Global and China Graphene Industry Report, 2016-2020

Dec. 2016

ResearchInChina
www.researchinchina.com

ResearchInChina

The Vertical Portal for China Business Intelligence

STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Room 502, Block 3, Tower C, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

Abstract

Graphene, first discovered in 2004, is now the thinnest and hardest nanomaterial. The virtually transparent material absorbs only 2.3% of the incident light, with higher thermal conduction coefficient, very high electron mobility at room temperature, and lower electrical resistance.
In 2015, the graphene market size in China exceeded RMB500 million, accounting for about 25% of the global total. In the future, as manufacturers keep expanding their capacity and making breakthroughs in technical R&D, graphene will find wider applications, thus stimulating the rapid development of the market. We expect that China's graphene market size will grow at a compound annual rate of over 90.0% in 2016-2020.

At present, the graphene industry is at the stage of R&D and industrialization at a time when all countries are aggressively getting down to patent application. In 2015, the global graphene patent filings exceeded 6,000, which mainly came from China, South Korea, the United States, and other countries. Particularly, China's patent fillings, which are mainly involved in such fields as energy storage devices, transparent electrode, and composites, occupied more than 50%.

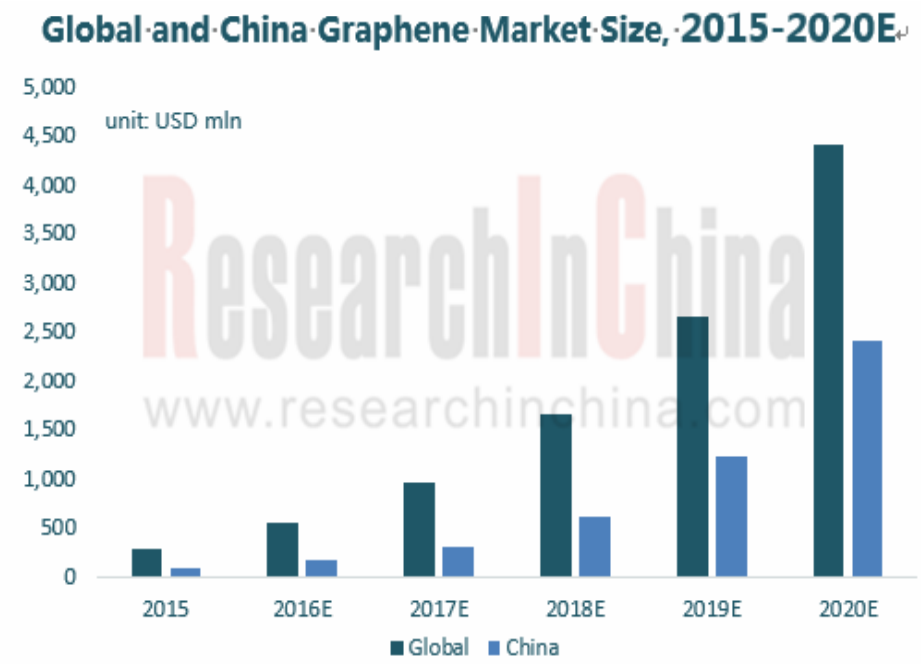
Graphene producers are mainly concentrated in the United States, China, and the UK, and the players consist of Northern Graphite,CVD Equipment,Focus Graphite, Beijing Graphene Holding Group, The Sixth Element, and 2D Carbon, etc. However, owing to their higher product R&D expenditure, graphene manufacturers are generally in the red. For example, The Sixth Element and 2D Carbon, though achieving mass-production of graphene, each still made a loss of more than RMB15 million in 2015.

At present, the downstream application of graphene in China principally focuses on powder, that is, graphene is applied as modified additives in the fields like lithium battery, super-capacitors, and composites. In the future, with more breakthroughs in production technology, product performance will get further improved, so that the applications would be expanded to wearable devices, thermal conductive materials, energy conservation, environmental protection, and other fields.

Lithium battery: graphene has been widely applied in lithium battery as additives of anode and cathode materials. In 2015, the market size of graphene used in lithium battery made up over 70%. In the future, driven by new energy vehicles, lithium battery industry will continue to develop rapidly and have the steadily growing demand for graphene. We project that in 2015-2020 the market size of graphene used in lithium battery will grow at a compound annual rate of above 50%.

