

# **Graphene-enhanced Composites Market-Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Composite Type (Graphene-enhanced Polymer Composites, Graphene-enhanced Ceramic Composites, Graphene-enhanced Metal Composites), By Graphene Type (Graphene Oxide, Graphene Nanoplatelets), By Application (Automotive Industry, Aerospace & Defence, Consumer Electronics, Sports & Leisure, Building & Construction, Others) By Region, and Competition**

<https://marketpublishers.com/r/G20401FF70B0EN.html>

Date: January 2023

Pages: 116

Price: US\$ 4,900.00 (Single User License)

ID: G20401FF70B0EN

## **Abstracts**

Global Graphene-enhanced Composites Market is projected to grow at an impressive rate through 2028 due to the increase in expenditure on research and development of the graphene enhanced composites. China's gross spending on research and development has increased significantly since 2020, set to amount to over USD 525 billion.

Graphene-enhanced composites range from lighter items to more substantial materials and high-capacity batteries. The main factor influencing the development of composites enhanced by graphene is graphene. The development of composite materials with graphene enhancement has benefited from the technological development for the mass manufacture of graphene. The appeal of combining graphene with different matrices is that it not only strengthens the matrix but also gives the material additional mechanical and electrical capabilities. Thermoplastics and epoxies are just a few of the polymers frequently used to strengthen graphene.

Among the graphene-enhanced composites frequently employed in various end-user applications are those made of polymer, metal, and ceramic materials. The types of graphene used to make composites are graphene oxide and graphene nanoplatelets. Composites with graphene enhancement are most frequently employed in various applications because, in contrast to other types, polymers make manufacturing graphene with them simpler. Additionally, polymers need a small amount of graphene compared to metals and ceramics. Among the graphene-enhanced composites that are frequently employed in a variety of end user applications are those made of polymer, metal, and ceramic materials. The two types of graphene that are used to make composites are graphene oxide and graphene nanoplatelets. Composites with graphene enhancement are most frequently employed in a variety of applications because, in contrast to other types, polymers make the manufacturing of graphene with them simpler. Additionally, compared to metals and ceramic, polymer just needs a small amount of graphene.

#### Low-Cost Substitute to Metal

Graphene-enhanced Composites' electrical conductivity property is anticipated to support their expanding use in touchscreen displays, electronic transistors, and light-emitting diodes, which will drive the market. The substance has a high rate of white light absorption, which is advantageous to produce photovoltaic cells. Over the projected period, it is also anticipated that the market penetration of graphene oxide products, which are employed as transparent conductive films in numerous applications, including smartphones, will increase. The substance is also used to make microchips, which are a necessary part of most electronic equipment. It is anticipated that the electronic components made with graphene would enable the creation of flexible gadgets that can be rolled and folded as needed. Additionally, the device is anticipated to help with the production of computers that are faster and use less energy. Companies that produce materials have begun to create conductive inks, which are used to print circuits from the material and conduct electricity. As a result, demand for the product should increase for the projected period due to the potential it will offer the electronic sector.

#### Growing Technological Advancement for Sustainable Development

Numerous studies are being conducted to develop novel and cutting-edge materials, many of which could be applied to graphene composites. With one graphene-polymer proving to be light, flexible, and a great electrical conductor, another graphene-dioxide composite was found to have interesting photocatalytic efficiencies, and there are

countless more materials that could be coupled to create a variety of composites in the future. The potential of graphene composites encompasses a wide range of applications, such as renewable energy, aeronautical engineering materials, and medical implants. To increase the performance of industrial machinery and components, corrosion resistance and other properties can be added to composites. For instance, fiber-reinforced polymer composites may create more effective heat exchangers, fans, blowers, and other machinery that can withstand corrosive or high-temperature processes, durable pipelines and tanks, and machinery with better electrical insulation.

