Silicon EPI Wafer Market Size Worth US$ 4,997.32 Million By 2028 | CAGR 8.8%: The Insight Partners

The global silicon EPI wafer market was valued USD 2,805.61 million in 2021.

The Insight Partner Logo

NEW YORK, UNITED STATES, February 27, 2023 /EINPresswire.com/ -- According to the new research report titled "Silicon EPI Wafer Market Forecast to 2028 – COVID-19 Impact and Global Analysis," published by The Insight Partners, the market is expected to reach US$ 4,997.32 million by 2028, registering a CAGR of 8.8% from 2022 to 2028.

Silicon EPI Wafer Market - Strategic Insights

Report Coverage Details

Market Size Value in US$ 3,008.57 Million in 2022
Market Size Value by US$ 4,997.32 Million by 2028
Growth rate CAGR of 8.8% from 2022 to 2028
Forecast Period 2022-2028
Base Year 2022
No. of Pages 184
No. of Tables 116
No. of Charts & Figures 93
Historical data available Yes
Segments covered Wafer Size, Application, End User, and Type
Regional scope North America, Europe, Asia Pacific, Middle East & Africa, South & Central America
Country scope US, Canada, Mexico, UK, Germany, Italy, France, India, China, Japan, South Korea,

Australia, UAE, Saudi Arabia, South Africa, Brazil, Argentina
Report coverage Revenue forecast, company ranking, competitive landscape, growth factors, and trends

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An epitaxial wafer, also known as an EPI wafer, is created by placing a layer of epitaxial silicon single crystal on a single crystal silicon wafer. This wafer helps regulate doping profiles that are difficult to manage using conventional techniques such as diffusion and ion implantation. Silicon epitaxial wafers are also the main component used in producing a wide variety of semiconductor devices that have consumer, industrial, military, and space electronics applications. It is used in bipolar and metal-oxide-semiconductor (MOS) integrated circuit (IC) substrates and in diode and transistor elements.

Epiel is a specialized manufacturer of silicon epitaxial wafers, and it also provides epitaxial services for the semiconductor industry. The company offers a wide choice of custom silicon epitaxial wafers in sizes ranging from 3" (76 mm) to 8" (200 mm) for some important microelectronics applications, such as discrete power devices, integrated circuits, and sensors. In 2020, Qromis, a US-based start-up, signed a licensing arrangement with Japan's Shin-Etsu Chemical to produce substrates and epitaxial wafers for GaN power/RF electronics, LED devices, and other devices. The company already made 6- and 8-inch GaN-ready QST substrates available and 6- and 8-inch "templates" with 5- and 10-micron GaN layers.

The silicon EPI wafer market is segmented into wafer size, application, industry, and type. Based on wafer size, the silicon EPI wafer market is segmented into 6-inch, 8-inch, 12-inch, and others. Based on application, the silicon EPI wafer market is categorized into LED, power semiconductor, and MEMS-based device. On the basis of end user, the silicon EPI wafer market is segmented into consumer electronics, automotive, healthcare, aerospace and defense, and others. Based on type, the silicon EPI wafer market is bifurcated into heteroepitaxy and homoepitaxy. Based on geography, the silicon EPI wafer market is segmented into North America, Europe, APAC, the Middle East & Africa, and South America.

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Key Findings of Silicon EPI Wafer Market Study:

The global silicon EPI wafer market study is segmented into five major regions—North America, Europe, Asia Pacific (APAC), the Middle East & Africa (MEA), and South America (SAM). Asia Pacific held 54.0% of the silicon EPI wafer market share majlorly due to the presence of a large number of consumer electronics companies/manufacturers, such as Samsung Electronics, Hon Hai Precision, Sony, Panasonic, Lenovo Group, Mitsubishi Electric, and Toshiba in the region. Many of these firms were compelled to suspend manufacturing early in the outbreak, and this, combined

with global travel restrictions, resulted in major supply shortages in the region. Furthermore, efficient energy policy execution requires stable political conditions. Thus, political stability and administrative efficiency can determine the success of the renewable energy transition by increasing policy credibility. North America held 23.9% of the silicon EPI wafer market share, followed by Europe, the Middle East & Africa, and South America.

Further, the conflict between Russia and Ukraine can potentially cause chip shortages. The most immediate risk lies with the status availability of raw materials, such as neon and palladium, used in producing semiconductors. Russia supplies more than 40% of the world's palladium, and 70% of the world's neon is made in Ukraine. Chip producers keep one to six months' worth of neon on hand, and these businesses fail to produce semiconductors if they run out of neon. Impacts on semiconductor output in the short term are anticipated to be moderate. However, in the long run, chipmakers, and consumers are likely to experience huge adverse on raw material costs and supply.

Silicon EPI Wafer Market: Competitive Landscape and Key Developments

Shin-Etsu Chemical Co., Ltd.; SUMCO Corporation; GlobalWafers Japan Co., Ltd.; Siltronic AG, and SK Siltron Co., Ltd. are a few key silicon EPI wafer market players. Several other major silicon EPI wafer market players were also analyzed for a holistic view of the silicon EPI wafer market size and its ecosystem.

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In 2022, SK Siltron Co. Ltd. announced a plan to spend US $810 million on expanding its domestic capacity by the first half of 2024, from which it plans to ramp up output.

In 2020, Applied Materials signed an agreement with a Dutch multinational company, BE Semiconductor, that designs and manufacturers semiconductor equipment. The agreement is expected to create a comprehensive equipment solution for die-based hybrid bonding and a new chip-to-chip interconnect technology that will allow heterogeneous chip and subsystem designs for applications including AI, high-performance computing, and 5G.

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