Global and China Graphene Industry Report, 2016-2020 highlights the following:

- Graphene performance, preparation methods, industrial development history, and development bottleneck, etc.;
- Current situation, market size, market price, and patents of graphene worldwide;
- Policy environment, current situation, market size, market structure, market competitiveness, corporate competition of graphene in China; Output and market price of graphene production materials (graphite, methane, and ethanol, etc.);
- Current situation and graphene demand of downstream lithium battery, super capacitor, transparent electrode, integrated circuit, and composites;
- Operation, graphene business, etc. of 19 global and 15 Chinese graphene companies.



Source: *Global and China Graphene Industry Report, 2016-2020* by ResearchInChina

ResearchInChina

The Vertical Portal for China Business Intelligence

Table of contents

Room 502, Block 3, Tower C, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com

Table of contents

Selected Charts

- Types of Graphene
- Performance of Graphene
- Conductivity of Typical Electric Conductors
- Carrier Mobility of Typical Semiconductors
- Thermal Conductivity of Typical Heat Dissipation Materials
- Four Preparation Methods of Graphene
- Graphene Development History
- Graphene Industry Chain
- Competitive Landscape of Graphene Industry Chain
- Progress in R&D of CVD Graphene Preparation in Major Countries Worldwide
- Global Market Size of Graphene, 2015-2020E
- Global Market Size of Graphene by Product, 2015/2020E
- Demand Structure of Graphene Worldwide by Sector, 2015
- Global Market Prices of Graphene Powder, 2011/2015
- Global Market Prices of Graphene Conductive Film, 2012-2022E
- Graphene Industrialization Process
- Roadmap for Graphene Industrialization, 2015-2025E
- Graphene-related R&D Projects and Grants in Foreign Countries
- Major Global Graphene Preparation Enterprises
- Distribution of Graphene Patent Fillings Worldwide, 1994-2016
- Proportion of Graphene Patents Worldwide by Region, 2015
- Proportion of Graphene Patents in Major Countries by Technology, 2015
- Proportion of Graphene Patents Worldwide by Application, 2014-2015
- Proportion of US Graphene Patents in Worldwide Total 2015
- Proportion of South Korean Graphene Patents in Worldwide Total, 2015

Selected Charts

- Proportion of Japanese Graphene Patents in Worldwide Total, 2015
- Samsung's Graphene Patent Fillings, 2008-2016
- Proportion of Samsung's Graphene Patents by Application, 2016
- LG's Graphene Patent Fillings, 2011-2016
- Proportion of LG's Graphene Patents by Application, 2016
- IBM's Graphene Patent Fillings, 2008-2016
- Proportion of IBM's Graphene Patents by Application, 2016
- Ranking of Global Graphene Index by Competitive Potential, 2015
- Ranking of Global Graphene Index by Competitive Behavior, 2015
- Ranking of Global Graphene Index by Competitive Performance, 2015
- China's Major Policies on Graphene, 2012-2016
- Enterprises that Received Governmental Subsidies, 2015
- Porter's Five Forces Model for the Graphene industry
- Proportion of Graphene Papers Published Worldwide by Country as of the End of 2015
- Market Size of Graphene in China, 2015-2020E
- Preparation Process of Graphene Powder
- Major Graphene Powder Manufacturers in China, 2015
- Major Graphene Film Manufacturers in China, 2015
- Distribution of Major Graphene Industrial Parks in China
- Graphene Patent Filings in China, 2006-2015
- Distribution of Graphene Patents in China, 2015
- Proportion of China's Graphene Patents Worldwide by Application, 2015
- Major Graphene Manufacturers in China
- Graphene Business Layout of Major Graphene Manufacturers in China
- Graphite-based Graphene Preparation

