

# **Graphene Market Size, Share & Trends Analysis Report By Product (Graphene Oxide, Graphene Nanoplatelets, Reduced Graphene Oxide), By Application (Electronics, Composites, Energy), By Region, And Segment Forecasts, 2022 - 2030**

<https://marketpublishers.com/r/GA6A33EF7BEEN.html>

Date: December 2022

Pages: 103

Price: US\$ 5,950.00 (Single User License)

ID: GA6A33EF7BEEN

## **Abstracts**

This report can be delivered to the clients within Immediate

### **Graphene Market Growth & Trends**

The global graphene market size is expected to reach USD 3.75 billion by 2030, according to a new report by Grand View Research, Inc. The market is anticipated to expand at a CAGR of 45.9% from 2022 to 2030. This growth can be attributed to the growing electronics industry in emerging economies and high penetration in composites application. Furthermore, the product has also caught the attention of the battery industry owing to its remarkable thermal & electrical conductivity and chemically inert nature.

The market is also witnessing increasing investments in research & development work for increasing the penetration of graphene in batteries. For instance, in 2022, Anaphite, a Bristol-based company, secured USD 4.3 million to invest in improving the EV batteries manufactured using graphene. The company is expected to use the material in lithium-ion batteries for EVs (electric vehicles). Furthermore, the technology is expected to be ready for commercial EV manufacturing by 2028.

The energy sector is one of the key application segments owing to the rising application of graphene-based components for energy storage and energy generation. Graphene coatings are used in various batteries, conductors, and generators to improve energy

efficiency and the overall performance of devices. The product is also used in the de-icing of paints and is responsible for improving wind turbine efficiency

Graphene nanoplatelets and graphene films are the two major products, which are primarily used in electronic goods and devices. The demand for graphene films is expected to gain momentum owing to the growing need for protective coatings on smartphones and flexible electronic devices. This has resulted in an increased production capacity of graphene-based products.

Apart from graphite, other raw materials required for the production of graphene majorly depend on the type of manufacturing process used. Raw materials including copper, sulfuric acid, nitric acid, and hydrazine are either used by commercial manufacturers or research laboratories depending on the production process used. BASF SE, Moon & Star, and Glencore are some of the key raw materials suppliers.

The global graphene market is highly concentrated and is majorly consolidated in developed regions such as North America and Europe. The market exhibits the presence of a large number of suppliers and manufacturers in China. The U.S., UK, Canada, and other developed countries have been major markets owing to the increasing efforts on research and development undertaken by several multinational corporations, research institutes, and manufacturers.

### Graphene Market Report Highlights

Graphene oxide accounted for a revenue of USD 44.5 million in 2021. The product is used in a wide range of applications, including transparent conductive films for various smartphones, supercapacitors, optoelectronic devices, flexible electronic devices, and medical devices. Its various superior characteristics including superior thermal and electrical conductivity, transparency, permeability, and strength play a major role in boosting its demand

The energy application segment is expected to grow at a CAGR of 35.4% over the forecast period. Electrochemical energy storage solutions are expected to drive the consumption of graphene in the energy sector over the forecast period. Furthermore, energy is a high-potential segment for the market, and continuous innovations in the development of the product are expected to help generate energy from renewable sources

North America is expected to grow at a CAGR of 42.8% over the forecast

period. The market is witnessing growth in the composites sector owing to the rising demand from aircraft manufacturing and automobile industries. Large-scale aircraft manufacturers including Boeing are focusing on lightweight composite materials such as graphene to improve the efficiency and performance of their aircraft. The product is becoming increasingly popular owing to its superior characteristics and manufacturers are thus expected to increase product penetration in various applications

The market is highly consolidated as well as concentrated. The major share of key players is concentrated in the developed region, hence regional partnership and distribution agreements are the major strategic initiatives adopted by several key players. Furthermore, the market exhibits the presence of a large number of suppliers and manufacturers in China

