

# (Theme: Exploring & Acquiring the advances in Nanotechnology)

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## **STUDY BACKGROUND**

While it appears inevitable that nanotechnology will have a broad and fundamental impact on many sectors of the U.S. economy, various technical, marketing and other hurdles need to be overcome before nanotechnology fulfills this promise. These challenges and differences of opinion regarding commercial applications are reflected in the widely diverging estimates of the U.S. and global nanotechnology markets.

Estimates of the global nanotechnology market in 2010 range from about \$15.7 billion (the figure used in this report) to \$1 trillion. By 2015, the market may be worth more than \$2.4 trillion, according to different analysts. These differences reflect not only different analytical methods and assumptions, but also different definitions of the nanotechnology market (e.g., whether to include decades-old technologies such as carbon black rubber reinforcers and photographic silver, or whether to base the market value on nanotechnology inputs alone, as opposed to the total value of products that incorporate nanotechnology).

Perhaps as a reflection of the difficulty of quantifying the market for nanotechnologies, some analysts downplay the commercial dimensions of the nanotechnology market, and focus instead on the supply side, i.e., the development of new nanoscale technologies and applications. These analysts have made valuable contributions, raising investors' awareness of and interest in nanotechnologies.

However, by itself, the work of these analysts does not provide sufficient information in order to guide corporate or individual investment decisions. Investors require additional data, such as the size of specific nanotechnology markets, prices, and competition, as well as potential regulation.

## **STUDY GOALS AND OBJECTIVES**

The goal of this report is to provide investors and others with information on the commercial potential of various nanotechnologies and to complement the growing body of technical information. Specific objectives include identifying segments of the nanotechnology market with the greatest commercial potential in the near to mid-term

(2010 through 2015), projecting future demand in these segments, and evaluating the challenges that must be overcome for each segment to realize its potential in order to estimate the probability of successful commercialization.

## **INTENDED AUDIENCE**

The report is especially intended for entrepreneurs, investors, venture capitalists, and other readers with a need to know where the nanotechnology market is headed in the next 5 years. Other readers who should find the report particularly valuable include nanotechnology marketing executives and government officials associated with the National Nanotechnology Initiative and other state-level programs that promote the development of the nanotechnology industry. The report's findings and conclusions should also be of interest to the broader nanotechnology community.

## **SCOPE OF REPORT**

The global market for nanotechnology applications will be addressed. Nanotechnology applications are defined comprehensively as the creation and utilization of materials, devices, and systems through the manipulation of matter at scales of less than 100 nanometers. The study covers nanomaterials (nanoparticles, nanotubes, nanostructured materials, and nanocomposites), nanotools (nanolithography tools and scanning probe microscopes), and nanodevices (nanosensors and nanoelectronics).

A pragmatic decision was made to exclude certain types of materials and devices from the report that technically fit the definition of nanotechnology. These exceptions include carbon black nanoparticles used to reinforce tires and other rubber products; photographic silver and dye nanoparticles; and activated carbon used for water filtration. These materials were excluded because they have been used for decades, long before the concept of nanotechnology was born, and their huge volumes (especially carbon black and activated carbon) would tend to swamp the newer nanomaterials in the analysis.

Nanoscale semiconductors are also excluded from the study, although the tools used to create them are included. Unlike carbon black and activated carbon, nanoscale semiconductors are a relatively new development. However, they have been analyzed comprehensively elsewhere, and like carbon black and activated carbon, would tend to overwhelm other nanotechnologies by their sheer volume in the out-years towards 2015.

## PRESENT MARKET

- Total worldwide sales revenues for nanotechnology were \$11,671.3 million in 2009, and are expected to increase to more than \$26000 Million in 2015, a compound annual growth rate (CAGR) of 11.1%.
- The largest nanotechnology segments in 2009 were Nanomaterials. All Nanomaterials will increase from \$9,027.2 million in 2009 to nearly \$19,621.7 million in 2015, a compound annual growth rate (CAGR) of 14.7%.
- Sales of Nanotools will experience high growth. This market segment was worth \$2,613.1 million in 2009 and will increase at a 3.3% compound annual growth rate (CAGR) to reach a value of \$6,812.5 million in 2015.
- Sales of Nanodevices will experience moderate growth. This market segment was worth \$31million in 2009 and will increase at a 45.9% compound annual growth rate (CAGR) to reach a value of \$233.7 million in 2015.