### Market Segmentation

Global Graphene-enhanced Composites market is segmented by composite type, graphene type, and application. Based on composite type, the market is divided into graphene-enhanced polymer composites, graphene-enhanced ceramic composites, graphene-enhanced metal composites. Based on graphene type, the market is divided into graphene oxide, and graphene nanoplatelets. Based on application, the market is segmented into automotive industry, aerospace & defense, consumer electronics, sports & leisure, building & construction, others.

### Market players

Applied Graphene Materials plc, Global Graphene Group, Graphene NanoChem Plc, Graphene Composites Ltd, G6 Materials Corp, Thomas Swan & Co. Ltd., Haydale Graphene Industries Plc, NanoXplore Inc, The Sixth Element (Changzhou) Materials Technology Co. Ltd and First Graphene Ltd. are some of the key market players operating in the global graphene-enhanced composites market.

### Report Scope:

In this report, Global Graphene-enhanced Composites Market has been segmented into following categories, in addition to the industry trends which have also been detailed below:

#### Graphene-enhanced Composites Market, By Composite Type:

High-Performance Thermoset Composites

High-Performance Thermoplastic Composites Polyethylene

### Graphene-enhanced Composites Market, By Graphene Type:

Carbon fiber Composites

Aramid fiber Composites

S-Glass Composites

Others

### Graphene-enhanced Composites Market, By Application:

Aerospace & Defense

Automotive, Medical

Wind Turbines

Construction

Others

### Graphene-enhanced Composites Market, By Region:

North America

United States

Canada

Mexico

Europe

France

Germany

United Kingdom

Italy

Spain

Asia-Pacific

China

India

Japan

South Korea

Australia

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Turkey

Egypt

## Competitive Landscape

Company Profiles: Detailed analysis of the major companies in Global Graphene-enhanced Composites Market.

## Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

## Company Information

Detailed analysis and profiling of additional market players (up to five).

## Contents

### **1. PRODUCT OVERVIEW**

- 1.1. Market Definition
- 1.2. Scope of the Market
  - 1.2.1. Markets Covered
  - 1.2.2. Years Considered for Study
  - 1.2.3. Key Market Segmentations

### **2. RESEARCH METHODOLOGY**

- 2.1. Objective of the Study
- 2.2. Baseline Methodology
- 2.3. Key Industry Partners
- 2.4. Major Association and Secondary Sources
- 2.5. Forecasting Methodology
- 2.6. Data Triangulation & Validation
- 2.7. Assumptions and Limitations

### **3. EXECUTIVE SUMMARY**

- 3.1. Overview of the Market
- 3.2. Overview of Key Market Segmentations
- 3.3. Overview of Key Market Players
- 3.4. Overview of Key Regions/Countries
- 3.5. Overview of Market Drivers, Challenges, and Trends

### **4. VOICE OF CUSTOMER**

### **5. GLOBAL GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

- 5.1. Market Size & Forecast
  - 5.1.1. By Value & Volume
- 5.2. Market Share & Forecast
  - 5.2.1. By Composite Type (Graphene-enhanced Polymer Composites, Graphene-enhanced Ceramic Composites, Graphene-enhanced Metal Composites)
  - 5.2.2. By Graphene Type (Graphene Oxide, Graphene Nanoplatelets)
  - 5.2.3. By Application (Automotive Industry, Aerospace & Defence, Consumer

Electronics, Sports & Leisure, Building & Construction, Others)

