Special Issue

Advancements in Underwater and Surface Robotic Vehicles: Applications, Designs, and Future Directions

Message from the Guest Editors

Unmanned Underwater Vehicles (UUV) and Unmanned Surface Vehicles (USV) have been at the forefront of robotics research in recent years. Addressing enduring challenges, such as energy efficiency, renewable energy harvesting, and integrating advanced electric power plants, including hydrogen-based propulsion, is paramount. Autonomy, perception, and environmental awareness remain significant obstacles that must be overcome to achieve ubiquitous use across civil and military applications. Moreover, emerging vehicle configurations have recently gained attention, for instance, the Aerodynamically Alleviated Marine Vehicles (AAMV), including Wing-In-Ground (WIG) vessels and Surface-Effect-Ships (SES). These configurations present complex hydrodynamic and aerodynamic behaviours, requiring further research to enable autonomous operation. This Special Issue addresses these topics, emphasising real-world applications of these vehicles and showcasing their capabilities through rigorous field testing.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal Applied Sciences has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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