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Fiber Optic Sensor Market Research Report- Forecast to 2030

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Description:

Global Fiber Optic Sensor Market Overview:

The Fiber Optic Sensor Market Size was valued at USD 2.12 Billion in 2021. The Fiber Optic Sensor market industry is projected to grow from USD 3.1 Billion in 2022 to USD 7.2 Billion by 2030, exhibiting a compound annual growth rate (CAGR) of 11.5% during the forecast period (2022 - 2030). The distributed fiber optic sensor converts light energy into an electrical signal. This mechanical device can sense the chemical energy components such as temperature vibrations and rotations signals. The versatile applications of these sensors are helping the Fiber Optic Sensor Market at a higher pace. The fiber optic sensor survives in higher temperatures; due to this, these are higher in demand in the oil and gas industries. The power and energy industries are also demanding fiber optic sensors. The need for these industrial verticals is driving the Fiber Optic Sensor Market.

Global Fiber Optic Sensor Market Overview

Source: Secondary Research, Primary Research, MRFR Database, and Analyst Review

Fiber Optic Sensor Market Trends

- The oil and gas industry is booming in the upcoming years across the globe and is expected to drive market growth.

The optic fiber sensor can survive in high temperatures. That is the reason that they are essential in the oil and gas industries. As the power and energy industry is escalating, the demand for the fiber optic sensor market is also increasing. The oil and gas extraction procedures require working at high temperatures. Some of these procedures are not suitable for humans. However, the fiber optic sensor is suitable in these situations. The oil and gas industry is booming in the upcoming years. It is driving more demand for the Distributed Fiber Optic Sensor Market.

Additionally, the other market-driving factor is the increase in civil engineering services. The requirement for fiber optic sensors in this service is high. The fiber optic sensor is suitable for the complex task involved in the civil engineering verticals. The growing demand for cost-effective monitoring devices raises the demand for the optic fiber sensor market. The Fiber Optic Sensor Market is one of the most reliable technologies in a challenging environment. It is a device that is useful when there is no possibility of human intervention. The sensing parameters of a fiber optic sensor in civil and oil-gas verticals are the major demand-driving factors.

Fiber Optic Sensor Market Segment Insights:

Fiber Optic Sensor Type Insights

The Fiber Optic Sensor market segmentation, based on Type, includes Intrinsic, and Extrinsic. The intrinsic sensors segment dominated the market in 2020, with a market share of above 98%. Intrinsic sensors are used to measure physical properties such as strain, pressure, and temperature. The main reason behind the dominance of intrinsic sensors is the early adoption of these sensors in the oil and gas industry.

Fiber Optic Sensor End-User Insights

Based on End-User, the Fiber Optic Sensor market segmentation includes Transportation, Medical, Defense, Industrial, and Oil and gas. Oil and gas accounted highest revenue share during the forecast period. The high demand for equipment used for exploration and drilling activities and the ability of fiber optic sensors to measure temperatures and strain at different locations through a single fiber using multiplexing technology has been driving the growth of this segment.

Figure 2: Fiber Optic Sensor Market, by type, 2021 & 2030 (USD Billion)

Fiber Optic Sensor Market, by type, 2021 & 2030

Source: Secondary Research, Primary Research, MRFR Database, and Analyst Review

Fiber Optic Sensor Regional Insights

By region, the study provides market insights into North America, Europe, Asia-Pacific, and the Rest of the World. Asia Pacific is expected to witness the highest compounded annual growth rate (CAGR) in the forecast period. It is

owing to, the deployment of fiber optic temperature sensors in automotive, chemicals, and oil & gas industries to measure temperature values regularly. Moreover, the rapidly developing automotive industry across India, Japan, and Korea is propelling the market growth for these sensors.

Figure 3: FIBER OPTIC SENSOR MARKET SHARE BY REGION 2021 (%)

FIBER OPTIC SENSOR MARKET SHARE BY REGION 2021

Source: Secondary Research, Primary Research, MRFR Database, and Analyst Review

North America is expected to capture the highest market share in the forecast period attributed to, the development of technologically advanced fiber-used sensors across healthcare and automotive sectors. Additionally, the leading manufacturers are focusing on widening their distribution network thus, boosting the market growth.