5.2.4. By Application (Aerospace & Defence, Automotive, Medical, Wind Turbines, Construction and Others)

5.2.5. By Region (North America, Europe, Asia Pacific, South America, Middle East & Africa)

5.2.6. By Company (2022)

5.3. Market Map

5.3.1. By Composite Type

5.3.2. By Graphene Type

5.3.3. By Application

5.3.4. By Region

5.4. Pricing Analysis

## **6. NORTH AMERICA GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

6.1. Market Size & Forecast

6.1.1. By Value & Volume

6.2. Market Share & Forecast

6.2.1. By Composite Type

6.2.2. By Graphene Type

6.2.3. By Application

6.2.4. By Country

6.3. Pricing Analysis

6.4. North America: Country Analysis

6.4.1. United States Graphene-enhanced Composites Market Outlook

6.4.1.1. Market Size & Forecast

6.4.1.1.1. By Value & Volume

6.4.1.2. Market Share & Forecast

6.4.1.2.1. By Composite Type

6.4.1.2.2. By Graphene Type

6.4.1.2.3. By Application

6.4.2. Mexico Graphene-enhanced Composites Market Outlook

6.4.2.1. Market Size & Forecast

6.4.2.1.1. By Value & Volume

6.4.2.2. Market Share & Forecast

6.4.2.2.1. By Composite Type

6.4.2.2.2. By Graphene Type

6.4.2.2.3. By Application

6.4.3. Canada Graphene-enhanced Composites Market Outlook



- 6.4.3.1. Market Size & Forecast
  - 6.4.3.1.1. By Value & Volume
- 6.4.3.2. Market Share & Forecast
  - 6.4.3.2.1. By Composite Type
  - 6.4.3.2.2. By Graphene Type
  - 6.4.3.2.3. By Application

## **7. EUROPE GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

- 7.1. Market Size & Forecast
  - 7.1.1. By Value & Volume
- 7.2. Market Share & Forecast
  - 7.2.1. By Composite Type
  - 7.2.2. By Graphene Type
  - 7.2.3. By Application
  - 7.2.4. By Country
- 7.3. Pricing Analysis
- 7.4. Europe: Country Analysis
  - 7.4.1. France Graphene-enhanced Composites Market Outlook
    - 7.4.1.1. Market Size & Forecast
      - 7.4.1.1.1. By Value & Volume
    - 7.4.1.2. Market Share & Forecast
      - 7.4.1.2.1. By Composite Type
      - 7.4.1.2.2. By Graphene Type
      - 7.4.1.2.3. By Application
  - 7.4.2. Germany Graphene-enhanced Composites Market Outlook
    - 7.4.2.1. Market Size & Forecast
      - 7.4.2.1.1. By Value & Volume
    - 7.4.2.2. Market Share & Forecast
      - 7.4.2.2.1. By Composite Type
      - 7.4.2.2.2. By Graphene Type
      - 7.4.2.2.3. By Application
  - 7.4.3. United Kingdom Graphene-enhanced Composites Market Outlook
    - 7.4.3.1. Market Size & Forecast
      - 7.4.3.1.1. By Value & Volume
    - 7.4.3.2. Market Share & Forecast
      - 7.4.3.2.1. By Composite Type
      - 7.4.3.2.2. By Graphene Type
      - 7.4.3.2.3. By Application

