

Global Nanoelectromechanical Systems (NEMS) Market (2012 - 2022) by Applications (STM/AFM, Medical, Gas/Flow Sensor, RF), Products (Switches, Cantilevers), Components (Nanotubes, Nanowires, Nanofilms), Materials (Graphene, ZnO, SiC, GaN, SiO2)"

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Abstracts

NEMS, i.e. “Nanoelectromechanical Systems”, are used for the devices integrating mechanical and electrical functionality on the nanoscale. NEMS is the advanced level of miniaturization after MEMS devices. NEMS includes various devices like sensors, actuators, gears, accelerometers, cantilevers, tweezers, and many other nano devices. Different properties of the NEMS-based devices, which makes them unique are low mass, high electrical strength, high mechanical resonance frequencies, potentially large quantum mechanical effects such as zero point motion and a high surface-to-volume ratio useful for surface-based sensing mechanisms.

This report deals with all the driving factors, restraints, and opportunities with respect to the NEMS market, which are helpful in identifying trends and key success factors for the industry. The report also profiles companies active in the field of NEMS market. This report provides the competitive landscape of the players, which covers key growth strategies, followed by all the major players. The players are related to research organizations that play a major role in this industry, nano-component suppliers, nano-material suppliers, and Original Equipment Manufacturers (OEMs). The report formulates the entire value chain of the NEMS market; right from data source to the applications of the NEMS.

Apart from the market segmentation, the report also includes critical market data

showing the price trend analysis for NEMS, and market dynamics such as; drivers, restraints, and opportunities.

The global NEMS market is expected to reach \$108.88 million by 2022 at an estimated CAGR of 29.69%. North America leads the NEMS market.

Scope of the Report

The report categorizes the Global Nanoelectromechanical Systems (NEMS) Market, based on the current and future applications and it also covers the forecasted revenue from 2012 to 2022 depending upon the commercialization of the various applications. The report also shows the cost analysis of the NEMS systems, products, components, and the nano-materials. It also shows the various activities that are being conducted by different institutes, universities, and non-profit organizations. The report describes the applications mapping in the NEMS market with respect to the growth potential and adoption by the users. The report also describes the adoption of NEMS-based systems and applications in various regions.

On the basis of applications

The application segmentation for the NEMS market is broadly divided into three groups; tools & equipments, sensing & control, and solid state electronics. Each of the applications is further divided into level two applications such as microscopy, automotive, medical, sensors, and memories. Analysis of all the applications includes estimation of the year of commercialization, penetration rate in the existing market, and value/volume data. The technology-based segmentation includes only qualitative data. The quantitative part has been avoided as technology for NEMS is evolving and hence forecasting for the evolving technology will induce errors.

On the basis of products

The market is also segmented according to various types of products such as nano-tweezers, nano-cantilevers, nano-accelerometers, and nano-fluidic modules. These products are manufactured from various components; all the products are categorized on the basis of different applications in which they are used.

On the basis of components

In the report, the market is also segmented on the basis of various nano-components. Different nano-components are used for the production of different nano-products.

Various nano-materials are used for manufacturing nano-components. The nano-components covered in the report are nanotubes, nanowires, nanofilms, and nanobelts.

On the basis of materials

On the whole, 17 raw materials that are largely used for NEMS production are covered in the materials chapter. All the 17 materials are distributed amongst three basic categories; metals, semiconductors, and insulators. Thus, it can be said that the entire market breakdown of the supply side of the NEMS market is done for report.

On the basis of geography

The NEMS market is also mapped against geography. The market by geography is further segmented into North America, Europe, APAC, and ROW, which gives a detailed insight about the potential regions for the NEMS market. The report also describes the concentrated regional pockets that are critical for revenue generation.

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