

**Carbon Nanotubes Market by Type (Single-walled Carbon nanotubes (SWNT), Multi-walled carbon nanotubes (MWCNT)), Method, End-use Industry (Electronics & Semiconductors, Energy & Storage, Structural Composites Application), and Region - Global Forecast to 2029**

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**Report description:**

The carbon nanotubes (CNT) market is projected to register a CAGR of 14.9% between 2024 and 2029, in terms of value. The carbon nanotubes (CNT) market size is projected to reach USD 2.6 billion by 2029 at a CAGR of 14.9% from USD 1.31 billion in 2024. The SWCNT, by type segment is estimated to account for the largest share in terms of value of the carbon nanotubes (CNT) market in 2023. MWCNTs, by type likely to account for the largest share of carbon nanotubes market in terms of volume.

Multi-walled carbon nanotubes (MWCNTs) consist of multiple carbon cylinders or tubes arranged in a concentric pattern, with their ends typically sealed by carbon end-caps. Variants of MWCNTs include herringbone, bamboo, and double-wall structures. Compared to single-walled carbon nanotubes (SWCNTs), MWCNTs are easier to produce on a large scale. Because of their excellent electrical conductivity, they can find a many applications like: conductive heating films, transparent conductive electrode, conductive nano inks, displays, nanodevices, chemical sensors and actuators, energy storage systems (e.g. supercapacitors and improved electric batteries), solar cells and thermal interface materials.

Energy and storage dominates the carbon nanotube (CNT) business, which is the fastest-growing end-use industry. CNTs are primarily employed in energy and storage in terms of volume. Many manufacturers are now focused on EV manufacturing as an increasing number of countries want to cut CO2 emissions and clean up their environment. Lithium-ion batteries are likely to continue to dominate the market over the projection period, as PHEVs and portable electronic devices demand more energy. As a result, carbon nanotubes are anticipated to gain traction in the energy and storage sectors.

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"Lithium-ion batteries, by sub-application accounted for the largest growing end-use industry segment of CNT market"

The need for lithium-ion batteries is rapidly increasing in cars that require lightweight, high-energy-dense solutions. Cell phones, notebook computers, and hybrid vehicles all utilize these batteries because they have the highest energy density per weight. Lithium batteries, which are often used in portable devices, are made up of two electrodes (the anode or negative electrode), a cathode (the positive electrode), and an electrolyte--a substance that is electrically conductive and allows charged particles or ions to travel readily. These batteries use CNTs as electrodes. CNTs are used as electrode materials in capacitors. CNTs' high density and orientation features minimize the capacitor's internal resistance.

"Asia Pacific, by region is forecasted to be the fastest growing segment of carbon nanotubes market during the forecast period." Asia Pacific now has the biggest marketplace and is expected to remain so for an extended period of time. The primary end-use industries for CNTs include the construction and building industries, automotive, and electrical and electronic sectors. Vehicle sales in the region are expected to expand as a result of the expansion of the region's roadway and transportation networks, as well as government initiatives to promote industrial and infrastructural development. This is expected to have a favorable impact on the market throughout the forecast period. Because of its increased industrial production over the last five years, China now leads the world in CNT demand.

#### Interviews:

- By Company Type: Tier 1 - 46%, Tier 2 - 36%, and Tier 3 - 18%
- By Designation: C Level - 21%, D Level - 23%, and Others - 56%
- By Region: North America - 37%, Europe - 26%, Asia Pacific - 23%, and South America - 4%, Middle East & Africa - 10%

The key companies profiled in this report are LG Chem (South Korea), Cabot Corporation (US), Resonac Corporation (Showa Denko K.K.) (Japan), Jiangsu Cnano Technology Co., Ltd. (China), Timesnano (Chengdu Organic Chemicals Co. Ltd.) (China), Nanocyl SA (Belgium), Arkema S.A. (France), Sumitomo Corporation (Japan), and Cheap Tubes, Inc. (US).

#### Research Coverage:

The carbon nanotubes (CNT) market has been segmented based on Type (Single-walled Carbon nanotubes (SWNT), Multi-walled carbon nanotubes (MWCNT)), Method (Chemical Vapor Deposition, Catalytic Chemical Vapor Deposition, High-Pressure Carbon Monoxide Reaction, Others), End-use Industry (Electronics & Semiconductors, Energy & Storage, Structural Composites Application, Chemical Materials & Polymers, Medical, and Others), and by Region (Asia Pacific, North America, Europe, South America, Middle East & Africa).

This report provides insights on the following pointers:

- Analysis of key drivers (Emerging demand from the APAC region, High growth of end-use industries, such as electrical & electronics and automotive, increasing demand for lightweight and low carbon-emitting vehicles), restraints (Environmental concerns and health & safety issues), opportunities (Growth in emerging applications), and challenges (Maintaining quality and reducing processing cost) influencing the growth of the carbon nanotubes (CNT) market.
- Product Development/Innovation: Detailed insight of upcoming technologies, research & development activities, and new product launch in the carbon nanotubes (CNT) market.
- Market Development: Comprehensive information about lucrative markets - the report analyses the carbon nanotubes (CNT) market across varied regions.
- Market Diversification: Exclusive information about the new products & service untapped geographies, recent developments, and investments in carbon nanotubes (CNT) market.
- Competitive Assessment: In-depth assessment of market shares, growth strategies and service offerings of leading players like LG Chem (South Korea), Cabot Corporation (US), Resonac Corporation (Showa Denko K.K.) (Japan), Jiangsu Cnani Technology Co., Ltd. (China), Timesnano (Chengdu Organic Chemicals Co. Ltd.) (China), among other in the carbon nanotubes (CNT) market.

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