

Carbon Nanotubes (CNTs) Market by Type (SWCNTS & MWCNTS), Application (Electronics & Semiconductors, Chemical & Polymers, Batteries & Capacitors, Energy, Medical, Composites, & Aerospace & Defense) & Geography - Global Trends & Forecasts To 2018

<https://marketpublishers.com/r/CA298858FA2EN.html>

Date: December 2013

Pages: 205

Price: US\$ 5,650.00 (Single User License)

ID: CA298858FA2EN

Abstracts

Carbon nanotubes are minuscule allotropes of carbon having sizes to the scale of nanometers. The physical, electrical, and thermal properties make these a special material for number of applications. CNTs have very high tensile strength, excellent electrical conductivity, and the ability to bear high working temperatures. However, notwithstanding some challenges like high cost of production and integration issues, the CNTS application markets have made great breakthroughs.

CNTs enabled nanotechnology to become one of the most sought-after technologies and have made a huge impact on a wide range of applications such as electronics, medicine, aerospace, defense, automotives, energy, construction, etc. With some of the big producers stepping up their production capacities, the prices of CNTs are bound to come down and this will induce a spiraling effect on the application areas; thereby pushing up the demand for CNTs. With extensive research regarding CNTs being carried out by almost all the leading companies in the above mentioned application areas, the challenges of integration of CNTs will eventually loosen out and in a nutshell, it would be said that CNTs are the hottest nanomaterial in the time to come.

The global market for CNTs has grown during the past few years, driven by superior properties and adaptability of CNTs in major end-user industry applications. The CNTs market is expected to register a healthy growth on account of growth in the key end-

user industries. The Asia-Pacific market is a major consumer of CNTs with highest usage in electronics & semiconductors and advanced materials industries. In 2012, the production and revenue generation of CNTs was witnessed to be high in the Asia-Pacific region, followed by the North America region.

This study basically aims to estimate the global market of CNTs for 2013 and to forecast the expected demand of the same in 2018. This market research study provides a detailed qualitative and quantitative analysis of the global CNTs market. It provides a comprehensive review of major market drivers, restraints, opportunities, winning imperatives, challenges, and key issues in the market. The market is further segmented and forecasted for major regions of North America, Europe, Asia-Pacific, and Rest of the World (ROW). The major countries with market volumes and revenues are covered for each region.

For this report, various secondary sources such as encyclopedia, directories, chemical & material magazines, technical handbooks, company annual reports, industry association publications, articles, trade websites, and databases have been referred to identify and collect information useful for this extensive commercial study of the CNTs market. The primary sources—experts from related industries and suppliers—have been interviewed to obtain and verify critical information as well as to assess the future prospects and market estimations of CNTs.

The report gives a competitive scenario between the major players in the CNTs market have been discussed in detail. We have also profiled leading players of this industry with their recent developments and other strategic initiatives in the industry. This gives a holistic view about the long term plans of the key market players in CNTs industry. Furthermore, the report also profiles these companies in order to provide elaborative information such as company overview, financials, products and services, developments, and SWOT analysis of these companies. These include major players in the global CNTs market: Arkema S.A. (France), CNano Technology Ltd. (U.S.), Hyperion Catalysis International Inc. (U.S.), Nanocyl S.A. (Belgium), Showa Denko K.K. (Japan), and many other market players.

Scope of the report: This research report categorizes the global market for CNTs on the basis of type, application, and geography; forecasting volumes & revenues and analyzing trends in each of the submarkets.

On the basis of types: The CNTs market is segmented on the basis of major CNTs types including Single-walled and Multi-walled CNTs. Each type is further described in

detail in the report with a forecast of its volume and revenue.

On the basis of End-User Industry: The CNTs market is segmented on the basis of end-user industry such as electronics & semiconductors, chemical & polymers, batteries & capacitors, energy, medical, composites, and aerospace & defense. Each industry is further described in detail in the report with the forecast of its volume and revenue.

On the basis of geography: North America, Western Europe, Asia-Pacific, ROW, and the key countries in these regions.

