

Graphene – A Global Market Overview

“The report reviews, analyzes and projects the global market for Graphene for the period 2018-2027. Graphene product types analyzed in this study comprise Few-Layer Graphene, Graphene Nanoplatelets, Graphene Oxide and Mono- & Bi-Layer Graphene. The global market for Graphene applications explored in this study includes Composites Electrical & Electronics, Energy Storage & Harvesting, Medical & Biomedical, Paints, Coatings & Inks and Other Applications. The report also focuses on the end-use industry market for Graphene consumption in sectors including Aerospace & Defense, Automotive, Chemical, Electronics & Telecommunication, Energy and Healthcare.”

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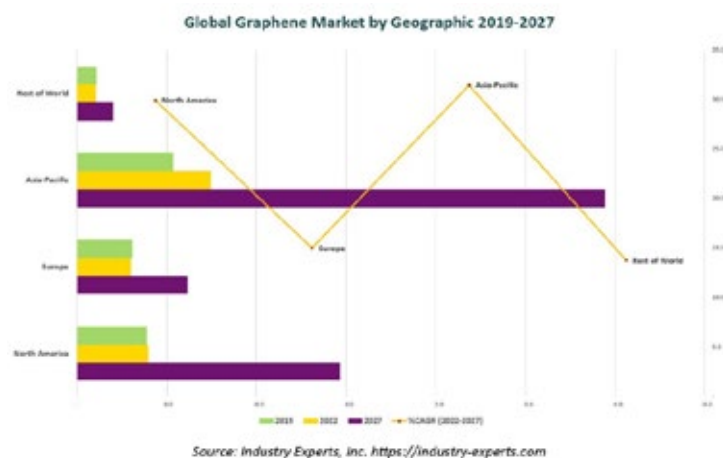
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Report Synopsis

Graphene, an allotrope of carbon, comprises a monolayer of atoms arranged in a two-dimensional (2D) honeycomb lattice nanostructure. Promoted as a “wonder material,” there have been several studies undertaken across the globe in various disciplines to fully exploit the material’s potential. Owing to these efforts, graphene has been identified as a crucial material in the realms of aerospace & defense, automotive, chemical, electronics & telecommunication, energy harvesting and medical & healthcare.

Growth in Graphene demand shows variation on a region-to-region basis. For instance, while Aerospace & Defense is the fastest growing area for the material in North America, Electronics & Telecommunication leads the European and Asia-Pacific for Graphene. The versatility of Graphene and its current and potential applications in various industries would play a critical role in expanding its wider use. Overall global market for Graphene is estimated at US\$155 million in 2022 and projected to grow by a robust 27.4% during the period 2022-2027.



Research Findings & Coverage

- Graphene global market is explored in this report with respect to product types, key applications and end-use industry sectors
- The study extensively analyzes each product type and key applications of Graphene in all major regions for the analysis period

- Development of First Textile Electrode Enabled by Graphene
- Copper Nanowires Coated with Graphene Enhance Flexible Electronics
- Magnetized Graphene Offers Potential to Increase Data Storage Capacity to Unimaginable Levels
- Graphene Oxide-Based Hybrid Nanopolymers Enhance Bearing Performance
- G+BOARD Aims to Radically Transform the Automotive Industry’s Future
- Key business trends focusing on product innovations/developments, M&As, JVs and other recent industry developments
- Major companies profiled – 26
- The industry guide includes the contact details for 190 companies

Product Outline

The report analyzes the market for key product types of Graphene including:

- Few-Layer Graphene
- Graphene Nanoplatelets
- Graphene Oxide
- Mono- & Bi-Layer Graphene

The market for application areas of Graphene analyzed comprise the following:

- Composites
- Electrical & Electronics
- Energy Storage & Harvesting
- Medical & Healthcare
- Paints, Coatings & Inks
- Other

End-use industry market analysis for Graphene provided in this report includes the following:

- Aerospace & Defense
- Automotive
- Chemical
- Electronics & Telecommunication
- Energy
- Healthcare

Analysis Period, Units and Growth Rates

- The report reviews, analyzes and projects the global Graphene market for the period 2018-2027 in terms of market value in US\$ and the compound annual growth rates (CAGRs) projected from 2022 through 2027

Geographic Coverage

- North America (The United States, Canada and Mexico)
- Europe (France, Germany, Italy, the United Kingdom and Rest of Europe)
- Asia-Pacific (China, India, Japan, South Korea and Rest of Asia-Pacific)
- Rest of World

