



sensors



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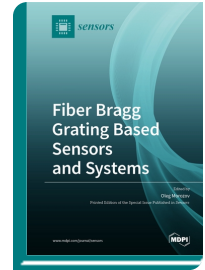
Fiber Bragg Grating Based Sensors and Systems

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This book is a collection of papers that originated as a Special Issue, focused on some recent advances related to fiber Bragg grating-based sensors and systems. Conventionally, this book can be divided into three parts: intelligent systems, new types of sensors, and original interrogators. The intelligent systems presented include evaluation of strain transition properties between cast-in FBGs and cast aluminum during uniaxial straining, multi-point strain measurements on a containment vessel, damage detection methods based on long-gauge FBG for highway bridges, evaluation of a coupled sequential approach for rotorcraft landing simulation, wearable hand modules and real-time tracking algorithms for measuring finger joint angles of different hand sizes, and glaze icing detection of 110 kV composite insulators. New types of sensors are reflected in multi-addressed fiber Bragg structures for microwave–photonic sensor systems, its applications in load-sensing wheel hub bearings, and more complex influence in problems of generation of vortex optical beams based on chiral fiber-optic periodic structures. Original interrogators include research in optical designs with curved detectors for FBG interrogation monitors; demonstration of a filterless, multi-point, and temperature-independent FBG dynamical demodulator using pulse-width modulation; and dual wavelength differential detection of FBG sensors with a pulsed DFB laser.



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