Selected Charts

- Graphite Output and Reserves in Major Countries/Region, 2012-2015
- Graphite Price, 2004-2015
- Price for China-made Methane, 2015-2016
- Price for China-made Ethanol, 2015
- Major Global Graphene Users in Downstream Sectors
- Internal Resistance for Conductive Additives of Graphene-based Lithium Battery
- Lithium Storage Capability of Anode Materials of Various Types
- Progress in Research on Graphene for Lithium Battery
- Global Market Share of Main Lithium Battery Anode Materials, 2015
- Market Size of Graphene for Lithium Battery in China, 2015/2020E
- Global Lithium Battery Market Size, 2012-2020E
- Global Lithium Battery Market Demand and Size, 2011-2020E
- Global Demand for Lithium Battery Anode Materials, 2010-2020E
- Competitive Landscape of Global Lithium Battery Market, 2015
- Sales Volume and Market Size of Lithium Battery in China, 2011-2020E
- Shipments of Lithium Battery Anode Materials in China, 2012-2020E
- China's Lithium Battery Export Volume and Value, 2007-2016
- Major Lithium Battery Manufacturers in China
- Application of Graphene in Supercapacitor
- Parameters for Supercapacitor Electrode Materials
- R&D Focus of Graphene Supercapacitor
- Progress in Graphene in Supercapacitor
- Market Size of Graphene for Supercapacitor in China, 2015-2020E
- Global Market Size of Supercapacitor, 2015-2020E
- Market Size and Growth Rate of Supercapacitor in China, 2012-2020E

Selected Charts

- Progress in Graphene in Touch Panel
- Global Shipments of Touch Panels, 2012-2020E
- Global Shipments of LCD, 2010-2020E
- Shipments of Touch Panels in China by Product, 2010-2016
- Shipments of LCD TV in China, 2008-2016
- Market Size of Integrated Circuit in China, 2010-2020E
- Cost Structure of Integrated Circuit by Product, 2015
- Price Trend for Polycrystalline Silicon in China, 2015
- Price Trend for Polycrystalline Silicon Battery in China, 2015
- Application of Graphene in Polyester-based Composites
- Research Progress in Graphene Application in Heat Dissipation Materials
- Net Income of Northern Graphite, 2010-2016
- Revenue and Net Income of CVD, 2010-2016
- Revenue Structure of CVD by Business, 2013-2016
- Net Loss of Focus Graphite, FY2010-FY2016
- Operating Costs of Lomiko Metals, 2010-2015
- 3D Graphite Patents of Lomiko Metals
- Lomiko Metals' Development of Graphite, 2015
- Development of Graphene ESD
- Distribution of Graphene Industrial Park of Lomiko Metals
- Revenue and Net Income of Applied Graphene Materials, FY2011-FY2016
- Business Strategy of Applied Graphene Materials
- Customers of Applied Graphene Materials
- Market Opportunities of Applied Graphene Materials
- Global Footprint of Graphene NanoChem Plc

Selected Charts

- Revenue and Net Income of Graphene NanoChem Plc, 2011-2015
- Revenue and Net Income of Haydale, FY2011- FY2016
- Operating Revenue Structure of Haydale by Region, FY2014- FY2015
- Investment Highlights of Graphene 3D Lab, 2015
- Development Planning of Graphene 3D Lab
- Major Customers of Graphene Square
- Revenue and Net Income of The Sixth Element, 2012-2016
- Revenue of The Sixth Element by Product, 2014-2015
- Top 5 Customers of The Sixth Element, 2015
- Top 5 Suppliers of The Sixth Element, 2015
- Development History of Graphene Business of The Sixth Element
- Graphene Products and Their Application of The Sixth Element
- Revenue and Net Income of 2D Carbon, 2013-2016
- Revenue Structure of 2D Carbon by Product, 2013-2015
- R&D Costs and % of Total Revenue of 2D Carbon, 2013-2016
- Transparent Graphene Film Capacity and Sales Value of 2D Carbon, 2013-2015
- Data on PET-based Graphene Product of 2D Carbon
- Net income of Beijing Graphene Holding Group, 2014-2016
- Main Graphene Products of Ningbo Morsh Technology
- Main Graphene Products of Chongqing Graphene Tech.
- Capacity of Fangda Carbon by Product, 2015
- Revenue and Net Income of Fangda Carbon, 2010-2016
- Revenue Structure of Fangda Carbon by Product, 2010-2016
- Revenue Structure of Fangda Carbon by Region, 2010-2016
- Gross Margin of Fangda Carbon by Product, 2009-2016