SAMPLE COMPANY PROFILE

HAYDALE GRAPHENE INDUSTRIES PLC

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Business Overview

Haydale Graphene Industries Plc, based in Ammanford, Wales, the United Kingdom, is a leading global provider of technologies and materials, focused on integrating graphene and other nanomaterials into the next generation of commercial technologies and industrial materials. The company's technologies have received patents in Europe, USA, Australia, Japan and China, and its operations cover six facilities in the UK, Europe and the Far East. The range of products and services offered by Haydale comprises the following:

- SYNERG cooling face masks with a patented graphene fabric THERMIT, which are antibacterial and provide a cooling effect & effective filtration
- A series of graphene-enhanced carbon fiber prepregs that combine Haydale's HDPlas® functionalization process with its proficiency in graphene engineering and nano additive chemistry. Include electrically enhanced prepregs for the aerospace sector, mechanically enhanced prepregs for the sporting goods sector and thermally enhanced prepregs for the composite tooling sector.
- Conductive inks & coatings based on graphene formulations that find commercial application in RFID, pressure sensors, flexible electronics, biomedical devices and optical systems.
- Plasma enhancement and functionalization of graphene and several other nanomaterials, requiring the addition of compatible chemical groups to the material's surface for enabling that graphene or other nanomaterials are able to disperse effectively. Widely used in inks & coatings, polymers & composites, elastomers, energy, electronics and transport, among others.

In addition to the above, Haydale also offers CeramycGuard™ ceramic surface treatment (CST) that employs the company's proprietary silicon carbide microfiber in combination with alumina and zirconia silicates for the renewal and preservation of concrete surfaces. Major application areas include bridges (decks, beams, piers/abutments), cast concrete products (slabs, pipes), cinderblock walls, commercial & industrial floors, concrete roadways, runways, pathways, dams, food storage & processing, greenhouses (walls and floors), loading docks, parking garages (deck & walls), retaining & sound barrier walls, seawalls, wharfs & quays, storm drains, tunnels, wastewater treatment and water treatment. Silicon carbide whiskers/materials from the company are applied in a variety of areas, extending from high-performance cutting tools to protective coatings, as well as ceramic and metal matrix composites. These are offered under the Silar® and SI-TUFF™ brand/trade names for use in ceramic cutting tools, technical ceramics, protective coatings, ceramic & metal matrix coatings, fiber-reinforced plastics and plant cell transformations.

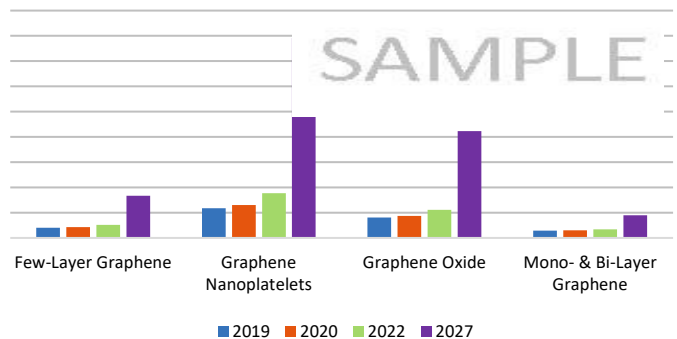
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SAMPLE TABLE/CHART

Glance at 2022 Global Graphene Market Share (%) by Geographic Region – North America, Europe, Asia-Pacific and Rest of World



Asia-Pacific Graphene Market Analysis (2018-2027) by Type – Few-Layer Graphene, Graphene Nanoplatelets, Graphene Oxide and Mono- & Bi-Layer Graphene in USD Million



KEY PLAYERS PROFILED

- 2D Carbon Graphene Material Co Ltd
- ACS Material, LLC
- Advanced Graphene Products SA
- Applied Graphene Materials PLC
- Avanzare Innovación Tecnológica S.L.
- BGT Materials Limited
- Directa Plus S.p.A.
- Enerage Inc.
- First Graphene Ltd.
- G6 Materials Corp.
- Global Graphene Group (G3)
- Grafoid, Inc.
- Grolltex, Inc.
- Haydale Graphene Industries PLC
- Layerone AS
- Levidian Nanosystems
- Nanjing Xfnano Materials Tech Co Ltd
- Nanoxplore, Inc.
- The Sixth Element (Changzhou) Materials Technology Co Ltd
- Thomas Swan Ltd
- Versarien™ PLC