Contents

1 INTRODUCTION

- 1.1 KEY TAKE-AWAYS
- 1.2 REPORT DESCRIPTION
- 1.3 MARKETS COVERED
- 1.4 STAKEHOLDERS
- 1.5 RESEARCH METHODOLOGY
 - 1.5.1 MARKET SIZE
 - 1.5.2 KEY DATA POINTS TAKEN FROM SECONDARY SOURCES
 - 1.5.3 KEY DATA POINTS TAKEN FROM PRIMARY SOURCES
 - 1.5.4 ASSUMPTIONS MADE FOR THIS REPORT
 - 1.5.5 KEY QUESTIONS ANSWERED

2 EXECUTIVE SUMMARY

3 PREMIUM INSIGHTS

- 3.1 CNTS: MARKET SEGMENTATION
- 3.2 CNTS: MARKET DYNAMICS
- 3.3 CNTS: MARKET GLOBAL OUTLOOK
- 3.4 ASIA-PACIFIC: THE BEST CARBON NANOTUBE MARKET TO INVEST
- 3.5 CNTS MARKET, BY TYPE & GEOGRAPHY
- 3.6 CNTS MARKET, BY APPLICATION

4 MARKET OVERVIEW

- 4.1 INTRODUCTION
- 4.2 VALUE CHAIN ANALYSIS
- 4.3 MARKET DYNAMICS
 - 4.3.1 DRIVERS
 - 4.3.1.1 Superior Properties
 - 4.3.1.2 High Demand From Current Applications
 - 4.3.1.3 Technology Advancements
 - 4.3.2 RESTRAINTS
 - 4.3.2.1 High Price & Processing Difficulties
 - 4.3.2.2 Purification Required
 - 4.3.2.3 Environmental Concerns & Health Risks

4.3.3 OPPORTUNITIES

4.3.3.1 Good Opportunities in Emerging Applications

4.3.3.2 Increasing Application Areas as Prices Decrease

4.3.3.3 Emerging Economies

4.4 BURNING ISSUES

4.4.1 QUALITY ISSUES

4.4.2 HIGH CAPITAL COSTS

4.4.3 PATENTS & IPR BLOCKING

4.5 WINNING IMPERATIVES

4.5.1 EXPANSION OF NEW PRODUCTION CAPACITIES

4.5.2 COLLABORATIONS TO DEVELOP NEW APPLICATIONS

4.6 PORTER'S FIVE FORCES ANALYSIS

4.6.1 COMPETITIVE RIVALRY AMONG EXISTING PLAYERS

4.6.2 THREAT OF NEW ENTRANTS

4.6.3 THREAT OF SUBSTITUTES

4.6.4 BARGAINING POWER OF SUPPLIERS

4.6.5 BARGAINING POWER OF BUYERS

4.7 RAW MATERIAL & PRICE ANALYSIS

4.7.1 RAW MATERIAL USED FOR MANUFACTURING OF CNTS, BY CVD PROCESS

4.7.2 RAW MATERIAL USED FOR MANUFACTURING OF CNTS, BY ARC DISCHARGE PROCESS

4.7.3 RAW MATERIAL PRICE TRENDS

4.7.3.1 Graphite

4.7.3.2 Ethylene

4.7.3.3 Benzene

4.8 REGULATIONS

4.8.1 HEALTH & SAFETY ISSUES

4.8.2 ENVIRONMENTAL ISSUES

4.9 PATENT ANALYSIS

5 CARBON NANOTUBES MARKET, BY PRODUCT TYPE

5.1 INTRODUCTION

5.2 SWCNTS V/S MWCNTS

5.3 SINGLE-WALLED CARBON NANOTUBES (SWCNTS)

5.3.1 OVERVIEW

5.3.2 SWCNTS MARKET, BY GEOGRAPHY

5.3.3 NORTH AMERICA: SWCNTS MARKET

- 5.3.4 EUROPE: SWCNTS MARKET
- 5.3.5 ASIA-PACIFIC: SWCNTS MARKET
- 5.3.6 REST OF THE WORLD: SWCNTS MARKET
- 5.4 MULTI-WALLED CARBON NANOTUBES (MWCNTS)
 - 5.4.1 OVERVIEW
 - 5.4.2 MWCNTS, BY GEOGRAPHY
 - 5.4.3 NORTH AMERICA: MWCNTS MARKET
 - 5.4.4 EUROPE: MWCNTS MARKET
 - 5.4.5 ASIA-PACIFIC: MWCNTS MARKET
 - 5.4.6 REST OF THE WORLD: MWCNTS MARKET

6 CARBON NANOTUBES MARKET ANALYSIS, BY APPLICATION

- 6.1 INTRODUCTION
- 6.2 ELECTRONICS & SEMICONDUCTORS
- 6.3 CHEMICAL & POLYMERS
- 6.4 BATTERIES & CAPACITORS
- 6.5 ENERGY
- 6.6 MEDICAL APPLICATION
- 6.7 COMPOSITES
- 6.8 AEROSPACE & DEFENSE

