



applied sciences



Special Issue Reprint

Sensors and Measurement Systems for Marine Engineering Applications

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The proper operation of any modern vessel relies heavily on the information provided by the onboard measuring devices quantifying critical performance parameters. Consequently, the role of sensors and measurement systems in general is undoubtedly of great importance in most marine engineering applications. In addition, over the past three decades, the miniaturization of sensors has led to the newly developed field of “microsensors”, which has grown rapidly, significantly influenced by the substantial advancements in the semiconductor industry. Consequently, ship-deployed sensors have followed the same trend, taking their role one step further by incorporating semiconductor-based technology into standard marine equipment and measuring systems. Today, typical types of sensors employed aboard include gas detection sensors, gas/air flow sensors, humidity sensors, temperature/pressure sensors, speed/acceleration sensors, strain sensors, and IMUs, all of which are essential for vessel safety. Furthermore, modern sensing devices play a crucial role in advancing marine technology by facilitating the integration of new technologies, such as the Internet of Things (IoT), big data, and cloud computing, which rely heavily on sensing devices for functionality and contribute to their rapid development. This Reprint aims to contribute to the exploration of significant advancements in sensor and measurement system technologies in maritime engineering, with a focus on novel sensors and measuring systems enhancing safety, efficiency, sustainability, and technological advancements to meet marine applications’ continuously evolving needs.



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