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TABLE OF CONTENTS

PART A: GLOBAL MARKET PERSPECTIVE..... 1

1. INTRODUCTION1

1.1 Product Outline.....	4
1.1.1 The Demystification of Graphene.....	4
1.1.1.1 A Technical Insight into Graphene.....	5
1.1.1.2 Properties of Graphene.....	5
1.1.1.2.1 Electronic Properties.....	6
1.1.1.2.2 Thermal Properties.....	6
1.1.1.2.3 Mechanical Properties.....	7
1.1.1.2.4 Flexibility/Elasticity.....	7
1.1.1.2.5 Optical Properties.....	7
1.1.1.2.6 Chemical Stability & Reactivity.....	7
1.1.2 Types/Forms of Graphene.....	8
1.1.2.1 Few-Layer Graphene.....	8
1.1.2.2 Graphene Oxide (GO).....	8
1.1.2.2.1 Reduced Graphene Oxide (rGO).....	9
1.1.2.2.2 Graphene Nanoplatelets.....	9
1.1.2.2.3 Monolayer & Bilayer Graphene.....	10
1.1.3 Synthesis of Graphene.....	11
1.1.4 Applications of Graphene.....	11
1.1.4.1 Composites.....	11
1.1.4.2 Electrical & Electronics.....	12
1.1.4.2.1 Flexible Memory.....	12
1.1.4.2.2 Integrated Circuits.....	13
1.1.4.2.3 Touchscreens.....	13
1.1.4.2.4 Transistors.....	13
1.1.4.2.5 Semiconductors.....	13
1.1.4.3 Energy Storage & Harvesting.....	14
1.1.4.3.1 Batteries.....	14
1.1.4.3.1.1 Lithium-Ion Batteries.....	15
1.1.4.3.1.2 Graphene-Metal Oxide Hybrids.....	15
1.1.4.3.1.3 Graphene-Carbon Nanotube/Fullerene Hybrids.....	15
1.1.4.3.1.4 Graphene Lithium Sulfur Batteries.....	16
1.1.4.3.2 Fuel Cells.....	16
1.1.4.3.3 Solar Cells.....	17
1.1.4.3.4 Supercapacitors.....	17
1.1.4.4 Medical & Biomedical.....	18
1.1.4.4.1 Anticancer Agent.....	18
1.1.4.4.2 Biomarkers.....	18
1.1.4.4.3 DNA Sequencing.....	18
1.1.4.4.4 Dental Implants & Prostheses.....	19
1.1.4.4.5 Implants.....	19
1.1.4.4.6 Prosthesis.....	19
1.1.4.4.7 Therapeutic Use.....	19
1.1.4.5 Paints, Coatings & Inks.....	20
1.1.4.6 Other Applications.....	21
1.1.4.6.1 Alcohol Distillation.....	21
1.1.4.6.2 Ballistics.....	22
1.1.4.6.3 Cement.....	22
1.1.4.6.4 Corrosion Protection for Glass.....	22
1.1.4.6.5 Machinery Lubricants.....	22
1.1.4.6.6 Photothermal Therapy (PTT).....	22
1.1.4.6.7 Thermoelectric.....	23
1.1.4.6.8 Water Treatment.....	23
1.1.5 An End-Use Industry Perspective of Graphene.....	24

2. KEY MARKET TRENDS 26

2.1 Development of First Textile Electrode Enabled by Graphene.....	26
2.2 Copper Nanowires Coated with Graphene Enhance Flexible Electronics.....	26
2.3 Magnetized Graphene Offers Potential to Increase Data Storage Capacity to Unimaginable Levels.....	27
2.4 Graphene to be Instrumental in Advancing Spintronics.....	27

2.5 Graphene Oxide-Based Hybrid Nanopolymers Enhance Bearing Performance.....

2.6 G+BOARD Aims to Radically Transform the Automotive Industry's Future.....	29
2.7 Graphene Being Increasingly Used for Catalysis.....	30
2.8 Graphene's Evolution from a Metallic Material to an Edible One.....	30

