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Special Issue Reprint

Smart Structures and Materials for Sensor Applications

Edited by: Heung Soo Kim, Asif Khan and Jung Woo Sohn

This Reprint presents a curated collection of research articles focused on recent advances in smart structures and materials for sensor applications. Sensors are fundamental components in various industrial and engineering systems, enabling functions such as structural health monitoring, process control, and the mitigation of noise and vibration. With the growing demand for intelligent, adaptive, and efficient systems, smart materials have gained prominence as key elements in next-generation sensing technologies.

The studies compiled in this Reprint explore the design, characterization, and application of sensors based on piezoelectric materials, shape memory alloys, electroactive polymers, and magnetostrictive materials. Contributions encompass both theoretical and experimental approaches, demonstrating how these materials can be integrated into smart and intelligent structures, such as laminated composites, morphing wings, and reconfigurable aerospace components. Through a multidisciplinary perspective bridging materials science, structural mechanics, and sensing technology, this Reprint aims to provide readers with a comprehensive overview of current developments and emerging trends in the use of smart structures and materials for advanced sensor systems. It serves as a valuable reference for researchers, engineers, and professionals working in the fields of smart materials, sensing, and intelligent structural systems.



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