7 CARBON NANOTUBES MARKET ANALYSIS, BY GEOGRAPHY

- 7.1 INTRODUCTION
- 7.2 NORTH AMERICA
- 7.3 EUROPE
- 7.4 ASIA-PACIFIC
- 7.5 REST OF THE WORLD

8 COMPETITIVE LANDSCAPE

- 8.1 INTRODUCTION
- 8.2 AGREEMENTS & COLLABORATIONS: THE MOST POPULAR GROWTH STRATEGY
 - 8.2.1 AGREEMENTS & COLLABORATIONS
 - 8.2.2 EXPANSIONS
 - 8.2.3 NEW PRODUCT LAUNCHES
- 8.3 MAXIMUM DEVELOPMENTS IN 2010

8.4 NANOCYL S.A.: THE MOST ACTIVE PARTICIPANT

9 COMPANY PROFILES (OVERVIEW, FINANCIALS, PRODUCTS & SERVICES, STRATEGY, AND DEVELOPMENTS)

9.1 ARKEMA S.A.

9.2 ARRY INTERNATIONAL GROUP LTD.

9.3 CARBON SOLUTIONS INC.

9.4 CNANO TECHNOLOGY LTD.

9.5 CNT COMPANY LTD.

9.6 CONTINENTAL CARBON COMPANY

9.7 HANWHA CHEMICAL CO. LTD.

9.8 HYPERION CATALYSIS INTERNATIONAL INC.

9.9 KLEAN CARBON INC.

9.10 KOREA KUMHO PETROCHEMICAL COMPANY LTD.

9.11 NANO-C INC

9.12 NANOCYL S.A.

9.13 NANOINTEGRIS INC.

9.14 NANOLAB, INC.

9.15 NANOSHEL LLC

9.16 NANOTHINX S.A.

9.17 SHOWA DENKO K.K.

9.18 SOUTHWEST NANOTECHNOLOGIES INC.

9.19 THOMAS SWAN & CO. LTD.

9.20 UNIDYM INC. (Details on overview, financials, product & services, strategy, and developments might not be captured in case of unlisted companies.)

List Of Tables

LIST OF TABLES

- TABLE 1 CNTS MARKET VALUE, BY GEOGRAPHY, 2011–2018 (\$MILLION)
- TABLE 2 CNTS: MARKET VOLUME, BY TYPE, 2011–2018 (TONS)
- TABLE 3 CNTS PROPERTIES V/S OTHER MATERIAL PROPERTIES
- TABLE 4 CNTS PRICES V/S OTHER MATERIALS PRICES
- TABLE 5 CNTS: FUTURE APPLICATIONS
- TABLE 6 GRAPHITE PRICES, 2011–2018 (\$/TON)
- TABLE 7 ETHYLENE PRICES, 2011–2018 (\$/TON)
- TABLE 8 BENZENE PRICES, 2011–2018 (\$/TON)
- TABLE 9 CNTS ENVIRONMENTAL REGULATIONS
- TABLE 10 SWCNTS V/S. MWCNTS
- TABLE 11 SWCNTS MARKET PRODUCTION VOLUME, BY REGION, 2011–2018 (TONS)
- TABLE 12 SWCNTS MARKET VALUE, BY REGION, 2011–2018 (\$MILLION)
- TABLE 13 NORTH AMERICA: SWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)
- TABLE 14 NORTH AMERICA: SWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)
- TABLE 15 EUROPE: SWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)
- TABLE 16 EUROPE: SWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)
- TABLE 17 ASIA-PACIFIC: SWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)
- TABLE 18 ASIA-PACIFIC: SWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)
- TABLE 19 REST OF THE WORLD: SWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)
- TABLE 20 REST OF THE WORLD: SWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)
- TABLE 21 MWCNTS MARKET PRODUCTION VOLUME, BY GEOGRAPHY, 2011–2018 (TONS)
- TABLE 22 MWCNTS MARKET VALUE, BY GEOGRAPHY, 2011–2018 (\$MILLION)
- TABLE 23 NORTH AMERICA: MWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)
- TABLE 24 NORTH AMERICA: MWCNTS MARKET PRODUCTION VOLUME, BY

COUNTRY, 2011–2018 (TONS)

