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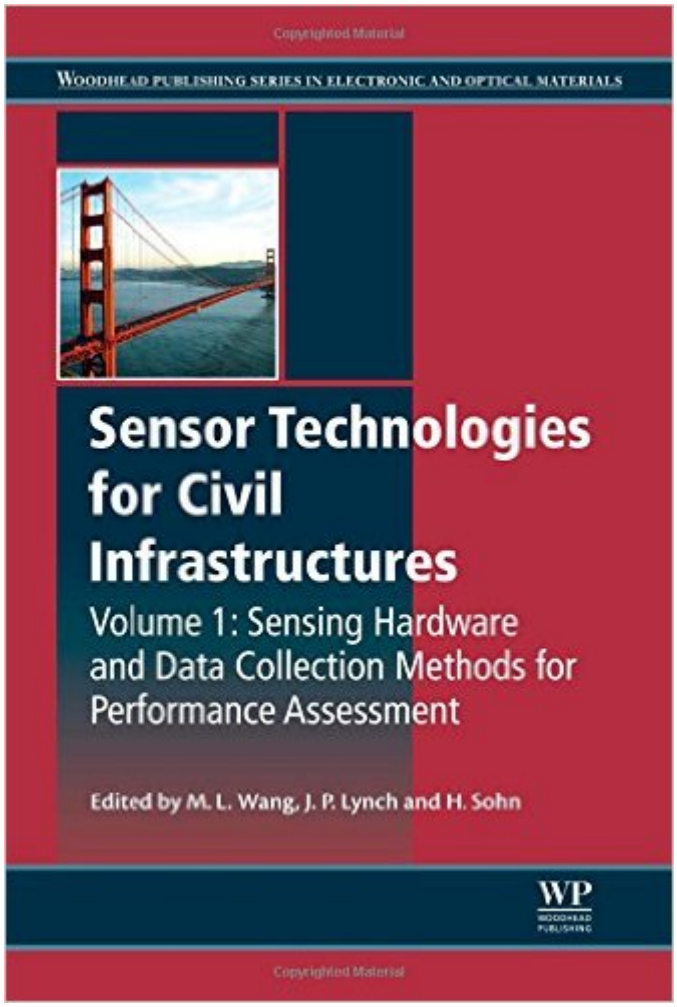
Sensor Technologies For Civil Infrastructures: Sensing Hardware And Data Collection Methods For Performance Assessment (Woodhead Publishing Series In Electronic And Optical Materials)

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Synopsis

Sensors are used for civil infrastructure performance assessment and health monitoring, and have evolved significantly through developments in materials and methodologies. Sensor Technologies for Civil Infrastructure Volume I provides an overview of sensor hardware and its use in data collection. The first chapters provide an introduction to sensing for structural performance assessment and health monitoring, and an overview of commonly used sensors and their data acquisition systems. Further chapters address different types of sensor including piezoelectric transducers, fiber optic sensors, acoustic emission sensors, and electromagnetic sensors, and the use of these sensors for assessing and monitoring civil infrastructures. Developments in technologies applied to civil infrastructure performance assessment are also discussed, including radar technology, micro-electro-mechanical systems (MEMS) and nanotechnology. Sensor Technologies for Civil Infrastructure provides a standard reference for structural and civil engineers, electronics engineers, and academics with an interest in the field. Describes sensing hardware and data collection, covering a variety of sensorsExamines fiber optic systems, acoustic emission, piezoelectric sensors, electromagnetic sensors, ultrasonic methods, and radar and millimeter wave technologyCovers strain gauges, micro-electro-mechanical systems (MEMS), multifunctional materials and nanotechnology for sensing, and vision-based sensing and lasers

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