

“Optical Fiber Sensors: A 40 Year Retrospective”

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Abstract

Over the past four decades, fiber optic sensors (FOS) have made a complete transition from basic lab prototypes to successful commercial products. A broad variety of commercial sensors and instruments are nowadays readily available, which enjoy increased acceptance and widespread use in different fields and industries. FOS solutions are commonly used in a variety of real-life applications—ranging from structural sensing and health monitoring of materials and structures; to downhole pressure and temperature sensors for oil and gas reservoir monitoring; to high voltage and high current sensing systems for the power industry; as well as biomedical sensing devices, among others. The commercialization road has been slow-moving and rocky at times, but always progressive and dotted with multiple successful companies and products.

This talk will provide a historical overview of the field over its past 40 years of evolution, and highlight its key technical milestones, significant developments and achievements, its associated impact on commercial solutions and products, as well as future outlook. A special mention will be made on the ongoing FOS activity in Brazil and its contributions to the field.