

# Graphene Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

<https://marketpublishers.com/r/G40B28D0DC96EN.html>

Date: February 2023

Pages: 144

Price: US\$ 2,499.00 (Single User License)

ID: G40B28D0DC96EN

## Abstracts

The global graphene market size reached US\$ 100 Million in 2022. Looking forward, IMARC Group expects the market to reach US\$ 1,540 Million by 2028, exhibiting a growth rate (CAGR) of 47.8% during 2023-2028.

Graphene can be defined as an allotrope of carbon element that has the thickness of only one atom and is arranged in a honeycomb-shaped lattice. It exhibits high thermal and electrical conductivity, along with high mechanical strength, permeability and electron mobility. Some of the most commonly available forms of graphene include graphene sheets, films, nanoribbons, nanoplatelets and graphene oxide. They are used with other gases and metals to form materials with superior properties, which are further used in the manufacturing of batteries, transistors, computer chips, supercapacitors, water filters, touch panels, coatings, composites and solar cells. Apart from this, it finds extensive applications across various industries, including medical, electronics, energy, defence and aerospace.

### Graphene Market Trends:

Rapid industrialization and increasing demand for lightweight, flexible and renewable materials across the globe are among the key factors driving the growth of the market. Furthermore, the integration of nanotechnology within the electronics industry is also providing a boost to the market growth. Graphene nanoplatelets are used to enhance the physical properties of various polymer materials, including natural and synthetic rubber, thermoplastic and thermoset composites, paints, coating and elastomers. Graphene films are being increasingly utilized in the manufacturing of protective coatings on flexible electronic devices, batteries and smartphones, which is contributing to the market growth. Other factors, including extensive research and development (R&D) activities to improve the thermal and electrical conductivity properties, along with

immense utilization of graphene for manufacturing lightweight sports equipment, are projected to drive the market further.

#### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global graphene market report, along with forecasts at the global, regional and country level from 2023-2028. Our report has categorized the market based on type, application and end-use industry.

#### Breakup by Type:

- Mono-layer & Bi-layer Graphene
- Few Layer Graphene (FLG)
- Graphene Oxide (GO)
- Graphene Nano Platelets (GNP)
- Others

#### Breakup by Application:

- Batteries
- Supercapacitors
- Transparent Electrodes
- Integrated Circuits
- Others

#### Breakup by End-Use Industry:

- Electronics and Telecommunication
- Bio-medical and Healthcare
- Energy
- Aerospace and Defense
- Others

#### Breakup by Region:

- North America
  - United States
  - Canada
- Asia Pacific

China  
Japan  
India  
South Korea  
Australia  
Indonesia  
Others  
Europe  
Germany  
France  
United Kingdom  
Italy  
Spain  
Russia  
Others  
Latin America  
Brazil  
Mexico  
Others  
Middle East and Africa

#### Competitive Landscape:

The competitive landscape of the industry has also been examined with some of the key players being ACS Material, LLC, Global Graphene Group, Inc., CVD Equipment Corporation, Grafoid Inc., G6 Materials Corp. (Graphene 3D Lab Inc.), Graphene Nanochem plc, Graphenea Inc., Haydale Graphene Industries plc, Vorbeck Materials Corp., and XG Sciences Inc.

#### Key Questions Answered in This Report:

How has the global graphene market performed so far and how will it perform in the coming years?

What are the key regional markets?

What has been the impact of COVID-19 on the global graphene market?

What is the breakup of the market based on the type?

What is the breakup of the market based on the application?

What is the breakup of the market based on the end-use industry?

What are the various stages in the value chain of the market?

What are the key driving factors and challenges in the market?

What is the structure of the global graphene industry and who are the key players?  
What is the degree of competition in the market?