3. KEY GLOBAL PLAYERS..... 32

2D Carbon Graphene Material Co Ltd (China).....	32
ACS Material, LLC (United States).....	33
Advanced Graphene Products SA (Poland).....	34
Applied Graphene Materials PLC (United Kingdom).....	35
Avanzare Innovación Tecnológica S.L. (Spain).....	36
BGT Materials Limited (United Kingdom).....	36
Directa Plus S.p.A. (Italy).....	37
Enerage Inc. (Taiwan).....	39
First Graphene Ltd. (Australia).....	40
G6 Materials Corp. (United States).....	41
Global Graphene Group (G3) (United States).....	42
Grafoid, Inc. (Canada).....	43
Grolltex, Inc. (United States).....	43
Haydale Graphene Industries PLC (United Kingdom).....	44
Layerone AS (Norway).....	45
Levidian Nanosystems (United Kingdom).....	45
Nanjing Xfnano Materials Tech Co Ltd (China).....	46
Nanoxplore, Inc. (Canada).....	46
The Sixth Element (Changzhou) Materials Technology Co Ltd (China).....	47
Thomas Swan Ltd (United Kingdom).....	48
Versarien™ PLC (United Kingdom).....	49
2-DTech Graphene (United Kingdom).....	50
Cambridge Graphene Ltd (United Kingdom).....	50

4. KEY BUSINESS AND PRODUCT TRENDS 51

5. GLOBAL MARKET OVERVIEW..... 54

5.1 Global Graphene Market Overview by Type.....	55
5.1.1 Graphene Type Market Overview by Global Region.....	57
5.1.1.1 Few-Layer Graphene.....	57
5.1.1.2 Graphene Nanoplatelets.....	59
5.1.1.3 Graphene Oxide.....	61
5.1.1.4 Mono- & Bi-Layer Graphene.....	63
5.2 Global Graphene Market Overview by Application.....	65
5.2.1 Graphene Application Market Overview by Global Region.....	67
5.2.1.1 Composites.....	67
5.2.1.2 Electrical & Electronics.....	69
5.2.1.3 Energy Storage & Harvesting.....	71
5.2.1.4 Medical & Biomedical.....	73
5.2.1.5 Paints, Coatings & Inks.....	75
5.2.1.6 Other Applications.....	77
5.3 Global Graphene Market Overview by End-Use Industry.....	79
5.3.1 Graphene End-Use Industry Market Overview by Global Region.....	81
5.3.1.1 Aerospace & Defense.....	81
5.3.1.2 Automotive.....	83
5.3.1.3 Chemical.....	85
5.3.1.4 Electronics & Telecommunication.....	87
5.3.1.5 Energy.....	89
5.3.1.6 Healthcare.....	91

PART B: REGIONAL MARKET PERSPECTIVE... 93

REGIONAL MARKET OVERVIEW..... 95

6. NORTH AMERICA 95

6.1 North American Graphene Market Overview by Geographic Region.....	96
6.2 North American Graphene Market Overview by Type.....	98

6.3 North American Graphene Market Overview by Application.....

6.4 North American Graphene Market Overview by End-Use Industry.....	102
6.5 Major Market Players.....	104
ACS Material, LLC (United States).....	104
G6 Materials Corp. (United States).....	105
Global Graphene Group (G3) (United States).....	106
Grafoid Inc. (Canada).....	107
Grolltex Inc. (United States).....	107
Nanoxplore, Inc. (Canada).....	108

6.6 Country-wise Analysis of North American Graphene Market.....

6.6.1 The United States..... 109

6.6.1.1 United States' Graphene Market Overview by Type.....	110
6.6.1.2 United States' Graphene Market Overview by Application.....	112
6.6.1.3 United States' Graphene Market Overview by End-Use Industry.....	114

6.6.2 Canada..... 116

6.6.2.1 Canadian Graphene Market Overview by Type.....	117
6.6.2.2 Canadian Graphene Market Overview by Application.....	119
6.6.2.3 Canadian Graphene Market Overview by End-Use Industry.....	121

6.6.3 Mexico..... 123

6.6.3.1 Mexican Graphene Market Overview by Type.....	124
6.6.3.2 Mexican Graphene Market Overview by Application.....	126
6.6.3.3 Mexican Graphene Market Overview by End-Use Industry.....	128

7. EUROPE 130

7.1 European Graphene Market Overview by Geographic Region.....	131
7.2 European Graphene Market Overview by Type.....	133
7.3 European Graphene Market Overview by Application.....	135
7.4 European Graphene Market Overview by End-Use Industry.....	137
7.5 Major Market Players.....	139
2D Fab AB (Sweden).....	139
Advanced Graphene Products Sa (Poland).....	140
Applied Graphene Materials Plc (United Kingdom).....	141
Avanzare Innovación Tecnológica S.L. (Spain).....	142
BGT Materials Limited (United Kingdom).....	142
Directa Plus S.p.A. (Italy).....	143
Haydale Graphene Industries Plc (United Kingdom).....	145
Layerone AS (Norway).....	146
Levidian Nanosystems (United Kingdom).....	146
Thomas Swan Ltd (United Kingdom).....	147
Versarien™ Plc (United Kingdom).....	148
2-DTech Graphene (United Kingdom).....	149
Cambridge Graphene Ltd (United Kingdom).....	149