## Contents

### CHAPTER 1. METHODOLOGY AND SCOPE

- 1.1. Research Methodology
- 1.2. Research Scope & Assumption
- 1.3. Information Procurement
  - 1.3.1. Purchased Database
  - 1.3.2. GVR's Internal Database
  - 1.3.3. Secondary Sources & Third-Party Perspectives
  - 1.3.4. Primary Research
- 1.4. Information Analysis
  - 1.4.1. Data Analysis Models
- 1.5. Market Formulation & Data Visualization
- 1.6. Data Validation & Publishing

### CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. Market Outlook
- 2.2. Segmental Outlook
- 2.3. Competitive Insights

### CHAPTER 3. GRAPHENE MARKET VARIABLES, TRENDS, AND SCOPE

- 3.1. Market Segmentation
- 3.2. Market Penetration and Growth Prospect Mapping
- 3.3. Value Chain Analysis
- 3.4. Raw Material Trends
  - 3.4.1. Graphite
- 3.5. Technology Overview
  - 3.5.1. Manufacturing Process
    - 3.5.1.1. Chemical exfoliation
    - 3.5.1.2. Liquid phase exfoliation
    - 3.5.1.3. Chemical vapor deposition (CVD)
- 3.6. Regulatory Framework
  - 3.6.1. U.S. EPA (TSCA)
  - 3.6.2. France-ANSES
- 3.7. Market Dynamics
  - 3.7.1. Market driver analysis

3.7.1.1. Growing research activities in the graphene-based energy storage technologies

3.7.1.2. Growth of the electronic industry

3.7.2. Market restraint analysis

3.7.2.1. Lack of commercialization

3.8. Business Environment Analysis

3.8.1. Porter's Analysis

3.8.1.1. Supplier Power

3.8.1.2. Buyer Power

3.8.1.3. Substitution Threat

3.8.1.4. Threat from New Entrant

3.8.1.5. Competitive Rivalry

3.8.2. PESTEL Analysis

3.8.2.1. Political Landscape

3.8.2.2. Environmental Landscape

3.8.2.3. Social Landscape

3.8.2.4. Technology Landscape

3.8.2.5. Economic Landscape

3.8.2.6. Legal Landscape

## **CHAPTER 4. GRAPHENE MARKET - PRODUCT ESTIMATES & TREND ANALYSIS**

4.1. Definition & Scope

4.2. Graphene Market: Product Movement Analysis, 2021 & 2030

4.3. Graphene Nanoplatelets

4.3.1. Graphene nanoplatelets market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

4.4. Graphene Oxide

4.4.1. Graphene oxide market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

4.5. Reduced Graphene Oxide

4.5.1. Reduced graphene oxide market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

4.6. Others

4.6.1. Other graphene products market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

## **CHAPTER 5. GRAPHENE MARKET - APPLICATION ESTIMATES & TREND ANALYSIS**

## 5.1. Definition & Scope

## 5.2. Graphene Market: Application Movement Analysis, 2021 & 2030

## 5.3. Electronics

5.3.1. Graphene market estimates and forecasts for electronics application, 2017 - 2030 (Tons) (USD Million)

## 5.4. Composites

5.4.1. Graphene market estimates and forecasts for composites application, 2017 - 2030 (Tons) (USD Million)

## 5.5. Energy

5.5.1. Graphene market estimates and forecasts for energy application, 2017 - 2030 (Tons) (USD Million)

## 5.6. Others

5.6.1. Graphene market estimates and forecasts for other applications, 2017 - 2030 (Tons) (USD Million)

# CHAPTER 6. GRAPHENE MARKET - REGIONAL ESTIMATES & TREND ANALYSIS

## 6.1. Definition & Scope

## 6.2. Graphene Market: Regional Movement Analysis, 2021 & 2030

## 6.3. North America

6.3.1. North America graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.3.2. North America graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.3.3. North America graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

### 6.3.4. U.S.

6.3.4.1. U.S. graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.3.4.2. U.S. graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.3.4.3. U.S. graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

## 6.4. Europe

6.4.1. Europe graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.4.2. Europe graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.4.3. Europe graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.4.4. U.K.