## Contents

### **1 PREFACE**

### **2 SCOPE AND METHODOLOGY**

- 2.1 Objectives of the Study
- 2.2 Stakeholders
- 2.3 Data Sources
  - 2.3.1 Primary Sources
  - 2.3.2 Secondary Sources
- 2.4 Market Estimation
  - 2.4.1 Bottom-Up Approach
  - 2.4.2 Top-Down Approach
- 2.5 Forecasting Methodology

### **3 EXECUTIVE SUMMARY**

### **4 INTRODUCTION**

- 4.1 Overview
- 4.2 Key Industry Trends

### **5 GLOBAL GRAPHENE MARKET**

- 5.1 Market Overview
- 5.2 Market Performance
- 5.3 Impact of COVID-19
- 5.4 Market Forecast

### **6 MARKET BREAKUP BY TYPE**

- 6.1 Mono-layer & Bi-layer Graphene
  - 6.1.1 Market Trends
  - 6.1.2 Market Forecast
- 6.2 Few Layer Graphene (FLG)
  - 6.2.1 Market Trends
  - 6.2.2 Market Forecast
- 6.3 Graphene Oxide (GO)

- 6.3.1 Market Trends
- 6.3.2 Market Forecast
- 6.4 Graphene Nano Platelets (GNP)
  - 6.4.1 Market Trends
  - 6.4.2 Market Forecast
- 6.5 Others
  - 6.5.1 Market Trends
  - 6.5.2 Market Forecast

## **7 MARKET BREAKUP BY APPLICATION**

- 7.1 Batteries
  - 7.1.1 Market Trends
  - 7.1.2 Market Forecast
- 7.2 Supercapacitors
  - 7.2.1 Market Trends
  - 7.2.2 Market Forecast
- 7.3 Transparent Electrodes
  - 7.3.1 Market Trends
  - 7.3.2 Market Forecast
- 7.4 Integrated Circuits
  - 7.4.1 Market Trends
  - 7.4.2 Market Forecast
- 7.5 Others
  - 7.5.1 Market Trends
  - 7.5.2 Market Forecast

## **8 MARKET BREAKUP BY END-USE INDUSTRY**

- 8.1 Electronics and Telecommunication
  - 8.1.1 Market Trends
  - 8.1.2 Market Forecast
- 8.2 Bio-medical and Healthcare
  - 8.2.1 Market Trends
  - 8.2.2 Market Forecast
- 8.3 Energy
  - 8.3.1 Market Trends
  - 8.3.2 Market Forecast
- 8.4 Aerospace and Defense