7.6 Country-wise Analysis of European Graphene Market.....

7.6.1 France..... 150

7.6.1.1 French Graphene Market Overview by Type.....	151
7.6.1.2 French Graphene Market Overview by Application.....	153
7.6.1.3 French Graphene Market Overview by End-Use Industry.....	155

7.6.2 Germany..... 157

7.6.2.1 German Graphene Market Overview by Type.....	158
7.6.2.2 German Graphene Market Overview by Application.....	160
7.6.2.3 German Graphene Market Overview by End-Use Industry.....	162

7.6.3 Italy	164	8.5 Major Market Players	194	8.6.4 South Korea	222
7.6.3.1 Italian Graphene Market Overview by Type	165	2D Carbon Graphene Material Co Ltd (China)	194	8.6.4.1 South Korean Graphene Market Overview by Type	223
7.6.3.2 Italian Graphene Market Overview by Application	167	Ad-Nano Technologies Private Limited (India)	195	8.6.4.2 South Korean Graphene Market Overview by Application	225
7.6.3.3 Italian Graphene Market Overview by End-Use Industry	169	Enerage Inc. (Taiwan)	196	8.6.4.3 South Korean Graphene Market Overview by End-Use Industry	227
7.6.4 The United Kingdom	171	First Graphene Ltd. (Australia)	197	8.6.5 Rest of Asia-Pacific	229
7.6.4.1 United Kingdom Graphene Market Overview by Type	172	Nanjing Xfnano Materials Tech Co Ltd (China)	198	8.6.5.1 Rest of Asia-Pacific Graphene Market Overview by Type	230
7.6.4.2 United Kingdom Graphene Market Overview by Application	174	The Sixth Element (Changzhou) Materials Technology Co Ltd (China)	199	8.6.5.2 Rest of Asia-Pacific Graphene Market Overview by Application	232
7.6.4.3 United Kingdom Graphene Market Overview by End-Use Industry	176	Xiamen Knano Graphene Technology Co Ltd (China)	200	8.6.5.3 Rest of Asia-Pacific Graphene Market Overview by End-Use Industry	234
7.6.5 Rest of Europe	178	8.6 Country-wise Analysis of Asia-Pacific Graphene Market	201	9. REST OF WORLD	236
7.6.5.1 Rest of Europe Graphene Market Overview by Type	179	8.6.1 China	201	9.1 Rest of World Graphene Market Overview by Type	237
7.6.5.2 Rest of Europe Graphene Market Overview by Application	181	8.6.1.1 Chinese Graphene Market Overview by Type	202	9.2 Rest of World Graphene Market Overview by Application	239
7.6.5.3 Rest of Europe Graphene Market Overview by End-Use Industry	183	8.6.1.2 Chinese Graphene Market Overview by Application	204	9.3 Rest of World Graphene Market Overview by End-Use Industry	241
8. ASIA-PACIFIC	185	8.6.1.3 Chinese Graphene Market Overview by End-Use Industry	206	PART C: GUIDE TO THE INDUSTRY	243
8.1 Asia-Pacific Graphene Market Overview by Geographic Region	186	8.6.2 India	208	1. NORTH AMERICA	243
8.2 Asia-Pacific Graphene Market Overview by Type	188	8.6.2.1 Indian Graphene Market Overview by Type	209	2. EUROPE	245
8.3 Asia-Pacific Graphene Market Overview by Application	190	8.6.2.2 Indian Graphene Market Overview by Application	211	3. ASIA-PACIFIC	248
8.4 Asia-Pacific Graphene Market Overview by End-Use Industry	192	8.6.2.3 Indian Graphene Market Overview by End-Use Industry	213	4. REST OF WORLD	250
		8.6.3 Japan	215	PART D: ANNEXURE	251
		8.6.3.1 Japanese Graphene Market Overview by Type	216	1. RESEARCH METHODOLOGY	251
		8.6.3.2 Japanese Graphene Market Overview by Application	218	2. FEEDBACK	253
		8.6.3.3 Japanese Graphene Market Overview by End-Use Industry	220		

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