#### 7.4.4. Italy Graphene-enhanced Composites Market Outlook

##### 7.4.4.1. Market Size & Forecast

###### 7.4.4.1.1. By Value & Volume

##### 7.4.4.2. Market Share & Forecast

###### 7.4.4.2.1. By Composite Type

###### 7.4.4.2.2. By Graphene Type

###### 7.4.4.2.3. By Application

#### 7.4.5. Spain Graphene-enhanced Composites Market Outlook

##### 7.4.5.1. Market Size & Forecast

###### 7.4.5.1.1. By Value & Volume

##### 7.4.5.2. Market Share & Forecast

###### 7.4.5.2.1. By Composite Type

###### 7.4.5.2.2. By Graphene Type

###### 7.4.5.2.3. By Application

## **8. ASIA-PACIFIC GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

### 8.1. Market Size & Forecast

#### 8.1.1. By Value & Volume

### 8.2. Market Share & Forecast

#### 8.2.1. By Composite Type

#### 8.2.2. By Graphene Type

#### 8.2.3. By Application

#### 8.2.4. By Country

### 8.3. Pricing Analysis

### 8.4. Asia-Pacific: Country Analysis

#### 8.4.1. China Graphene-enhanced Composites Market Outlook

##### 8.4.1.1. Market Size & Forecast

###### 8.4.1.1.1. By Value & Volume

##### 8.4.1.2. Market Share & Forecast

###### 8.4.1.2.1. By Composite Type

###### 8.4.1.2.2. By Graphene Type

###### 8.4.1.2.3. By Application

#### 8.4.2. India Graphene-enhanced Composites Market Outlook

##### 8.4.2.1. Market Size & Forecast

###### 8.4.2.1.1. By Value & Volume

##### 8.4.2.2. Market Share & Forecast

###### 8.4.2.2.1. By Composite Type

###### 8.4.2.2.2. By Graphene Type

- 8.4.2.2.3. By Application
- 8.4.3. Japan Graphene-enhanced Composites Market Outlook
  - 8.4.3.1. Market Size & Forecast
    - 8.4.3.1.1. By Value & Volume
  - 8.4.3.2. Market Share & Forecast
    - 8.4.3.2.1. By Composite Type
    - 8.4.3.2.2. By Graphene Type
    - 8.4.3.2.3. By Application
- 8.4.4. South Korea Graphene-enhanced Composites Market Outlook
  - 8.4.4.1. Market Size & Forecast
    - 8.4.4.1.1. By Value & Volume
  - 8.4.4.2. Market Share & Forecast
    - 8.4.4.2.1. By Composite Type
    - 8.4.4.2.2. By Graphene Type
    - 8.4.4.2.3. By Application
- 8.4.5. Australia Graphene-enhanced Composites Market Outlook
  - 8.4.5.1. Market Size & Forecast
    - 8.4.5.1.1. By Value & Volume
  - 8.4.5.2. Market Share & Forecast
    - 8.4.5.2.1. By Composite Type
    - 8.4.5.2.2. By Graphene Type
    - 8.4.5.2.3. By Application

## **9. SOUTH AMERICA GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

- 9.1. Market Size & Forecast
  - 9.1.1. By Value & Volume
- 9.2. Market Share & Forecast
  - 9.2.1. By Composite Type
  - 9.2.2. By Graphene Type
  - 9.2.3. By Application
  - 9.2.4. By Country
- 9.3. Pricing Analysis
- 9.4. South America: Country Analysis
  - 9.4.1. Brazil Graphene-enhanced Composites Market Outlook
    - 9.4.1.1. Market Size & Forecast
      - 9.4.1.1.1. By Value & Volume
    - 9.4.1.2. Market Share & Forecast
      - 9.4.1.2.1. By Composite Type

- 9.4.1.2.2. By Graphene Type
- 9.4.1.2.3. By Application
- 9.4.2. Argentina Graphene-enhanced Composites Market Outlook
  - 9.4.2.1. Market Size & Forecast
    - 9.4.2.1.1. By Value & Volume
  - 9.4.2.2. Market Share & Forecast
    - 9.4.2.2.1. By Composite Type
    - 9.4.2.2.2. By Graphene Type
    - 9.4.2.2.3. By Application
- 9.4.3. Colombia Graphene-enhanced Composites Market Outlook
  - 9.4.3.1. Market Size & Forecast
    - 9.4.3.1.1. By Value & Volume
  - 9.4.3.2. Market Share & Forecast
    - 9.4.3.2.1. By Composite Type
    - 9.4.3.2.2. By Graphene Type
    - 9.4.3.2.3. By Application

