

Graphene - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Graphene Market size is estimated at USD 1.65 billion in 2025, and is expected to reach USD 9.28 billion by 2030, at a CAGR of 41.22% during the forecast period (2025-2030).

Key Highlights

- During the COVID-19 pandemic, the demand for graphene experienced volatility from various industries. However, the demand for graphene has seen a rise from sectors such as healthcare and biomedical as various countries have lifted lockdowns.
- The demand for graphene is majorly driven by its increased utilization from aerospace and electronics and communication industry.
- However, the high cost of production and the competition from existing materials is likely to hamper the market growth.
- The development of graphene nanodevices for DNA sequencing and adoption of graphene in photodetectors are expected to create growth opportunities for the market studied.
- The Asia-Pacific region is expected to become the largest region consuming graphene. The fast-developing electronics & telecommunication industry in China, Japan, India, and South Korea is supporting the market.

Graphene Market Trends

Electronics and Telecommunication Segment to Dominate the Market

- Graphene and its derivatives are extensively used in the electronics and telecommunications industry. This sector harnesses

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graphene for a myriad of applications, such as unbreakable touchscreens, transistors, enhanced lithium-ion batteries, optical electronics, printed electronics, and conductive inks.

- Graphene has several useful properties, including high mechanical strength, electron mobility, and superior thermal conductivity.
- The electronics industry stands as one of the largest and fastest-growing sectors globally. In the digital age, electronic devices play a pivotal role. The demand for these gadgets is set to surge, solidifying their status as a key economic driver globally.
- In order to meet the growing demand, various companies have invested in the setting up of electronic manufacturing plants in recent times. Some of the notable investments include:
 - In August 2023, in a strategic move, Taiwanese chip giant TSMC pledged USD 3.8 billion for its inaugural European factory, to be based in Germany. This investment follows significant support from the state, with the USD 11 billion facility corresponding to Europe's initiative to localize its supply chains.
 - In June 2024, STMicroelectronics NV announced its intention to invest EUR 5 billion (USD 5.4 billion) in a chip manufacturing and packaging facility in Catania, Italy. This multi-year project is receiving partial funding from the European Union's Chips Act. The Italian government is set to provide STMicro with EUR 2 billion in subsidies.
- Furthermore, various governments have started various initiatives in order to develop the electronic product manufacturing. For instance, in May 2024, the UK government unveiled plans to establish the UK Semiconductor Institute. Designed as a central hub for researchers, academics, and both public and private entities, this independent institute will play a pivotal role in executing the government's ambitious national strategy.
- All such factors are expected to drive the consumption of graphene in the electronics and telecommunication industry.

Asia Pacific to Dominate the Market

- Asia-Pacific leads the graphene market, driven by swift industrialization and a surge in graphene-based application patents. As a result, graphene oxide is set for significant growth.
- China has one of the world's largest electronics production bases and offers tough competition to the existing upstream producers, such as South Korea, Singapore, and Taiwan. Electronic products, such as smartphones, OLED TVs, and tablets, have the highest growth rates in the consumer electronics segment of the market in terms of demand.
- In the electronics industry, the usage of graphene has been growing at a rapid pace owing to its various technological advantages. Some of the notable investments in recent times include:
 - In January 2024, researchers from China and the United States jointly created a new type of stable semiconductor graphene, which performs ten times higher than silicon and 20 times larger than the other two-dimensional semiconductors.
 - The Medical device manufacturing and healthcare industry is another major consumer of graphene in recent times. There has been growing investments in the medical device production in recent times. For instance:
 - In May 2024, Omron Healthcare, a Japanese company, announced that it would establish a medical device manufacturing plant in Tamil Nadu, India for USD15.5 million
 - In July 2023, the Shenzhen Institute of Advanced Technology commenced mass production of its newly developed magnetic resonance imaging (MRI) technology.
- All these factors are expected to drive the demand of graphene in the Asia-Pacific region.

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Graphene Industry Overview

The graphene market is consolidated in nature. The major players (not in any particular order) include NanoXplore Inc., The Sixth Element (Changzhou) Materials Technology Co. Ltd, NeoGraf, Morsh (Ningbo Moxi Technology Co. Ltd), and Xiamen Knano Graphene Technology Co. Ltd .

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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