TABLE 25 EUROPE: MWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 26 EUROPE: MWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 27 ASIA-PACIFIC: MWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 28 ASIA-PACIFIC: MWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 29 REST OF THE WORLD: MWCNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 30 REST OF THE WORLD: MWCNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 31 CNTS MARKET VALUE, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 32 CNTS MARKET CONSUMPTION VOLUME, BY APPLICATION, 2011–2018 (TONS)

TABLE 33 CNTS MARKET VALUE IN ELECTRONICS & SEMICONDUCTORS, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 34 CNTS CONSUMPTION VOLUME IN ELECTRONICS & SEMICONDUCTORS, BY APPLICATION, 2011–2018 (TONS)

TABLE 35 CNTS MARKET VALUE IN CHEMICAL & POLYMERS, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 36 CNTS CONSUMPTION VOLUME IN CHEMICAL & POLYMERS, BY APPLICATION, 2011–2018 (TONS)

TABLE 37 CNTS MARKET VALUE IN BATTERIES & CAPACITORS, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 38 CNTS CONSUMPTION VOLUME IN BATTERIES & CAPACITORS, BY APPLICATION, 2011–2018 (TONS)

TABLE 39 CNTS MARKET VALUE IN ENERGY, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 40 CNTS CONSUMPTION VOLUME, BY ENERGY APPLICATION, 2011–2018 (TONS)

TABLE 41 CNTS MARKET VALUE IN MEDICAL, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 42 CNTS CONSUMPTION VOLUME IN MEDICAL, BY APPLICATION, 2011–2018 (TONS)

TABLE 43 CNTS MARKET VALUE IN COMPOSITES APPLICATION, 2011–2018 (\$MILLION)

TABLE 44 CNTS CONSUMPTION VOLUME, BY COMPOSITE APPLICATION,

2011–2018 (TONS)

TABLE 45 CNTS MARKET VALUE IN AEROSPACE & DEFENSE, BY APPLICATION, 2011–2018 (\$MILLION)

TABLE 46 CNTS CONSUMPTION VOLUME IN AEROSPACE & DEFENSE, BY APPLICATION, 2011–2018 (TONS)

TABLE 47 CNTS MARKET VALUE, BY GEOGRAPHY, 2011–2018 (\$MILLION)

TABLE 48 NORTH AMERICA: CNTS MARKET VALUE, BY TYPE, 2011–2018 (\$MILLION)

TABLE 49 NORTH AMERICA: CNTS MARKET PRODUCTION VOLUME, BY TYPE, 2011–2018 (TONS)

TABLE 50 NORTH AMERICA: CNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 51 NORTH AMERICA: CNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 52 EUROPE: CNTS MARKET VALUE, BY TYPE, 2011–2018 (\$MILLION)

TABLE 53 EUROPE: CNTS MARKET PRODUCTION VOLUME, BY TYPE, 2011–2018 (TONS)

TABLE 54 EUROPE: CNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 55 EUROPE: CNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 56 ASIA-PACIFIC: CNTS MARKET VALUE, BY TYPE, 2011–2018 (\$MILLION)

TABLE 57 ASIA-PACIFIC: CNTS MARKET PRODUCTION VOLUME, BY TYPE, 2011–2018 (TONS)

TABLE 58 ASIA-PACIFIC: CNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 59 ASIA-PACIFIC: CNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 60 REST OF THE WORLD: CNTS MARKET VALUE, BY TYPE, 2011–2018 (\$MILLION)

TABLE 61 REST OF THE WORLD: CNTS MARKET PRODUCTION VOLUME, BY TYPE, 2011–2018 (TONS)

TABLE 62 REST OF THE WORLD: CNTS MARKET VALUE, BY COUNTRY, 2011–2018 (\$MILLION)

TABLE 63 REST OF THE WORLD: CNTS MARKET PRODUCTION VOLUME, BY COUNTRY, 2011–2018 (TONS)