8.4.1 Market Trends

8.4.2 Market Forecast

8.5 Others

8.5.1 Market Trends

8.5.2 Market Forecast

## **9 MARKET BREAKUP BY REGION**

9.1 North America

9.1.1 United States

9.1.1.1 Market Trends

9.1.1.2 Market Forecast

9.1.2 Canada

9.1.2.1 Market Trends

9.1.2.2 Market Forecast

9.2 Asia Pacific

9.2.1 China

9.2.1.1 Market Trends

9.2.1.2 Market Forecast

9.2.2 Japan

9.2.2.1 Market Trends

9.2.2.2 Market Forecast

9.2.3 India

9.2.3.1 Market Trends

9.2.3.2 Market Forecast

9.2.4 South Korea

9.2.4.1 Market Trends

9.2.4.2 Market Forecast

9.2.5 Australia

9.2.5.1 Market Trends

9.2.5.2 Market Forecast

9.2.6 Indonesia

9.2.6.1 Market Trends

9.2.6.2 Market Forecast

9.2.7 Others

9.2.7.1 Market Trends

9.2.7.2 Market Forecast

9.3 Europe

9.3.1 Germany

- 9.3.1.1 Market Trends
- 9.3.1.2 Market Forecast
- 9.3.2 France
  - 9.3.2.1 Market Trends
  - 9.3.2.2 Market Forecast
- 9.3.3 United Kingdom
  - 9.3.3.1 Market Trends
  - 9.3.3.2 Market Forecast
- 9.3.4 Italy
  - 9.3.4.1 Market Trends
  - 9.3.4.2 Market Forecast
- 9.3.5 Spain
  - 9.3.5.1 Market Trends
  - 9.3.5.2 Market Forecast
- 9.3.6 Russia
  - 9.3.6.1 Market Trends
  - 9.3.6.2 Market Forecast
- 9.3.7 Others
  - 9.3.7.1 Market Trends
  - 9.3.7.2 Market Forecast
- 9.4 Latin America
  - 9.4.1 Brazil
    - 9.4.1.1 Market Trends
    - 9.4.1.2 Market Forecast
  - 9.4.2 Mexico
    - 9.4.2.1 Market Trends
    - 9.4.2.2 Market Forecast
  - 9.4.3 Others
    - 9.4.3.1 Market Trends
    - 9.4.3.2 Market Forecast
- 9.5 Middle East and Africa
  - 9.5.1 Market Trends
  - 9.5.2 Market Breakup by Country
  - 9.5.3 Market Forecast

## **10 SWOT ANALYSIS**

- 10.1 Overview
- 10.2 Strengths



10.3 Weaknesses

10.4 Opportunities

10.5 Threats

## **11 VALUE CHAIN ANALYSIS**

## **12 PORTERS FIVE FORCES ANALYSIS**

12.1 Overview

12.2 Bargaining Power of Buyers

12.3 Bargaining Power of Suppliers

12.4 Degree of Competition

12.5 Threat of New Entrants

12.6 Threat of Substitutes

## **13 PRICE INDICATORS**

## **14 COMPETITIVE LANDSCAPE**

14.1 Market Structure

14.2 Key Players

14.3 Profiles of Key Players

14.3.1 ACS Material, LLC

14.3.1.1 Company Overview

14.3.1.2 Product Portfolio

14.3.2 Global Graphene Group, Inc.

14.3.2.1 Company Overview

14.3.2.2 Product Portfolio

14.3.3 CVD Equipment Corporation

14.3.3.1 Company Overview

14.3.3.2 Product Portfolio

14.3.3.3 Financials

14.3.4 Grafoid Inc.

14.3.4.1 Company Overview

14.3.4.2 Product Portfolio

14.3.5 G6 Materials Corp. (Graphene 3D Lab Inc.)

14.3.5.1 Company Overview

14.3.5.2 Product Portfolio

14.3.5.3 Financials

#### 14.3.6 Graphene NanoChem PLC

14.3.6.1 Company Overview

14.3.6.2 Product Portfolio

14.3.6.3 Financials

#### 14.3.7 Graphenea Inc.

14.3.7.1 Company Overview

14.3.7.2 Product Portfolio

14.3.7.3 Financials

#### 14.3.8 Haydale Graphene Industries Plc

14.3.8.1 Company Overview

14.3.8.2 Product Portfolio

14.3.8.3 Financials

#### 14.3.9 Vorbeck Materials Corp.

14.3.9.1 Company Overview

14.3.9.2 Product Portfolio

#### 14.3.10 XG Sciences Inc.

14.3.10.1 Company Overview

14.3.10.2 Product Portfolio

## List Of Tables

### LIST OF TABLES

Table 1: Global: Graphene Market: Key Industry Highlights, 2022 and 2028

Table 2: Global: Graphene Market Forecast: Breakup by Type (in Million US\$), 2023-2028

Table 3: Global: Graphene Market Forecast: Breakup by Application (in Million US\$), 2023-2028

Table 4: Global: Graphene Market Forecast: Breakup by End-Use Industry (in Million US\$), 2023-2028

Table 5: Global: Graphene Market Forecast: Breakup by Region (in Million US\$), 2023-2028

