

North America Carbon Nanotubes Market Forecast to 2028 –Regional Analysis – by Type (Multi-Walled Carbon Nanotubes and Single-Walled Carbon Nanotubes), and Application (Electronics and Semiconductors, Energy Storage, Structural Composites, Aerospace and Defense, Medical, and Others)

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Abstracts

The North America carbon nanotubes market is expected to grow from US\$ 1,071.18 million in 2022 to US\$ 2,730.90 million by 2028. It is estimated to grow at a CAGR of 16.9% from 2022 to 2028.

Rising Demand for Carbon Nanotube Based Composites is Fueling North America Carbon Nanotubes Market

The growing demand for lightweight substitutes of metal with superior thermal, electrochemical, and mechanical characteristics has resulted in rising research related to composites and composite materials. Technological advancements and next-generation microscale applications in the electrical & electronics sector need efficient and high-functionality materials such as CNTs. Further, CNT-based composites technology is widely utilized in aerospace, defense, automotive and infrastructure industries. National Aeronautics and Space Administration (NASA) funded a five-year Space Technology Research Institute (STRI) called US-COMP, which commenced in 2017, for research and development of CNT-based composites. The research focused on the innovation of lightweight ultra-high strength material for application in exploration vehicles.

CNT-reinforced polymer composites are used in automotive applications such as exhaust systems, catalytic converters, suspension systems, engines, automotive structural components, and power train materials. Moreover, multi-walled CNTs are gaining popularity as a robust and lightweight alternative to copper. The growing demand for lightweight automobiles with high fuel efficiency and minimal carbon emissions has encouraged automotive manufacturers to invest in research of novel CNT-based composites and increasingly utilize carbon nanotubes. Thus, the rising demand for CNT-based composites from various industries is driving the carbon nanotubes market.

North America Carbon Nanotubes Market Overview

The North America carbon nanotubes market is segmented into the US, Canada, and Mexico. The regional market has been growing steadily over the past few years due to the region's strong research and development capabilities and increasing demand for high-performance materials. The aerospace, automotive, defense, and electronics industries are among the key consumers of carbon nanotubes. The US is the largest market for carbon nanotubes in North America. The country has several established companies and research institutions such as Rice University, Houston, Texas; Nanocomp Technologies, Merrimack, New Hampshire; and Zyvex Technologies, Columbus, Ohio that focus on their development and commercialization. Moreover, the Rice Research team, led by Professor Richard Smalley, was responsible for the discovery of carbon nanotubes in 1991. North America has many carbon nanotube manufacturers, offering carbon nanotubes to a wide range of industries. There are also emerging opportunities in Canada and Mexico and in niche applications such as biomedicine and sporting goods. While the market still faces challenges related to cost and scalability, ongoing advancements in manufacturing processes and increasing investments in research and developments are expected to drive the carbon nanotube market growth in North America in the coming years. In 2021, researchers at Rice University in Texas developed a new method for producing carbon nanotubes with high control over their structure and properties. The researchers used a technique called HiPCO (High Pressure Carbon Monoxide) to produce carbon nanotubes with a specific chirality and diameter, which could have applications in fields such as electronics and energy storage.

Exhibit: North America Carbon Nanotubes Market Revenue and Forecast to 2028 (US\$ Million)

North America Carbon Nanotubes Market Segmentation

The North America carbon nanotubes market is segmented into type, application, and country.

Based on type, the North America carbon nanotubes market is bifurcated into multi-walled carbon nanotubes, and single-walled carbon nanotubes. The multi-walled carbon nanotubes segment registered a larger market share in 2022.

Based on application, the North America carbon nanotubes market is segmented into electronics and semiconductors, energy storage, structural composites, aerospace and defense, medical, and others. The structural composites segment held the largest market share in 2022.

Based on country, the North America carbon nanotubes market is segmented into the US, Mexico, and Canada. The US dominated the market share in 2022.

Nanoshel LLC; NanoLab Inc; Kumho Petrochemical Co Ltd; Klean Industries Inc; LG Chem Ltd; Raymore Industries Inc; Nanocyl SA; Arkema SA; Tokyo Chemical Industries Co Ltd; Cobot Corp are the leading companies operating in the carbon nanotubes market in the region.

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