

The Global Market for Carbon Nanomaterials 2020: Carbon Nanotubes, Graphene, Fullerenes, Carbon and Graphene Quantum Dots and Nanodiamonds

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Abstracts

Carbon based-nanomaterials include fullerenes, carbon nanotubes (CNTs), graphene and its derivatives, graphene oxide, nanodiamonds, and carbon-based quantum dots (CQDs). Due to their unique structural dimensions and excellent mechanical, electrical, thermal, optical and chemical properties, carbon nanomaterials have gained great interest in a wide range of industrial market.

Carbon nanotubes (CNTs) and graphene are the strongest, lightest and most conductive fibres known to man, with a performance-per-weight greater than any other material. In direct competition in a number of markets, they are complementary in others.

Once the most promising of all nanomaterials, MWCNTs face stiff competition in conductive applications from graphene and other 2D materials and in mechanically enhanced composites from nanocellulose. Several major producers have closed their MWCNT capacities, but applications continue to come to market and LG Chem has established a large-scale production facility. Super-aligned CNT arrays, films and yarns have found applications in consumer electronics, batteries, polymer composites, aerospace, sensors, heaters, filters and biomedicine.

Large-scale industrial production of single-walled carbon nanotubes (SWCNTs) has been initiated, promising new market opportunities in transparent conductive films, conductive materials, transistors, sensors and memory devices. Again, a number of producers have ceased production, but those left are finding increased demand for their materials. SCWNTs are regarded as one of the most promising candidates to utilized as building blocks in next generation electronics.

Two-dimensional(2D) materials are currently one of the most active areas of nanomaterials research, and offer a huge opportunity for both fundamental studies and practical applications, including superfast, low-power, flexible and wearable electronics, sensors, photonics and electrochemical energy storage devices that will have an immense impact on our society.

Graphene is a ground-breaking two-dimensional (2D) material that possesses extraordinary electrical and mechanical properties that promise a new generation of innovative devices. New methods of scalable synthesis of high-quality graphene, clean delamination transfer and device integration have resulted in the commercialization of state-of-the-art electronics such as graphene touchscreens in smartphones and flexible RF devices on plastics.

Nanodiamonds (NDs) are relatively easy and inexpensive to produce, and have moved towards large-scale commercialization due to their excellent mechanical, thermal properties and chemical stability.

Other carbon nanomaterials of interest include fullerenes and more recently, carbon and graphene quantum dots.

This report on the carbon nanotubes, graphene and 2D materials and nanodiamonds market is by far the most comprehensive and authoritative report produced.

Report contents include:

Carbon nanotubes, fullerene, nanodiamond and graphene products.

Assessment of carbon nanomaterials market including production volumes, competitive landscape, commercial prospects, applications, demand by market and region, commercialization timelines, prices and producer profiles.

Unique assessment tools for the carbon nanomaterials market, end user applications, economic impact, addressable markets and market challenges to provide the complete picture of where the real opportunities in carbon nanomaterials are.

Company profiles of carbon nanotubes, graphene, 2D materials, fullerenes, carbon quantum dots and nanodiamonds producers and product developers,

including products, target markets and contact details

Market assessment of other 2D materials.

Assessment of carbon nanomaterials by market including applications, key benefits, market megatrends, market drivers for, technology drawbacks, competing materials, potential consumption of to 2030 and main players.

In depth-assessment of carbon nanomaterials producer and distributor pricing in 2020.

Global market for carbon nanomaterials in tons, by sector, historical and forecast to 2030.

Full list of technology collaborations, strategic partnerships, and M&As in the global carbon nanomaterials market.

In-depth profiles of carbon nanomaterials producers including products, production capacities, manufacturing methods, collaborations, licensing, customers and target markets.

Detailed forecasts for key growth areas, opportunities and demand.

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