Table 6: Global: Graphene Market: Competitive Structure

Table 7: Global: Graphene Market: Key Players

## List Of Figures

### LIST OF FIGURES

Figure 1: Global: Graphene Market: Major Drivers and Challenges

Figure 2: Global: Graphene Market: Sales Value (in Million US\$), 2017-2022

Figure 3: Global: Graphene Market: Breakup by Type (in %), 2022

Figure 4: Global: Graphene Market: Breakup by Application (in %), 2022

Figure 5: Global: Graphene Market: Breakup by End-Use Industry (in %), 2022

Figure 6: Global: Graphene Market: Breakup by Region (in %), 2022

Figure 7: Global: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 8: Global: Graphene (Mono-layer & Bi-layer Graphene) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 9: Global: Graphene (Mono-layer & Bi-layer Graphene) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 10: Global: Graphene (Few Layer Graphene) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 11: Global: Graphene (Few Layer Graphene) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 12: Global: Graphene (Graphene Oxide) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 13: Global: Graphene (Graphene Oxide) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 14: Global: Graphene (Graphene Nano Platelets) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 15: Global: Graphene (Graphene Nano Platelets) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 16: Global: Graphene (Others) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 17: Global: Graphene (Others) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 18: Global: Graphene (Batteries) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 19: Global: Graphene (Batteries) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 20: Global: Graphene (Supercapacitors) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 21: Global: Graphene (Supercapacitors) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 22: Global: Graphene (Transparent Electrodes) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 23: Global: Graphene (Transparent Electrodes) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 24: Global: Graphene (Integrated Circuits) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 25: Global: Graphene (Integrated Circuits) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 26: Global: Graphene (Others) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 27: Global: Graphene (Others) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 28: Global: Graphene (Electronics and Telecommunication) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 29: Global: Graphene (Electronics and Telecommunication) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 30: Global: Graphene (Bio-medical and Healthcare) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 31: Global: Graphene (Bio-medical and Healthcare) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 32: Global: Graphene (Energy) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 33: Global: Graphene (Energy) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 34: Global: Graphene (Aerospace and Defense) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 35: Global: Graphene (Aerospace and Defense) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 36: Global: Graphene (Others) Market: Sales Value (in Million US\$), 2017 & 2022

Figure 37: Global: Graphene (Others) Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 38: North America: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 39: North America: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 40: United States: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 41: United States: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 42: Canada: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 43: Canada: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 44: Asia Pacific: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 45: Asia Pacific: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 46: China: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 47: China: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 48: Japan: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 49: Japan: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 50: India: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 51: India: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 52: South Korea: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 53: South Korea: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 54: Australia: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 55: Australia: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 56: Indonesia: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 57: Indonesia: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 58: Others: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 59: Others: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 60: Europe: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 61: Europe: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 62: Germany: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 63: Germany: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 64: France: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 65: France: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 66: United Kingdom: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 67: United Kingdom: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 68: Italy: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 69: Italy: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 70: Spain: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 71: Spain: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 72: Russia: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 73: Russia: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 74: Others: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 75: Others: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 76: Latin America: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 77: Latin America: Graphene Market Forecast: Sales Value (in Million US\$),  
2023-2028

Figure 78: Brazil: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 79: Brazil: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 80: Mexico: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 81: Mexico: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 82: Others: Graphene Market: Sales Value (in Million US\$), 2017 & 2022

Figure 83: Others: Graphene Market Forecast: Sales Value (in Million US\$), 2023-2028

Figure 84: Middle East and Africa: Graphene Market: Sales Value (in Million US\$), 2017  
& 2022

Figure 85: Middle East and Africa: Graphene Market Forecast: Sales Value (in Million  
US\$), 2023-2028

Figure 86: Global: Graphene Industry: SWOT Analysis

Figure 87: Global: Graphene Industry: Value Chain Analysis

Figure 88: Global: Graphene Industry: Porter's Five Forces Analysis

## I would like to order

Product name: Graphene Market: Global Industry Trends, Share, Size, Growth, Opportunity and Forecast 2023-2028

Product link: <https://marketpublishers.com/r/G40B28D0DC96EN.html>

Price: US\$ 2,499.00 (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/G40B28D0DC96EN.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