6.4.4.1. U.K. graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.4.4.2. U.K. graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.4.4.3. U.K. graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.4.5. Spain

6.4.5.1. Spain graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.4.5.2. Spain graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.4.5.3. Spain graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.5. Asia Pacific

6.5.1. Asia Pacific graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.5.2. Asia Pacific graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.5.3. Asia Pacific graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.5.4. China

6.5.4.1. China graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.5.4.2. China graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.5.4.3. China graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.5.5. India

6.5.5.1. India graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

6.5.5.2. India graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.5.5.3. India graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

6.6. Rest of the World

6.6.1. Rest of the World graphene market estimates and forecasts, 2017 - 2030 (USD

Million)

6.6.2. Rest of the World graphene market estimates and forecasts, by product, 2017 - 2030 (Tons) (USD Million)

6.6.3. Rest of the World graphene market estimates and forecasts, by application, 2017 - 2030 (Tons) (USD Million)

## **CHAPTER 7. COMPETITIVE LANDSCAPE**

7.1. Competitive Landscape

7.2. Vendor Landscape

7.3. Strategic Framework

## **CHAPTER 8. COMPANY PROFILES**

8.1. ACS Material

8.1.1. Company Overview

8.1.2. Financial Performance

8.1.3. Product Benchmarking

8.1.4. Strategic Initiatives

8.2. BGT Materials Limited, Ltd

8.2.1. Company Overview

8.2.2. Financial Performance

8.2.3. Product Benchmarking

8.2.4. Strategic Initiatives

8.3. CVD Equipment Corporation

8.3.1. Company Overview

8.3.2. Financial Performance

8.3.3. Product Benchmarking

8.3.4. Strategic Initiatives

8.4. Directa Plus S.p.A

8.4.1. Company Overview

8.4.2. Financial Performance

8.4.3. Product Benchmarking

8.4.4. Strategic Initiatives

8.5. Grafoid Inc

8.5.1. Company Overview

8.5.2. Financial Performance

8.5.3. Product Benchmarking

8.5.4. Strategic Initiatives



## 8.6. Graphenea

- 8.6.1. Company Overview
- 8.6.2. Financial Performance
- 8.6.3. Product Benchmarking
- 8.6.4. Strategic Initiatives

## 8.7. NanoXplore Inc

- 8.7.1. Company Overview
- 8.7.2. Financial Performance
- 8.7.3. Product Benchmarking
- 8.7.4. Strategic Initiatives

## 8.8. Haydale Graphene Industries plc

- 8.8.1. Company Overview
- 8.8.2. Financial Performance
- 8.8.3. Product Benchmarking
- 8.8.4. Strategic Initiatives

## 8.9. Applied Graphene Materials

- 8.9.1. Company Overview
- 8.9.2. Financial Performance
- 8.9.3. Product Benchmarking
- 8.9.4. Strategic Initiatives

## 8.10. 2D Carbon Graphene Material Co., Ltd

- 8.10.1. Company Overview
- 8.10.2. Financial Performance
- 8.10.3. Product Benchmarking
- 8.10.4. Strategic Initiatives

## 8.11. Thomas Swan & Co. Ltd.

- 8.11.1. Company Overview
- 8.11.2. Financial Performance
- 8.11.3. Product Benchmarking
- 8.11.4. Strategic Initiatives

## 8.12. Graphene Laboratories, Inc.

- 8.12.1. Company Overview
- 8.12.2. Financial Performance
- 8.12.3. Product Benchmarking
- 8.12.4. Strategic Initiatives

## 8.13. Graphensic AB

- 8.13.1. Company Overview
- 8.13.2. Financial Performance
- 8.13.3. Product Benchmarking

