

# Global Carbon Nanotubes Market & Patent Insight 2023

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## Abstracts

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“Global Carbon Nanotubes Market & Patent Insight 2023” Report Highlights:

Functionalization of Carbon Nanotubes

Global Carbon Nanotube Product Outlook

Global Carbon Nanotube Patent Insight by Sector/Application: 300 Patents

Global Carbon Nanotube Project Insight by Sector/Applications: 50 Projects

Global Carbon Nanotubes Market by Applications & Region

Global Carbon Nanotube Market Dynamics

Global Carbon Nanotubes Market Future Outlook

Carbon nanotube (CNT) is undoubtedly among the most sought after and most dynamic item among the numerous categories in the evolving field of newly synthesized nano-materials. There has been considerable growth in the research, development and technological understanding of these remarkable materials to enable them for industrial applications. Universities, small businesses and start-ups, as well as large corporations, have continued to probe and exploit numerous commercial possibilities for these fascinating materials. As a result, the list of product applications is expanding

considerably and is projected to do so well into the future.

The most tangible evidence for growth and interest in global carbon nanotube market is reflected by the emergence of new carbon nanotube producers capable of offering carbon nanotubes in commercial-scale quantities—in kilograms, tons and even hundreds of tons, depending on the specific grade—at more affordable and increasingly competitive unit pricing. In addition, after several years of incubation, there is a new breed of more mature university spin-offs, or nanotechnology companies, targeting specific application sectors.

In order to meet the growing demand across the sectors, global carbon nanotubes production capacity has increased considerably as more firms have started production of carbon nanotubes. In last five years from 2011 to 2016, total production capacity of carbon nanotubes in all the countries together became twice – approximately grew from close to 10000 tons in 2011 to 20000 tons in 2016. However, the actual production was much below the capacity because of low demand as carbon nanotube market across the world is at the nascent stage. As the result of minimal demand, the average capacity utilization factor of the production facilities has so far been only about 35% – 40%

Carbon nanotubes market by area of applications change from one region to another. In Asia-Pacific region, growing electronic and automobile sectors along with rapid overall industrial growth are driving the carbon nanotube market. On the other hand, in North America, Europe and other regions including Latin America and Africa, market of Carbon nanotube is dominated by polymer and chemical industries with moderate impacts of electronic sector sectors. Though at the beginning North America and Europe were the two leading market segments for CNTs, the economic slowdown in both of these regions badly affected the growth of this market.

The sector comprising polymers and composites is likely to retain its maximum share in market. Discovery and commercial use of carbon nanotubes have benefited this sector the most as the excellent physical properties of carbon nanotubes match to the requirements of the materials in this sector. Researches indicate many more applications of carbon nanotubes are possible in this sector and exploration activities are also going on. Hence it is quite natural that this sector will continue its dominance in the entire carbon nanotube market. However, there will be a gradual decline of relative share of polymer & composites sector while those for electrical & electronics and energy will continue to increase, though marginally.

With excellent physical properties and hence appropriateness in large number of

industrial applications, the future market of carbon nanotubes is bound to grow exponentially. This growth is going to take place both in terms of end-users and geographical regions – the scope of applications of carbon nanotubes has already broadened and is expected to broaden further while instead of being concentrated in few regions, carbon nanotube market is expanding all the regions across the world. The demand for carbon nanotubes is likely to grow annually at an approximate rate of 20% in the coming years.

## Contents

### **1. INTRODUCTION TO CARBON NANOTUBES**

- 1.1 What is Carbon Nanotube
- 1.2 Overview of Global Carbon Nanotube Market

### **2. PRODUCTION OF CARBON NANOTUBE**

- 2.1 Arc Discharge Method
- 2.2 Laser Ablation Method
- 2.3 Chemical Vapor Deposition
- 2.4 Other Methods

### **3. FUNCTIONALIZATION OF CARBON NANOTUBES**

- 3.1 Covalent Functionalization of Carbon Nanotubes
- 3.2 Non-Covalent Functionalization
- 3.3 Protein Functionalization
- 3.4 Polymer Functionalization

### **4. GLOBAL CARBON NANOTUBE PRODUCT OUTLOOK**

- 4.1 Single-Walled Carbon Nanotube (SWNT)
- 4.2 Multi-Walled Carbon Nanotube (MWNT)

### **5. CARBON NANOTUBE APPLICATIONS OUTLOOK**

- 5.1 Polymers & Chemicals
  - 5.1.1 Polymer-Nanotube Composites
  - 5.1.2 Mixtures
  - 5.1.3 Coatings & Films
  - 5.1.4 Automotive & Aerospace
  - 5.1.5 Sporting Goods
- 5.2 Energy
  - 5.2.1 Hydrogen Storage
  - 5.2.2 Supercapacitor
  - 5.2.3 Solar Cells
- 5.3 Electrical & Electronics