## **10. MIDDLE EAST AND AFRICA GRAPHENE-ENHANCED COMPOSITES MARKET OUTLOOK**

- 10.1. Market Size & Forecast
  - 10.1.1. By Value & Volume
- 10.2. Market Share & Forecast
  - 10.2.1. By Composite Type
  - 10.2.2. By Graphene Type
  - 10.2.3. By Application
  - 10.2.4. By Country
- 10.3. Pricing Analysis
- 10.4. MEA: Country Analysis
  - 10.4.1. South Africa Graphene-enhanced Composites Market Outlook
    - 10.4.1.1. Market Size & Forecast
      - 10.4.1.1.1. By Value & Volume
    - 10.4.1.2. Market Share & Forecast
      - 10.4.1.2.1. By Composite Type
      - 10.4.1.2.2. By Graphene Type
      - 10.4.1.2.3. By Application
  - 10.4.2. Saudi Arabia Graphene-enhanced Composites Market Outlook
    - 10.4.2.1. Market Size & Forecast
      - 10.4.2.1.1. By Value & Volume

- 10.4.2.2. Market Share & Forecast
  - 10.4.2.2.1. By Composite Type
  - 10.4.2.2.2. By Graphene Type
  - 10.4.2.2.3. By Application
- 10.4.3. UAE Graphene-enhanced Composites Market Outlook
  - 10.4.3.1. Market Size & Forecast
    - 10.4.3.1.1. By Value & Volume
  - 10.4.3.2. Market Share & Forecast
    - 10.4.3.2.1. By Composite Type
    - 10.4.3.2.2. By Graphene Type
    - 10.4.3.2.3. By Application
- 10.4.4. Turkey Graphene-enhanced Composites Market Outlook
  - 10.4.4.1. Market Size & Forecast
    - 10.4.4.1.1. By Value & Volume
  - 10.4.4.2. Market Share & Forecast
    - 10.4.4.2.1. By Composite Type
    - 10.4.4.2.2. By Graphene Type
    - 10.4.4.2.3. By Application
- 10.4.5. Egypt Graphene-enhanced Composites Market Outlook
  - 10.4.5.1. Market Size & Forecast
    - 10.4.5.1.1. By Value & Volume
  - 10.4.5.2. Market Share & Forecast
    - 10.4.5.2.1. By Composite Type
    - 10.4.5.2.2. By Graphene Type
    - 10.4.5.2.3. By Application

## **11. MARKET DYNAMICS**

- 11.1. Drivers
- 11.2. Challenges

## **12. MARKET TRENDS & DEVELOPMENTS**

- 12.1. Merger & Acquisition
- 12.2. Product Launches
- 12.3. Recent Developments

## **13. PORTERS FIVE FORCES ANALYSIS**

- 13.1. Competition in the Industry
- 13.2. Potential of New Entrants
- 13.3. Power of Suppliers
- 13.4. Power of Customers
- 13.5. Threat of Substitute Products

## **14. COMPETITIVE LANDSCAPE**

- 14.1. Business Overview
- 14.2. Company Snapshot
- 14.3. Products & Services
- 14.4. Financials (In case of listed companies)
- 14.5. Recent Developments
- 14.6. SWOT Analysis
  - 14.6.1. Applied Graphene Materials plc
  - 14.6.2. Global Graphene Group
  - 14.6.3. Graphene NanoChem Plc
  - 14.6.4. Graphene Composites Ltd
  - 14.6.5. G6 Materials Corp
  - 14.6.6. Thomas Swan & Co. Ltd.
  - 14.6.7. Haydale Graphene Industries Plc
  - 14.6.8. NanoXplore Inc
  - 14.6.9. Element (Changzhou) Materials Technology Co. Ltd
  - 14.6.10. First Graphene Ltd.

## **15. STRATEGIC RECOMMENDATIONS**

## I would like to order

Product name: Graphene-enhanced Composites Market-Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028 Segmented By Composite Type (Graphene-enhanced Polymer Composites, Graphene-enhanced Ceramic Composites, Graphene-enhanced Metal Composites), By Graphene Type (Graphene Oxide, Graphene Nanoplatelets), By Application (Automotive Industry, Aerospace & Defence, Consumer Electronics, Sports & Leisure, Building & Construction, Others) By Region, and Competition

Product link: <https://marketpublishers.com/r/G20401FF70B0EN.html>

Price: US\$ 4,900.00 (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/G20401FF70B0EN.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