Nanophotonics Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

Market Report | 2023-11-02 | 140 pages | IMARC Group

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Report description:

The global nanophotonics market size reached US$ 13.8 Billion in 2022. Looking forward, IMARC Group expects the market to reach US$ 22.1 Billion by 2028, exhibiting a growth rate (CAGR) of 8.2% during 2022-2028.

Nanophotonics refers to a field of nanophysics that studies the interaction of photons with nano-structures. It usually consists of metallic components that can focus and transport light through the surface plasmon polaritons (SPPs) and includes quantum dots, plasmonics, nanotubes, nanoribbons and photonic crystals. They are used for the manufacturing of light-emitting diodes (LED), organic LEDs (OLED), near field optics, photovoltaic (PV) cells and optical components. Nanophotonics also facilitates the manufacturing of these advanced electronics with compressed size, higher functionalities, improved data transmission speed and longer operational life.

Nanophotonics Market Trends:
The global nanophotonics market is primarily being driven by the widespread adoption of nanophotonics for electronics, communication, biotechnological, defense and solar power conversion applications. In line with this, the growing adoption of LED in consumer electronics is also driving the market growth. Nanophotonics offer solid-state lighting with high thermal conductivity and modulation rate, thereby improving the operational efficiency of the devices and the quality of light emitted. Furthermore, manufacturers of nanophotonic products are integrating small-scale power electronics and transistors on a single chip for higher bandwidth and faster data transmission speed. This enables the nanophotonic integrated circuits (ICs) to communicate directly with other devices using light. Additionally, various product innovations, such as the development of ultra-thin nanomaterials and atomic-thin metal halides, are acting as other growth-inducing factors. These nanomaterials are used in sensitive optical sensors used for the detection of environmental gases. Other factors, including the widespread adoption of nanophotonics for chemical, biosensing and information technology (IT) applications, along with extensive research and development (R&D) activities, are anticipated to drive the market further across the globe.

Key Market Segmentation:
IMARC Group provides an analysis of the key trends in each sub-segment of the global nanophotonics market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on product type, nanophotonic material and end use.

Breakup by Product Type:

LED
OLED
Near Field Optics
Photovoltaic Cells
Optical Amplifiers
Optical Switches
Others

Breakup by Nanophotonic Material:

Plasmonics
Photonic Crystals
Nanotubes
Nanoribbons
Quantum Dots
Others

Breakup by End Use:

Telecommunication
Consumer Electronics and Entertainment
Digital Signage
Lighting
Bio-Imaging
Others

Breakup by Region:

North America
United States
Canada
Asia-Pacific
China
Japan
India
South Korea
Australia
Indonesia
Others
Europe

Germany
France
United Kingdom
Italy
Spain
Russia
Others
Latin America
Brazil
Mexico
Others
Middle East and Africa
Competitive Landscape:
The competitive landscape of the industry has also been examined along with the profiles of the key players being Anders Electronics PLC, Cree Inc., Nanosys Inc., Novaled GmbH (Samsung SDI Co.), OSRAM Opto Semiconductors GmbH, Lumileds Holding B.V., Schott AG, Sharp Corporation, STMicroelectronics N.V., Veeco Instruments Inc. and WITec Wissenschaftliche Instrumente und Technologie GmbH.

Key Questions Answered in This Report

1. How big is the global nanophotonics market?
2. What is the expected growth rate of the global nanophotonics market during 2023-2028?
3. What are the key factors driving the global nanophotonics market?
4. What has been the impact of COVID-19 on the global nanophotonics market?
5. What is the breakup of the global nanophotonics market based on the product type?
6. What is the breakup of the global nanophotonics market based on the nanophotonic material?
7. What is the breakup of the global nanophotonics market based on the end use?
8. What are the key regions in the global nanophotonics market?
9. Who are the key players/companies in the global nanophotonics market?

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