

Graphene Market By Type (Mono-layer & Bi-layer Graphene, Few Layer Graphene (FLG) , Graphene Oxide (GO) , Graphene Nano Platelets (GNP)) , By Application (Electronics, Composites, Energy storage, Paint, Coatings & Inks, Tires, Others) : Global Opportunity Analysis and Industry Forecast, 2024-2028

Market Report | 2024-09-01 | 410 pages | Allied Market Research

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Report description:

The graphene market was valued at \$0.3 billion in 2023, and is projected to reach \$1.4 billion by 2028, growing at a CAGR of 34.6% from 2024 to 2028.

Graphene is a single layer of carbon atoms arranged in a two-dimensional honeycomb lattice. It's one of the thinnest, strongest, and most conductive materials discovered to date, with remarkable mechanical, thermal, and electrical properties. Its unique characteristics make it highly versatile, offering the potential to revolutionize materials science by enabling the development of lighter, stronger, and more efficient technologies.

The growth of the global graphene market is driven by surge in demand for lightweight and strong materials from industries such as aerospace, automotive, and construction, where lightweight yet strong materials are essential for improving fuel efficiency and durability. In addition, increase in penetration of electronics and energy storage significantly contributes toward the growth of the global market. According to a 2023 study, approximately 3,756 global consumer electronics manufacturing businesses are running across the world as of 2024. Furthermore, graphene's biocompatibility and antibacterial properties are driving interest in medical fields, including drug delivery systems, biosensors, and tissue engineering, thereby augmenting the market growth. Moreover, increase in environmental and energy efficiency goals is fueling the demand for graphene. This is attributed to the fact that graphene exhibits the potential to reduce material usage and increase energy efficiency supports carbon reduction goals. However, high production cost of graphene significantly hampers the growth of the global market. In addition, the availability of established materials like carbon fibers, silicon, and traditional polymers acts as a key deterrent factor of the global market. On the contrary, continued R&D activities are lowering the costs and improving the scalability of graphene production, which are expected to offer lucrative opportunities for the expansion of the global market during the forecast period.

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The global graphene market is segmented into type, application, and region. By type, the market is classified into mono-layer & bi-layer graphene, few layer graphene (FLG) , graphene oxide (GO) , and graphene nano platelets (GNP). On the basis of application, it is divided into electronics, composites, energy storage, paint, coatings and inks, tires, and others. Region wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

Key Findings

By type, the graphene nano platelets (GNP) segment held the highest market share in 2023, and is expected to maintain its leadership status from 2024 to 2028.

Depending on application, the energy storage segment garnered the largest share in 2023, and is anticipated to dominate during the forecast period.

Region wise, Asia-Pacific exhibited the highest growth, in terms of revenue, in 2023.

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Competition Analysis

Competitive analysis and profiles of the major players in the global graphene market include ACS Material, Applied Graphene Materials, CVD Equipment Corporation, Directa Plus S.p.A., G6 Materials Corp, Graphenea, Grolltex Inc, NANOTEK INSTRUMENTS INC, NanoXplore Inc., and Vorbeck Materials Corp. These major players have adopted various key development strategies such as business expansion, new product launches, and partnerships to sustain the intense competition and gain a strong foothold in the global market.

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 - CVD Equipment Corporation
 - Directa Plus S.p.A.
 - G6 Materials Corp
 - Graphenea
 - Grolltex Inc

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- NANOTEK INSTRUMENTS INC
- NanoXplore Inc.□
- Vorbeck Materials Corp.

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