TABLE 64 AGREEMENTS & COLLABORATIONS

TABLE 65 EXPANSIONS

TABLE 66 NEW PRODUCT LAUNCHES

TABLE 67 ARKEMA: PRODUCTS & THEIR DESCRIPTION

TABLE 68 ARRY: PRODUCTS & THEIR APPLICATIONS

TABLE 69 CARBON SOLUTIONS: PRODUCTS & THEIR DESCRIPTION

TABLE 70 CNT COMPANY: PRODUCTS AND THEIR DESCRIPTION

TABLE 71 CONTINENTAL CARBON COMPANY: PRODUCTS AND THEIR DESCRIPTION & APPLICATION

TABLE 72 HANWHA CHEMICAL: PRODUCTS AND THEIR DESCRIPTION & APPLICATION

TABLE 73 KLEAN CARBON: PRODUCTS AND THEIR DESCRIPTION

TABLE 74 NANO-C: PRODUCTS AND THEIR DESCRIPTION

TABLE 75 NANOINTEGRIS: PRODUCTS AND THEIR DESCRIPTION

TABLE 76 NANOLAB: PRODUCTS AND THEIR DESCRIPTION

TABLE 77 NANOSHEL: PRODUCTS AND THEIR DESCRIPTION

TABLE 78 NANOTHINX: PRODUCT AND THEIR DESCRIPTION

TABLE 79 SHOWA DENKO: PRODUCTS AND THEIR APPLICATIONS

TABLE 80 SOUTHWEST NANOTECHNOLOGIES: PRODUCTS AND THEIR APPLICATIONS

TABLE 81 THOMAS SWAN: PRODUCTS AND THEIR DESCRIPTION, APPLICATIONS

List Of Figures

LIST OF FIGURES

- FIGURE 1 CNTS: MARKET SEGMENTATION
- FIGURE 2 CNTS: MARKET DYNAMICS
- FIGURE 3 CNTS: DRIVERS VS RESTRAINT
- FIGURE 4 CNTS: PORTER'S FIVE FORCES ANALYSIS
- FIGURE 5 CNTS: MARKET OVERVIEW, BY GEOGRAPHY, 2011-2018
- FIGURE 6 CNTS: REGIONAL MARKET LIFE CYCLE
- FIGURE 7 CNTS: MARKET MATRIX, BY REGION, 2013-2018
- FIGURE 8 CNTS MARKET VALUE, BY TYPE, APPLICATION, & GEOGRAPHY, 2012 (\$MILLION)
- FIGURE 9 CNTS: REVENUE TREND, 2011-2018 (\$MILLION)
- FIGURE 10 SWCNTS: MARKET SHARE, BY GEOGRAPHY, 2012
- FIGURE 11 MWCNTS: MARKET SHARE, BY GEOGRAPHY, 2012
- FIGURE 12 CNTS: MARKET VALUE, BY APPLICATION (\$MILLION)
- FIGURE 13 CNTS MARKET: VALUE CHAIN ANALYSIS
- FIGURE 14 PATENTS FOR GLOBAL CNTS MARKET (2011-2013)
- FIGURE 15 CNTS MARKET: PORTER'S FIVE FORCES MODEL
- FIGURE 16 GRAPHITE PRICES, 2011–2018 (\$/TON)
- FIGURE 17 ETHYLENE PRICES, 2011–2018 (\$/TON)
- FIGURE 18 BENZENE PRICES, 2011–2018 (\$/TON)
- FIGURE 19 CNTS MARKET PATENT ANALYSIS, BY GEOGRAPHY, 2011–2013
- FIGURE 20 CNTS MARKET PATENT TRENDS, BY GEOGRAPHY, 2011–2013
- FIGURE 21 CNTS MARKET PATENT ANALYSIS, BY COMPANY, 2011–2013
- FIGURE 22 TYPES OF CNTS
- FIGURE 23 SWCNTS MARKET TREND, BY REGION (2013 VS 2018)
- FIGURE 24 MWCNTS MARKET VALUE, BY REGION (2012 V/S 2018)
- FIGURE 25 GLOBAL CNT MARKET, BY GROWTH STRATEGY, 2009–2013
- FIGURE 26 NUMBER OF DEVELOPMENTS IN THE GLOBAL CNT MARKET, 2009–2013
- FIGURE 27 GLOBAL CNT MARKET: GROWTH STRATEGIES, BY COMPANY, 2009–2013
- FIGURE 28 ARKEMA: SWOT ANALYSIS
- FIGURE 29 CNANO: SWOT ANALYSIS
- FIGURE 30 HANWHA CHEMICAL: SWOT ANALYSIS
- FIGURE 31 NANOCYL S.A.: SWOT ANALYSIS
- FIGURE 32 SHOWA DENKO: SWOT ANALYSIS

I would like to order

Product name: Carbon Nanotubes (CNTs) Market by Type (SWCNTS & MWCNTS), Application (Electronics & Semiconductors, Chemical & Polymers, Batteries & Capacitors, Energy, Medical, Composites, & Aerospace & Defense) & Geography - Global Trends & Forecasts To 2018

Product link: <https://marketpublishers.com/r/CA298858FA2EN.html>

Price: US\$ 5,650.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/CA298858FA2EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below
and fax the completed form to +44 20 7900 3970