

Harbin Institute of Technology Fiber Optic Sensors



Overview

A series of Fiber Optic Sensors (FOSs) and its measurement systems with multi-parameters have been developed and applied for Structural Health Monitoring (SHM) of composite materials and structures. These FOSs can measure strain, temperature, and acoustic emission. Acoustic Emission (AE) is a term used to describe the sound waves produced when a material undergoes stress (internal change) as a result of an external force. Optical Fiber, Single-mode Fiber, Fabry-Perot Interferometer, Hollow-core Fiber, Fiber Bragg Grating, Optical Sensors, Fast Fourier Transform, Fusion Splicer, Thermal Expansion, Wavelength Shift, Interference Spectrum, Mach-Zehnder Interferometer, Multimode Fiber, Sensitivity Of The Sensor, Sensor. Department of Optoelectronics Science, Harbin Institute of Technology, Weihai, China Fabry-Perot Interferometer, Fiber Bragg Grating, Hollow-core Fiber, Single-mode Fiber, Activity Concentration, Adjacent Slices, Approximate Entropy, Average Amplitude, Average Wavelength, Axial Direction, Axial Motion, Beats. Our portfolio of distributed temperature, strain and acoustic sensing-based solutions help our customers to turn data into decisions. Monitor processes to sustain ecosystems, understand natural events and safeguard fragile places Help decarbonise the economy by enabling safe and economical carbon. Dr. Weijiang Xu is a Lecturer at the School of Optoelectronic Engineering, Guilin University of Electronic Technology.



Article Content

Oct 07, 2025

Harbin University of Science and Technology

Full-fiber optical current sensors utilize the effects of magnetic-field imposed on the change of polarization azimuth of light in the

Aug 29, 2025

Recent Advances in Fiber Optic Sensor Technology

In recent years, optical fiber sensing technology has resulted in significant advancements in various fields, including power,

Apr 18, 2026

Yan Li's lab | Harbin Institute of Technology at Weihai

Vernier-effect has been widely employed in interferometer-based optical fiber sensors to improve the sensitivities greatly.

May 06, 2026

Dong Yongkang

Professor of Harbin Institute of Technology - Cited by 8,632 - Optical fiber sensor - Nonlinear optics - Structural health monitoring

Apr 26, 2026

Harbin Institute of Technology Archives

Dr. Xu's recent advancements include bubble-tunable and calibration-free optical fiber sensors employing quantum dots-filled liquid

Mar 22, 2026

Jinlong XU | Doctor of Philosophy | Harbin Institute of

This study investigates integrating fibre optic sensing technology into the production process of concrete

Aug 29, 2025

Lei ZHANG | Harbin | Harbin Institute of Technology, Harbin | HIT ...

As miniature fibre-optic platforms, micro/nanofibres (MNFs) taper-drawn from silica fibres have been widely studied for applications

Sep 13, 2025

Drone Detection and Recognition Based on Fiber-Optic EFPI Acoustic ...

A fiber-optic EFPI acoustic sensor based on graphene diaphragm is designed and produced. Its phase sensitivity is -94.15 dB re 1

Dec 19, 2025

Bioinspired fiber-optic acoustic flow sensor for high-fidelity heart ...

Harbin Institute of Technology Harbin Institute of Technology Harbin Engineering University CAS - Suzhou Institute of Nano-Tech

Aug 29, 2025

Special Issue "Fiber Optic Sensors and Applications": An Overview

We present here the recent advance in exploring new detection mechanisms, materials, processes, and applications of fiber optic

Jun 30, 2026

Yundong ZHANG | Instructor | Doctor of Engineering | Harbin Institute ...

A miniature fiber-optic sensor fabricated by fuse splicing a section of hollow silica tube between two sections of single-mode fiber is

Nov 11, 2025

Cheng FU | Harbin Institute of Technology, Harbin | HIT | National Key ...

Distributed optical fiber strain sensing significantly increases the number of sensing points compared with FBG sensor, which makes

Aug 10, 2025

Recent Advances and Applications in Optical Fiber Sensing

Optical fiber sensing has rapidly evolved into a transformative technology, enabling breakthroughs across multiple

Jun 12, 2026

Haijin FU | Harbin Institute of Technology, Harbin | HIT

We propose a precision phase-generated-carrier (PGC) demodulation method with sub-nanometer resolution that avoids nonlinear

Sep 08, 2025

Optical Fiber Sensors and Sensing Networks: Overview of the Main

Optical fiber sensors present several advantages in relation to other types of sensors. These advantages are

Aug 14, 2025

Fiber Optic Sensors and Structural Health Monitoring

A series of Fiber Optic Sensors (FOSs) and its measurement systems with multi

Feb 21, 2026

Yi Liu | IEEE Xplore Author Details

Yi Liu is currently a Professor with the School of Science, Harbin Institute of Technology at Weihai, Weihai, China. His research

Jan 31, 2026

Advanced Fibre-Optic Sensing

In this review, we provide an overview of the latest developments in MMF sensors, ranging from conventional methods to those

Oct 21, 2025

Harbin Institute of Technology

Harbin Institute of Technology (HIT), overseen by the Ministry of Industry and Information Technology, is

Apr 08, 2026

Topic Editorial on Fiber-Optic Sensors

Fiber-optic sensors are highly significant in modern technology due to their unique abilities and versatility [1, 2, 3].

Jun 11, 2026

Optical Fiber Sensing

Abstract Nowadays, optical fiber sensing is an emerging and versatile technology thanks to continuous advances in

Aug 16, 2025

Xiaopeng HAN | Doctor of Philosophy | Harbin Institute

A high-temperature measurement fiber sensor based on the Vernier effect is proposed and demonstrated.

Aug 02, 2025

Tianyi Li | IEEE Xplore Author Details

Tianyi Li is currently working toward the master's degree in physics with the Harbin Institute of Technology, Weihai, China. Her

Nov 11, 2025

Leng JINSONG | Professor (Full) | Harbin Institute of

Smart materials and structures; Sensors and actuators such as fibre optic sensor, Electrorheological

Jan 29, 2026

A Differential Fiber-optic FPI Acoustic Sensor for UAV Detection with ...

Abstract This study designs and fabricates a differential fiber-optic Fabry-Pérot interferometric (FPI) acoustic sensor for detecting

Jun 10, 2026

Haijin FU | Harbin Institute of Technology, Harbin | HIT | Institute of ...

In fiber-optic interferometers with laser frequency modulation, carrier phase delay and accompanied optical intensity modulation

Oct 08, 2025

Advanced Fibre-Optic Sensing

Advanced Fibre-Optic Sensing Guest Editors Yongkang Dong, Harbin Institute of Technology, China Xinyu Fan, Shanghai Jiao Tong

Jun 16, 2026

Development of fiber optic sensor technology

Development of fiber optic sensor technology In industrial manufacturing, especially in automotive, microsystems and medical

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town,
7441, South Africa

This document is for informational purposes only. Specifications subject to
change without notice.

