Odor Sensor Market Expected to Reach $19.4 Billion by 2031

The odor sensor market size was valued at $1.5 billion in 2021, and is estimated to reach $19.4 billion by 2031, growing at a CAGR of 29.4%

WILMINGTON, DE, UNITED STATES, December 10, 2025 /EINPresswire.com/ -- The odor sensors market share is expected to witness considerable growth in coming years, owing to a rise in awareness of air pollution and its negative healthcare effects, rising demand for smart home and building automation, and growing demand for food safety and quality control which will help propel the market positively during the forecast.

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Odor sensors are devices designed to detect and quantify the presence of specific volatile organic compounds (VOCs) in the air. They use various technologies such as metal oxide semiconductors, quartz crystal microbalance, and electronic noses to identify and measure the concentration of target odors. Odor sensors are used in applications such as environmental monitoring, food safety and quality control, industrial process control, and medical diagnosis.

Odor sensors can be classified into two main types: conducting polymer sensors and metal oxide sensors. Conducting polymer sensors are based on the principle of changes in electrical conductivity in response to exposure to target odors, while metal oxide sensors use changes in electrical resistance to detect odor compounds. There are also other types of odor sensors, such as piezoelectric sensors and surface acoustic wave (SAW) sensors, that use different physical phenomena to detect odor compounds. The choice of an odor sensor depends on factors such as the target odor, the desired detection range, the operating environment, and cost considerations.

Odor sensors play a crucial role in various fields such as agriculture, water treatment, and air quality monitoring. In agriculture, odor sensors can be used to detect and quantify harmful gases emitted from livestock farms, which can be harmful to both human health and the environment. In water treatment, odor sensors can be used to monitor the quality of drinking water and to ensure that it is free from any unpleasant odors. In air quality monitoring, odor sensors can be used to detect and quantify the presence of hazardous air pollutants that can cause respiratory problems and other health issues.

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The market for odor sensors is projected to expand significantly during the forecast period due to increased awareness of air pollution and its negative effects on health, an increase in demand for smart homes and building automation, and a rise in concerns about food safety and quality management. In addition, during the forecast period, significant possibilities for the expansion of the odor sensor market are anticipated from the rise in applications in healthcare and medical diagnosis. However, some of the market growth restraints for odor sensors during the forecast period are their high cost and technological limitations in emerging economies.

On the basis of sensor type, the chemical sensors segment was the highest contributor to the odor sensor market analysis n 2021. On the basis of instrument type, the multiodor sensors segment was the highest revenue contributor in 2021. On the basis of application areas, the medical diagnosis segment was the highest revenue contributor in 2021. On the basis of the end-use industry, the healthcare segment was the highest revenue contributor in 2021. On the basis of region, Asia-Pacific remains a significant participant in the odor sensor market.

According to Himanshu Jangra, Lead Analyst, Semiconductor and Electronics, at Allied Market Research, “The odor sensor market share is expected to witness considerable growth in coming years, owing to rise in awareness of air pollution and its negative healthcare effects, rising demand for smart home and building automation, growing demand for food safety and quality control which will help propel the market positively during the forecast.”

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KEY FINDINGS OF THE STUDY

The chemical sensors segment was the highest revenue contributor to the odor sensor market trends.
The multiodor sensors segment was the highest revenue contributor to the odor sensor industry, with $1,000.5 million in 2021.
The medical diagnosis and air control and environmental monitoring segments collectively accounted for around 53.8% of the odor sensor market share in 2021.
The healthcare segment was the highest revenue contributor to the odor sensor market growth, with $382.0 million in 2021.
Asia-Pacific was the highest revenue contributor, accounting for $676.8 million in 2021.

The key players profiled in the report include Aeroqual, Alphasense, Aryballe Technologies, Comon Invent B.V., Dräger , Electronic Sensor Technology, Figaro Engineering Inc., Honeywell International Inc., Membrapor, Odotech Inc. (Envirosuite Ltd), Panasonic Corporation, and The

eNose Company. Market players have adopted various strategies such as product launch, collaboration, partnership, joint venture, and acquisition to expand their foothold in the odor sensors market. In July 2021, Panasonic launched Laser Type Particulate Matter Sensor which has a very small footprint of W37 x D37 x H12 mm, and can be used to detect a wide variety of particulate matter including but not limited to dust, fly ash, soot, smoke, aerosols, fumes, mists, and condensing vapors, solid fuels, construction materials, cooking/smoking of plant matter, fireplaces and furnaces, house/forest fires, waste incineration and much more. In addition, In November 2020, Honeywell expanded its holistic healthy buildings' air quality offering to help improve and measure commercial building indoor air quality with the introduction of Honeywell Electronic Air Cleaners (EACs) with UV Systems and a line of indoor air quality (IAQ) sensors. Honeywell EACs with UV help remove impurities from the air as well as provide filtration and disinfection, without significantly impeding air flow.

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