5.3.1 Transistors

5.3.2 Field Emission Display

5.3.3 Sensors

5.4 Medical & Pharmacy

5.4.1 Carbon Nanotube based Therapeutics

5.4.2 Carbon Nanotubes in Drug Delivery

5.4.3 Carbon Nanotubes in Tissue Engineering

5.4.4 Carbon Nanotubes in Cancer Therapeutics

5.4.5 Carbon Nanotubes in Diagnosis/Imaging

## **6. GLOBAL PATENTS INSIGHT ON CARBON NANOTUBES APPLICATIONS BY SECTOR**

6.1 Medical Diagnosis

6.2 Drug Delivery

6.3 Cancer Treatment

6.4 Medical Devices/Implantation & other biomedical applications

6.5 Renewable Energy

6.6 Capacitor

6.7 Polymer & Composites

6.8 Plastic

6.9 Mixtures & Coatings

6.10 Automotive

6.11 Space Research

6.12 Electronics

6.13 Transistor

6.14 Field Emission

6.15 Sensor

6.16 Electricals

6.17 Functionalization/Processing of Carbon Nanotube

6.18 Energy Storage

6.19 Battery

6.20 Environmental Remediation

6.21 Production/Synthesis of Carbon Nanotubes

6.22 Carbon Nanotube Fiber

6.23 Carbon Nanotube Film/Array

6.24 Semiconductors

6.25 Miscellaneous

## **7. RECENT & ONGOING PROJECTS ON CARBON NANOTUBES**

- 7.1 Medical & Pharmacy
- 7.2 Biomedical
- 7.3 Electronics
- 7.4 Sensor/Detector
- 7.5 Electricals
- 7.6 Energy & Power
- 7.7 Energy Storage
- 7.8 Polymer & Composites
- 7.9 Coatings
- 7.10 Water Purification/Desalination
- 7.11 Carbon Nanotube Synthesis/Functionalization
- 7.12 Environmental Remediation
- 7.13 Carbon Nanotube Properties
- 7.14 Others

## **8. GLOBAL CARBON NANOTUBES MARKET BY APPLICATIONS**

## **9. GLOBAL CARBON NANOTUBE MARKET BY REGION**

## **10. GLOBAL CARBON NANOTUBE MARKET FUTURE OUTLOOK**

- 10.1 According to Applications
- 10.2 According to Regions

## **11. GLOBAL CARBON NANOTUBE MARKET DYNAMICS**

- 11.1 Market Drivers
- 11.2 Commercial Challenges

## **12. COMPETITIVE LANDSCAPE**

- 12.1 SUSN Sinotech
- 12.2 Nano-C
- 12.3 Showa Denko
- 12.4 Nanocyl
- 12.5 OCSiAl
- 12.6 Hanwha Nanotech

- 12.7 Raymor
- 12.8 LG Chem
- 12.9 Timesnano
- 12.10 Thomas Swan
- 12.11 Kumho Petrochemical
- 12.12 Klean Commodities
- 12.13 Arkema
- 12.14 Nantero
- 12.15 XiNano Materials Inc.

## List Of Figures

### LIST OF FIGURES

Figure 1-1: Global - Annual CNT Production Capacity (Tons), 2010 & 2016

Figure 1-2: Top 5 Global Firms for CNTs According to Production Capacities (Tons), 2016

Figure 3-1: Functionalization of Carbon Nanotubes Using Different Molecules

Figure 5-1: Applications of Carbon Nanotubes in Medical

Figure 5-2: Carbon Nanotube Applications in Therapeutics

Figure 8-1: Global - Carbon Nanotube Demand by Applications (Tons), 2017

Figure 8-2: Global - Carbon Nanotubes Demand by Applications (%), 2017

Figure 8-3: Global - Carbon Nanotubes Market by Applications (US\$ Million), 2017

Figure 8-4: Global - Carbon Nanotubes Market Value by Applications (%), 2017

Figure 9-1: Global - Carbon Nanotubes Market Demand by Region (Tons), 2017

Figure 9-2: Global - Carbon Nanotube Market Demand by Region (%), 2017

Figure 9-3: Global - Carbon Nanotubes Market Value by Region (US\$ Million), 2017

Figure 9-4: Global- Carbon Nanotubes Market by Region (%), 2016

Figure 10-1: Global - Projected Demand for Carbon Nanotubes (Tons), 2018 & 2023

Figure 10-2: Global - Projected Carbon Nanotubes Demand by Sector (Tons), 2018 & 2023

Figure 10-3: Global - Projected Demand for Carbon Nanotubes by Applications (%), 2018

Figure 10-4: Global - Projected Demand for Carbon Nanotubes by Sector (%), 2023

Figure 10-5: Global - Projected Market for Carbon Nanotubes (US\$ Billion), 2018 & 2023

Figure 10-6: Global - Projected Carbon Nanotubes Market by Applications (US\$ Million), 2018 & 2023

Figure 10-7: Global - Projected Carbon Nanotubes Market by Applications (%), 2018

Figure 10-8: Global - Projected Carbon Nanotubes Market by Applications (%), 2023

Figure 10-9: Global - Projected Demand for Carbon Nanotubes by Region (Tons), 2018 & 2023

Figure 10-10: Global - Projected Carbon Nanotubes Market Demand by Region (%), 2018

Figure 10-11: Global - Projected Carbon Nanotubes Market Demand by Region (%), 2023

Figure 10-12: Global - Projected Market for Carbon Nanotubes by Region (US\$ Million), 2018 & 2023

Figure 10-13: Global - Projected Carbon Nanotube Market by Region (%), 2018



Figure 10-14: Global - Projected Carbon Nanotube Market by Region (%), 2023

Figure 12-1: Average Price of Multi-Walled Carbon Nanotubes (US\$/Gram)

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