Selected Charts

- R&D Costs and % of Total Revenue of Fangda Carbon, 2011-2016
- Revenue and Net Income of Der Future, 2012-2016
- Revenue Structure of Der Future by Region, 2014-2016
- Gross Margin of Der Future, 2011-2016
- R&D Costs and % of Total Revenue of Der Future, 2013-2016
- Proposed/On-going Projects of Der Future, 2016
- Graphene Business Development History of Der Future
- Revenue and Net Income of Kangdexin, 2010-2016
- Revenue Structure of Kangdexin by Product, 2013-2016
- Revenue Structure of Kangdexin by Region, 2010-2016
- Gross Margin of Kangdexin, 2011-2016
- R&D Costs and % of Total Revenue of Kangdexin, 2011-2016
- Main Products and Their Specifications of Knano Graphene
- Revenue and Net Income of Knano Graphene, 2012-2016
- Revenue Structure of Knano Graphene by Product, 2014-2015
- Top 5 Customers of Knano Graphene, 2015
- Top 5 Suppliers of Knano Graphene, 2015
- Main Graphene Patents of Knano Graphene
- Graphene Capacity of Knano Graphene, 2016
- Graphene Series Products and Their Specifications of XFNANO
- Main Graphene Products of JCNANO Tech
- Main Graphene Products of Plannano
- Graphene Industry Development History of Dongxu Optoelectronic
- Revenue and Net Income of Huagao Graphene, 2014-2016
- Revenue Structure of HuagaoGraphene by Product, 2014-2015

ResearchInChina

The Vertical Portal for China Business Intelligence

How to Buy

You can place your order in the following alternative ways:

1.Order online at www.researchinchina.com

2.Fax order sheet to us at fax number:+86 10 82601570

3. Email your order to: report@researchinchina.com

4. Phone us at +86 10 82600828/ 82601561

Party A:			
Name:			
Address:			
Contact Person:		Tel	
E-mail:		Fax	

Party B:			
Name:	Beijing Waterwood Technologies Co., Ltd (ResearchInChina)		
Address:	Room 502, Block 3, Tower C, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080		
Contact Person:	Liao Yan	Phone:	86-10-82600828
E-mail:	report@researchinchina.com	Fax:	86-10-82601570
Bank details:	Beneficial Name: Beijing Waterwood Technologies Co., Ltd Bank Name: Bank of Communications, Beijing Branch Bank Address: NO.1 jinxiyuan shijicheng,Landianchang,Haidian District,Beijing Bank Account No #: 110060668012015061217 Routing No # : 332906 Bank SWIFT Code: COMMCNSHBJG		

Title	Format	Cost
Total		

Choose type of format

PDF (Single user license) ……..2,450 USD

Hard copy …… 2,650 USD

PDF (Enterprisewide license)…..... 3,700 USD

※ Reports will be dispatched immediately once full payment has been received. Payment may be made by wire transfer or credit card via PayPal.

ResearchInChina

www.researchinchina.com

ResearchInChina

The Vertical Portal for China Business Intelligence

RICDB service

About ResearchInChina

ResearchInChina (www.researchinchina.com) is a leading independent provider of China business intelligence. Our research is designed to meet the diverse planning and information needs of businesses, institutions, and professional investors worldwide. Our services are used in a variety of ways, including strategic planning, product and sales forecasting, risk and sensitivity management, and as investment research.

Our Major Activities

- ***Multi-users market reports***
- ***Database-RICDB***
- ***Custom Research***
- ***Company Search***

RICDB (http://www.researchinchina.com/data/database.html), is a visible financial data base presented by map and graph covering global and China macroeconomic data, industry data, and company data. It has included nearly 500,000 indices (based on time series), and is continuing to update and increase. The most significant feature of this base is that the vast majority of indices (about 400,000) can be displayed in map.

After purchase of our report, you will be automatically granted to enjoy 2 weeks trial service of RICDB for free.

After trial, you can decide to become our formal member or not. We will try our best to meet your demand. For more information, please find at www.researchinchina.com

For any problems, please contact our service team at:

Room 502, Block 3, Tower C, Changyuan Tiandi Building, No. 18, Suzhou Street, Haidian District, Beijing, China 100080
Phone: +86 10 82600828 ● Fax: +86 10 82601570 ● www.researchinchina.com ● report@researchinchina.com