

The Global Market for Nanoelectronics: Materials and Devices

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Abstracts

The electronics industry will witness further significant change and growth in the next decade driven by:

Scaling

Growth of mobile wireless devices

Huge growth in the Internet of Things (IoT)

Development of flexible and stretchable form functions

Data, logic and applications moving to the Cloud

Ubiquitous electronics.

To meet these market demands, power and functionality needs to improve hugely, while being cost effective, driving demand for nanomaterials that will allow for novel architectures, new types of energy harvesting and sensor integration. As well as allowing for greater power, improved performance and bandwidth, decreased size and cost, improved flexibility and better thermal management, the exploitation of nanomaterials allows for new device designs, new package architectures, new network architectures and new manufacturing processes. This will lead to greater device integration and density, and reduced time to market.

Semiconducting inorganic nanowires (NWs), carbon nanotubes, nanofibers, nanofibers,

quantum dots, graphene and other 2D materials have been extensively explored in recent years as potential building blocks for nanoscale electronics, optoelectronics and photonics components, coatings and devices.

The report covers nanotechnology and nanomaterials related to the following markets and applications:

Post-Silicon Materials and Devices

Flexible, Stretchable and Printable Electronics

Conductive inks

Wearable health monitoring

Electronic textiles

HMI automotive displays

Displays

Transistors

Integrated Circuits

Other components

Memory Devices

Conductive and waterproof electronics coatings

Photonics

Lighting

Solar cells.

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