

Fiber Optic Sensors: An Introduction for Engineers and Scientists

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Fiber Optic Sensors: An Introduction for Engineers and Scientists From Wiley-Interscience

A comprehensive introduction to this fast growing technology

This book provides an introduction to the rapidly advancing and expanding field of fiber optic sensors, with chapters contributed by internationally recognized experts. Each of the three sections-Basic Components, Technology, and Applications-offers a stand-alone primer on a key area of the field. Together, they give engineers, scientists, graduate students, and advanced undergraduates a comprehensive resource on fiber optic sensors.

Initial chapters cover optical fibers, light sources, and detectors and optical modulators, introducing the fundamental building blocks of fiber optic sensors and pointing out the many connections between these elements and fiber optic sensor technology. Subsequent chapters cover:
* Extrinsic or hybrid fiber optic sensors
* Intensity sensors for monitoring temperature, position, and other environmental aspects
* The Fabry-Perot based fiber optic sensor
* The Mach-Zehnder interferometer
* The Sagnac interferometer and fiber gyroscopes
* Displacement fiber optic sensors
* Polarization sensors
* Industrial applications of fiber optic sensors
* Fiber optic smart structures

Pooling the expertise of leading professionals, Fiber Optic Sensors supplies an integral resource for understanding a key area of optical science and telecommunications.

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Editorial Review

Review
"This revision of the successful first edition is designed to fill the needs of introductory and advanced courses on Fiber Optic Sensors while still offering a wealth of information to the professional. Included are problems, applications, and a solutions manual for instructors." (Yahoo! Finance US, 15 February 2011)

From the Publisher
Provides an introduction to the rapidly advancing and expanding field of fiber optic sensors, with chapters contributed by internationally recognized experts. Initial chapters cover optical fibers, light sources and detectors and optical modulators, introducing the fundamental building blocks of fiber optic sensors and pointing out the many connections between these elements and fiber optic sensor technology. The second section focuses primarily on extrinsic or hybrid fiber optic sensors, with chapters covering intensity sensors for monitoring temperature, position and other environmental aspects; the Fabry-Perot based fiber optic sensor; grating and displacement fiber optic sensors; and polarization. Also discusses (intrinsic) fiber optic sensors where sensing occurs in the interaction of a light beam with an environmentally perturbed optical fiber. The final section illustrates the potential of fiber optic sensor technology through specific applications.

From the Back Cover
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