8.13.4. Strategic Initiatives

8.14. Graphene Square, Inc

8.14.1. Company Overview

8.14.2. Financial Performance

8.14.3. Product Benchmarking

8.14.4. Strategic Initiatives

8.15. AMO GmbH

8.15.1. Company Overview

8.15.2. Financial Performance

8.15.3. Product Benchmarking

8.15.4. Strategic Initiatives

## List Of Tables

### LIST OF TABLES

Table 1 Graphene nanoplatelets market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 2 Graphene oxide market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 3 Reduced graphene oxide market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 4 Other graphene products market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 5 Graphene market estimates and forecasts for electronics application, 2017 - 2030 (Tons) (USD Million)

Table 6 Graphene market estimates and forecasts for composites application, 2017 - 2030 (Tons) (USD Million)

Table 7 Graphene market estimates and forecasts for energy application, 2016 - 2027 (Tons) (USD Million)

Table 8 Graphene market estimates and forecasts for other applications, 2017 - 2030 (Tons) (USD Million)

Table 9 North America graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 10 North America graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 11 North America graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 12 North America graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 13 North America graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 14 U.S. graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 15 U.S. graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 16 U.S. graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 17 U.S. graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 18 U.S. graphene market estimates and forecasts, by application, 2017 - 2030

(USD Million)

Table 19 Europe graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 20 Europe graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 21 Europe graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 22 Europe graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 23 Europe graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 24 U.K. graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 25 U.K. graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 26 U.K. graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 27 U.K. graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 28 U.K. graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 29 Spain graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 30 Spain graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 31 Spain graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 32 Spain graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 33 Spain graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 34 Asia Pacific graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 35 Asia Pacific graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 36 Asia Pacific graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 37 Asia Pacific graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 38 Asia Pacific graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 39 China graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 40 China graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 41 China graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 42 China graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 43 China graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 44 India graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 45 India graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 46 India graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

Table 47 India graphene market estimates and forecasts, by application, 2017 - 2030 (Tons)

Table 48 India graphene market estimates and forecasts, by application, 2017 - 2030 (USD Million)

Table 49 Rest of the World graphene market estimates and forecasts, 2017 - 2030 (Tons) (USD Million)

Table 50 Rest of the World graphene market estimates and forecasts, by product, 2017 - 2030 (Tons)

Table 51 Rest of the World graphene market estimates and forecasts, by product, 2017 - 2030 (USD Million)

## List Of Figures

### LIST OF FIGURES

- Fig. 1 Information Procurement
- Fig. 2 Primary Research Pattern
- Fig. 3 Primary Research Process
- Fig. 4 Market research approaches - Bottom-Up Approach
- Fig. 5 Market research approaches - Top-Down Approach
- Fig. 6 Market research approaches - Combined Approach
- Fig. 7 Market Snapshot
- Fig. 8 Segmental Outlook
- Fig. 9 Competitive Outlook
- Fig. 10 Graphene market: market segmentation
- Fig. 11 Graphene market: Penetration & growth prospect mapping (USD Million)
- Fig. 12 Graphene market - Value chain analysis
- Fig. 13 Graphene: Market driver impact analysis
- Fig. 14 Lithium-ion battery production capacities (GWh)
- Fig. 15 Graphene: Market restraint impact analysis
- Fig. 16 Graphene market: Product movement analysis, 2021 & 2030
- Fig. 17 Graphene market: application movement analysis, 2021 & 2030
- Fig. 18 Graphene market: Regional movement analysis, 2021 & 2030
- Fig. 19 Strategic framework

## I would like to order

Product name: Graphene Market Size, Share & Trends Analysis Report By Product (Graphene Oxide, Graphene Nanoplatelets, Reduced Graphene Oxide), By Application (Electronics, Composites, Energy), By Region, And Segment Forecasts, 2022 - 2030

Product link: <https://marketpublishers.com/r/GA6A33EF7BEEN.html>

Price: US\$ 5,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/GA6A33EF7BEEN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:

Last name:

Email:

Company:

Address:

City:

Zip code:

Country:

Tel:

Fax:

Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below

and fax the completed form to +44 20 7900 3970