Europe is anticipated to witness steady growth, owing to the constant demand for precision fiber optic temperature sensors across industrial applications. Additionally, the presence of manufacturers including, Calnex Electronics Limited, Proximion AB, Scaime, Althen sensors & control, and others, is complementing the steady growth across European countries.

Fiber Optic Sensor Key Market Players & Competitive Insights

Major market players are spending a lot of money on R&D to increase their product lines, which will help the Fiber Optic Sensor market grow even more. Market participants are also taking a range of strategic initiatives to grow their worldwide footprint, with key market developments such as new product launches, contractual agreements, mergers and acquisitions, increased investments, and collaboration with other organizations. Competitors in the Fiber Optic Sensor industry must offer cost-effective items to expand and survive in an increasingly competitive and rising market environment.

The major market players are investing a lot of money in R&D to expand their product lines, which will spur further market growth for Fiber Optic sensors. With significant market development like new product releases, contractual agreements, mergers and acquisitions, increased investments, and collaboration with other organizations, market participants are also undertaking various strategic activities to expand their presence. To grow and thrive in a market climate that is becoming more competitive and growing, competitors in the Fiber Optic Sensor industry must offer affordable products.

Manufacturing locally to cut operating costs is one of the main business tactics manufacturers use in the Fiber Optic Sensor industry to benefit customers and expand the market sector. The Fiber Optic Sensor market has recently given medicine some of the most important advantages. Major hair care product market players, including Finisar Corporation (U.S.), Yokogawa Electric Corporation (Japan), Deltex Medical Group PLC (UK), Luna Innovations Incorporated (U.S.) and others, are attempting to increase market demand by funding R&D initiatives.

Finisar provides optical communications components and subsystems, as well as network test and monitoring systems. These products enable high-speed voice, video, and data communications for networking, storage, and wireless applications over Local Area Networks (LANs), Storage Area Networks (SANs), and Metropolitan Area Networks (MANs) using Ethernet, Fibre Channel, IP, SAS, SATA, and SONET/SDH protocols.

Also, Luna Innovations Incorporated provides optical technology products. The Company offers optoelectronics and fiber optic test products for the telecommunications industry, as well as distributes fiber optic sensing for the aerospace and automotive industries. Luna Innovations operates in the United States.

Key Companies in the Fiber Optic Sensor market include

- Finisar Corporation (U.S.)
- Yokogawa Electric Corporation (Japan)
- Deltex Medical Group PLC (UK)
- Luna Innovations Incorporated (U.S.)
- OmniSens S.A. (Switzerland)
- Sumitomo Electric Industries Ltd. (Japan)
- ABB Ltd. (Switzerland).

Fiber Optic Sensor Industry Developments

In April 2022, According to a recent report, Schlumberger and Sintela agreed to co-develop new fiber-optic solutions in multiple industrial markets. Schlumberger will take responsibility for the market and delivery of the solutions in the energy with carbon capture and storage (CCS) and geothermal industries. Sintela delivers combined solutions to other industrial needs. The solutions will integrate intellectual property (IP) from Sintela's distributed fiber-optic sensing (DFOS) portfolio with Opti Schlumberger's fiber-optic solutions IP. It will enable more straightforward and

cost-efficient fiber-optic interrogator deployments and innovative digital workflow capabilities to improve the operational performance of Schlumberger's customers.

Fiber Optic Sensor Market Segmentation

Fiber Optic Sensor type Outlook

- Intrinsic
- Extrinsic

Fiber Optic Sensor End-User Outlook

- Transportation
- Medical
- Defense
- Industrial
- Oil and gas

Fiber Optic Sensor Component Outlook

- Receiver
- Transmitter
- Fiber optic cable
- Optical amplifier

Fiber Optic Sensor Regional Outlook

- North America
 - US
 - Canada
- Europe

- Germany
- France
- UK
- Italy
- Spain
- Rest of Europe
- Asia-Pacific
 - China
 - Japan
 - India
 - Australia
 - South Korea
 - Australia
 - Rest of Asia-Pacific
- Rest of the World
 - Middle East
 - Africa
 - Latin America

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