeling and development various kind of sensing device for underwater application, underwater vehicle development and also control and instrumentations for underwater/ocean applications. The papers cover updated research findings in the development of underwater system technology field from various research groups around the globe which were presented at the USYS'14 conference. Among the papers covered are *“Homomorphic filtering with image fusion for enhancement of details and homogeneous contrast of underwater image”*. This paper highlighted the importance of imaging and its associated quality. These visual cues will be useful for various control decision-making process. Another paper talks about *“Position and Velocity control of Remotely Operated Underwater Vehicle using Model Predictive Control”* which describes the development of a soft computing approach to control feedback. The use of artificial intelligence approach in control applications is wide-spread even for ocean-related applications. New underwater vehicles, in terms of mechanical and control, design were also presented in USYS'14. Example of such papers are *“Dynamic Motion Analysis of a Newly Developed Autonomous Underwater Glider with Rectangular and Tapered Wing”* and *“Buoyancy effect control in multi legged robot locomotion on seabed using integrated impedance-fuzzy logic approach”*. For the instrumentations sides, papers such as *“Remote passive acoustic monitoring (RPAM): Listening for whales and dolphins from the safety of land”* and *“Ocean Observation System using Multi Blimp System with Animal inspired Consensus Decision Making”* provide an interesting new development of novel instrumentations for ocean data acquisition. Two papers on intelligent underwater sampling apparatus have shown the pertinent and appropriate utilisation of technology to better understand our oceans. The selected papers in this special issue are intended to disseminate the latest development in the respective research topics and to spur and attract new researchers into this unique domain. Finally, the editor would like to express his sincere gratitude to all contributing authors for the hard work in preparing and revising the manuscript, reviewers for critical analysis and to the Editor IJMS for editorial contribution and publication of the special issue. We hope to see more impactful and seminal papers in the upcoming USYS conference series. Thank you.

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Guest Editor