

Adaptive Optics Market Drivers, Merger, Acquisition, SWOT Analysis, PESTELE Analysis and Business Opportunities by 2030

Rising number of clinical trials and non-invasive procedures is a key factor driving adaptive optics market revenue growth

VANCOUVER, BC, CANADA, August 1, 2022 /EINPresswire.com/ -- The global [adaptive optics market](#) size was USD 237.64 Million in 2021 and is expected to register a revenue CAGR of 8.9% during the forecast period, according to latest analysis by Emergen Research. Rising prevalence of retinal diseases and significant investments in research & development initiatives are key

factors driving market revenue growth. High demand for adaptive optics-based technologies, especially from the medical sector, owing to ability of using image retina with a resolution close to diffraction limit, thereby being an effective auxiliary tools for diagnosis and examination of retinal diseases. Growing prevalence of various retinal diseases has led to rapid adoption of

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Market Size – USD 237.64 Million in 2021, Market Growth – at a CAGR of 8.9%, Market Trends – Significant investments in research & development activities”

Emergen Research

adaptive optics for in vivo retinal imaging. In addition, implementation of adaptive optics in ophthalmoscopes enables retinal imaging at a cellular level, thereby increasing demand for such instruments in the biomedical industry for scientific research purposes. According to American Academy of Ophthalmology (AAO), Age-related Macular Degeneration (AMD) is responsible for vision loss in 28.1% of non-Hispanic whites, 14.5% of Hispanics, and 7.8% of African Americans, who suffer from visual impairments. Furthermore, Glaucoma is responsible for

vision impairment in 2.3% of non-Hispanic whites, 11.3% of African Americans, and 6.4% of Hispanics who suffer from visual impairment

The Adaptive Optics Market report presents comprehensive information covering insightful data



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for businesses and investors for the time period of 2022-2030. The report studies the historical data of the Adaptive Optics market and offers valuable information about the key segments and sub-segments, revenue generation, demand and supply scenario, trends, and other vital aspects. The report offers an accurate forecast estimation of the Adaptive Optics industry based on the recent technological and research advancements. It also offers valuable data to assist the investors in formulating strategic business investment plans and capitalize on the emerging growth prospects in the Adaptive Optics market.

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Top competitors of the Adaptive Optics Market profiled in the report include:

Teledyne Technologies Inc., Imagine Optic, Flexible Optical B.V., Northrop Grumman, ALPAO, Phasics S.A, Iris AO, Inc., Adaptive, Boston Micromachines Corporation, and Thorlabs, Inc.

Some Key Highlights From the Report

The wavefront sensors segment accounted for a significant revenue share in 2021 owing to provision of direct measurement of phase and intensity of optical wavefront. Increasing utilization of advanced optics in optical metrology and laser diagnostic is driving revenue growth of this segment. Shack-Hartmann Wavefront Sensor (SHWFS) is a form of wavefront sensor that combines a 2D detector with a lenslet array to measure distortion of aberrated wavefront emanating from the eye.

The microscopy segment accounted for a significant revenue share in 2021. Adaptive optics is an important technique for high resolution microscopy, correcting aberrations caused by specimen refractive index structure, which enables various application requiring images deep within biological tissue specimens.

The military & defense segment accounted for a significant revenue share in 2021. Rapid technological advancements in addition to various development of state-of-the art defense weapons as well as sophisticated guidance systems are some of the major factors driving revenue growth of this segment. High demand for adaptive optics in surveillance and biometric systems in military industry owing to provision of precise and sharp images. On 16 June 2022, HENSOLDT, a sensor solutions provider and Iveco Defence Vehicles (IDV), an Italian automotive manufacturer developed first Military Utility Vehicle (MUV) operational sensor composite vehicle, which would be presented at EUROSATORY 2022 in Paris. MUV is designed to be used in civilian and military sectors for reconnaissance and surveillance purposes as well as convoy protection and self- protection.

The North America market accounted for a significant revenue share in 2021. Increasing research & development initiatives for adaptive optics in various research centers and institutions is driving revenue growth of market. Rising military uses of adaptive optics for

monitoring, surveillance, and security purposes is one of the major factor contributing to market growth in region. The U.S. Air Force Research Laboratory (AFRL) utilizes adaptive optics for detecting and capturing images of space-based objects as well as aid in tracking small and maneuverable satellite. On 28 January 2022, Space Micro, which is owned by Voyager Space, has been given a contract by U.S. Air Force AFWERX program to develop an air-to-space laser communications systems. The company is collaborating with Rhea Space Activity (RSA) and Johns Hopkins University (JHU) to develop an adaptive optics solution to transmit a laser signal through turbulence unhindered.

On 18 February 2022, an international team of astronomers using International Gemini Observatory, which is a program of the U.S. National Science Foundation's NOIRLab, captured crystal-clear images of two wiggling stellar jets from nearby forming stars. Astronomers used adaptive optics system that reduces distortion. Images were captured by Gemini South Adaptive Optics Imager, which is an instrument on Gemini South telescope. Imaging system is designed to work with Gemini Multi-Conjugate Adaptive Optics System to reduce distortion and blurring from atmospheric turbulence. The Gemini Observatory is owned and operated by an international partnership that includes Canada, the U.S., Chile, Argentina, Brazil, and the Republic of Korea.

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The report further offers a complete value chain analysis along with an analysis of the downstream buyers and upstream raw materials. The study focuses on global trends, regulatory frameworks, and macro- and micro-economic factors. The report also provides an extensive analysis of the segment and sub-segmented expected to dominate the market over the projected period. The report offers a forecast estimation of the market with regards to the analysis of the market segmentation, including product type, end-user industries, application spectrum, and other segments.

Emergen Research has segmented the global adaptive optics market based on component, application, end-users, and region:

Component Outlook (Revenue, USD Million; 2019-2030)

Wavefront sensors

Deformable mirrors

Control system

Application Outlook (Revenue, USD Million; 2019-2030)

Microscopy

Laser application

Ophthalmology

Others

End-Users Outlook (Revenue, USD Million; 2019-2030)

Biomedical

Military & defense

Industrial & manufacturing

Consumer electronics

Others

Regional Analysis of the Adaptive Optics Market:

North America (U.S., Canada)

Europe (U.K., Italy, Germany, France, Rest of EU)

Asia Pacific (India, Japan, China, South Korea, Australia, Rest of APAC)

Latin America (Chile, Brazil, Argentina, Rest of Latin America)

Middle East & Africa (Saudi Arabia, U.A.E., South Africa, Rest of MEA)

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Market Overview:

The research report on the Adaptive Optics market is formulated through extensive primary and secondary research along with qualitative and quantitative analysis of vital aspects of the market. The insightful data is further validated and verified by the industry professionals. The report strives to offer deeper insights into the overall market scenario of the Adaptive Optics business sphere.

Key Objectives of the Report:

Analysis and estimation of the Adaptive Optics market size and share for the projected period of 2022-2030

Extensive analysis of the key players of the market by SWOT analysis and Porter's Five Forces analysis to impart a clear understanding of the competitive landscape

Study of current and emerging trends, restraints, drivers, opportunities, challenges, growth prospects, and risks of the global Adaptive Optics market

Analysis of the growth prospects for the stakeholders and investors through the study of the promising segments

Strategic recommendations to the established players and new entrants to capitalize on the emerging growth opportunities

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Eric Lee
Emergen Research
+91 90210 91709
sales@emergenresearch.com
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