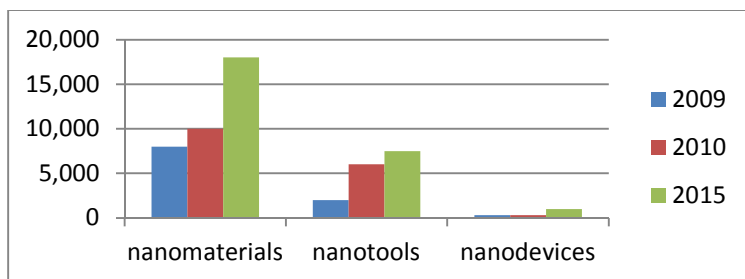


Figure 1: Global Nanotechnology market: 2009-2015  
(\$ millions)

The organizing committee is gearing up for an exciting and informative conference program including plenary lectures, symposia, workshops on a variety of topics, poster presentations and various programs for participants from all over the world. We invite you to join us at the Nanotechnology-2015, where you will be sure to have a meaningful experience with scholars from around the world. All members of the Nanotechnology-2015 organizing committee look forward to meeting you in Frankfurt, Germany

For more details please visit- <http://nanotechnology.omicsgroup.com/>

Nanotech is an international platform for presenting research about marketing, exchanging ideas about it and thus, contributes to the dissemination of knowledge in marketing for the benefit of both the academia and business. It covers a broad area of physics- Nanophysics, Material Science, Smart Materials and others. It will help to gain knowledge about the recent advancements and it is of course a good opportunity to discuss various aspects of Nanotechnology

## **WHY FRANKFURT???**

Frankfurt officially known as Frankfurt am Main, is the largest city in the German state of Hessen and the fifth-largest city in Germany, with a population of 701,350 (2013) within its administrative boundaries. The city is at the centre of the larger Frankfurt Rhine-Main Metropolitan Region which has a population of 5,500,000 and is Germany's second-largest metropolitan region. Since the enlargement of the European Union in 2013, the geographic centre of the EU is about 40 km (25 mi) east of Frankfurt.

Frankfurt is the largest financial centre in continental Europe and ranks among the world's leading financial centres. It is home to the European Central Bank, Deutsche Bundesbank, Frankfurt Stock Exchange and several large commercial banks. The European Central Bank is the central bank of the eurozone, consisting of 18 EU member states that have adopted the euro (€) as their common currency and sole legal tender.

The Deutsche Bundesbank is the central bank of Germany and as such part of the European System of Central Banks. The Frankfurt Stock Exchange is one of the world's largest stock exchanges by market capitalization and accounts for over 90 percent of the turnover in the German market. In 2010, 63 national and 152 international banks had their registered offices in Frankfurt, including the headquarters of the major German banks, notably Deutsche Bank, Commerzbank, DZ Bank and KfW, as well as 41 representative offices of international banks. Frankfurt is therefore considered a global city (alpha world city) as listed by the GaWC group's 2012 inventory.

Due to its central location within Germany and Europe, Frankfurt is a major air, rail and highway transport hub. Frankfurt Airport is one of the world's busiest international airports by passenger traffic and the main hub for Germany's flag carrier Lufthansa, the largest airline in Europe. Frankfurt Central Station is one of the largest terminal stations in Europe and the busiest junction operated by Deutsche Bahn, the German national railway company, with 342 daily trains to domestic and European destinations. Frankfurter Kreuz, the Autobahn interchange close to the airport, is the most heavily used interchange in the EU utilized by 320,000 cars daily.

## **Major Nanotechnology Associations around the Globe**

New England Nanotechnology Association (NENA)

Asian Nanoscience and Nanotechnology Association

International Association of Nanotechnology

American Society for Testing and Materials (ASTM International).

Nanoscale Science Research Centers (NSRCs)

Australian Research Council Nanotechnology Network (ARCNN)

Global Nanotechnology Network (GNN)

Materials Research Society

International Union of Materials Research societies

## **Major Nanotechnology Associations around the Europe**

German Association of Nanotechnology

Brazilian Nanotechnology National Laboratory

International Council on Nanotechnology (ICON)

Nano Science and Technology Institute (NSTI)

## **Top Universities in Europe:**

University of Oxford

University of Cambridge

Imperial College London

Queens marry university

Nanotechnology-2015 is an exciting opportunity to showcase the new technology, the new products of your company, and/or the service your industry may offer to a broad international audience. It covers a lot of topics and it will be a nice platform to showcase their recent researches on Nanotechnology , Material Science and other interesting topics.

Eminent Scientists/ Research Professors, Junior/Senior research fellows, Students, Directors of companies, Engineers, Members of different physics associations.

Nanotechnology as an industry has crept into several other major industry topics covered by BCC Research. The innovation and emerging nanotechnologies have significantly reshaped the manufacturing, biotechnology, environmental and pharmaceutical markets.

Nanoporous, nanotubes, nanocomposites, Nanotoxicology and nanoclays are all covered within BCC Research reports. In-depth market analysis of these technologies as well as trends, forecasts and profiles of major players prove how valuable the growth of nanotechnology has become. Efficiency of nanotechnology has led to great discoveries in prescription drug products, photonics and has had a great environmental impact in the water treatment and decreasing the amount of pollutants that deplete the environment.