

# Global Photonics Market - Forecasts from 2020 to 2025

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## Abstracts

The global photonics market is projected to grow at a CAGR of 5.85% to reach US\$829.775 billion by 2025, from US\$589.950 billion in 2019. The market for photonics is expected to surge during the forecast period owing to the extensive application of photonics in the various end-use industries. This includes life sciences, manufacturing, electronics, information and communications technology, photovoltaics, and security and defense. The market is expected to fuel in the forecast period with the growing demand for quality healthcare and its immense use in medical imaging. Furthermore, the growing awareness regarding early disease detection will further propel the demand for effective imaging, fueling the market growth with the growing demand for accuracy and sensitivity providing real-time information. The growing miniaturization of devices has given rise to the designing of photonic sensors in addition to other sensors, propelling the growth of the global photonics in the forecast period. Also, with the growing adoption of IoT and its advancements, the emergence of the internet of photonic things is boosting the market demand in the forecast period and in the upcoming years.

Growing concerns regarding safety and security of the industry personnel and homeland security are burgeoning the market demand for photonics in the next five years. Moreover, with the growing trend of adoption of silicon photonics for the enhancement of the speed of data transfer is providing an impetus for the market to thrive at a rapid pace with the growing semiconductor industry. On the basis of geography, the European region is expected to hold a significant share followed by the Asia Pacific to be the fastest-growing in the global photonics industry during the forecast period.

Growing innovations in silicon photonics is driving the growth of the photonics industry

round the globe in the forecast period.

The silicon integrated circuit and the semiconductor laser are the two most important inventions of the 20th century which form the basis of silicon photonics technology. Replacements have been made where tiny silicon chips are used in place of copper and it consists of built-in Indium phosphide (InP) lasers that are capable of data transfer at a speed of up to 100 Gbps by using optical fibers and is supporting the world's unsatisfying data demand. In addition to providing optical connections, silicon photonics is also allowing the computers to exascale their computing speed.

Until now, the method of attaching the laser light sources to the silicon was done in a complicated manner, however, a novel approach has been designed which is currently in the research phase. The process for the deposition of lasers onto the silicon chip makes use of nanolasers which can be directly deposited onto the chip and also shows a great site-selective integration on the silicon wafer. Such novel approaches in the field of silicon photonics promises for the processing which is equivalent to the speed of light with greater energy efficiency as well. Hence, rising innovations in silicon photonics have a high impact in promoting the growth of the global photonics market.

The use of photonics for wider end-use industrial applications is propelling the growth of the global photonics market in the forecast period.

The photonics technology finds immense utility in a range of operations and is proving to be a versatile technology with time. Additionally, the technology is gaining popularity which is poised to provide connectivity everywhere possible with continuous improvements in issues like bandwidth, power dissipation, and signal integrity. Some of the anticipated potential applications of this enabling technology include augmented reality goggles, lab-on-chip applications, portable real-time analysis biosensors for molecular and cellular analysis, development of high-speed supercomputers known as quantum computing as well. Industries like aerospace and defense are also showing interest in silicon photonics due to the reduced-size, less power consumption and low weight of these devices. Also, these devices are highly immune to electromagnetic interference which may otherwise cause a device to underperform. With the advent of the designing of autonomous vehicles, the photonics technology will provide benefits in activities like car-to-car communication, navigation, and mapping. Hence, the potential use of photonics in varied industries is fueling the growth of the global photonics market in the forecast period and in the upcoming years.

Segmentation:

## By Application

Optical Components and Systems

Solar Energy

Flat Panel Displays

Lighting

Information Technology

Optical Communications

Medical Engineering and Life Sciences

Measurement and Machine Vision

Production Technology

## By Industry Vertical

ICT

Life Sciences

Photovoltaics

Manufacturing

Security and Defense

Electronics

## By Geography

North America

USA

Canada

Mexico

South America

Brazil

Argentina

Others

Europe

UK

Germany

France

Others

Middle East and Africa

UAE

Israel

Others

Asia Pacific

Japan

China

India

South Korea

Others

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