Fiber Optic Sensing and Intelligentization



Overview

The integration of artificial intelligence (AI) with optical fiber sensing (OFS) is transforming the capabilities of modern sensing systems, enabling smarter, more adaptive, and higher-performance solutions across diverse applications. This paper presents a comprehensive review of AI-enhanced OFS. The Fiber Optic Sensing Association (FOSA) is dedicated to accelerating the use of distributed and quasi-distributed optical fiber sensing technologies. At the same time, ML techniques have significantly improved the analysis of large, complex datasets generated by these sensors. The ESOT FiSensor. Over the last three decades, fiber optic sensors (FOS) have gained a lot of attention for their wide range of monitoring applications across many industries, including aerospace, defense, security, civil engineering, and energy.

Article Content

Turning Fiber into a Sensing System: The Magic of

Imagine a world where the Internet doesn''t just connect but senses—detecting earthquakes, monitoring battery health, or safeguarding

Artificial Intelligence and Machine Learning in Optical

The integration of artificial intelligence (AI) with optical fiber sensing (OFS) is transforming the capabilities of modern sensing systems, enabling

AI-Assisted Fiber Optic Sensors for Simultaneous Measurement

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The machine learning (ML) approach has brought a thoroughgoing rehabilitation in the field of fiber optics-based sensing mechanisms due to its capabilities of extracting a huge chunk of

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