

Importance of Nanotechnology for the IoT Devices

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The revolution in the electronics industry has introduced many compact and efficient devices into everyone's daily life. When any field of technology enters its maturation and revolution stage, it moves on towards interacting with other branches of technology for its further betterment. One such perfect cocktail came out when the Internet of Things (IoT) was influenced by Nanotechnology. It is the integration of nanotechnology and the internet of things (IoT) where various components manufactured under nanotech, such as nano-sensors, are interconnected through communication networks over the Internet.

How Nanotechnology Can Impact IoTs

Nanotechnology provides efficient and compact solutions in the field of biomedical, military application, consumer and industrial goods. Fusion of nano tech and IoT can develop physical networks, accommodating nanomaterials that facilitate the exchange of data through various nodes at nano level. Together this integration is also known as the Internet of Nano-things, which has potential to initiate the next revolution of the electronics industry.

Nanotechnology has the potential to solve many problems of the 21st century. For example, nano-sensors can help save the environment and boost medical research and the automotive industry. These sensors are developed under nano technology with the potential of sensing micro modification in pressure, temperature, or chemical composition. They can acquire more precise data and hence provide measurements of the subjected entity more effectively. Moreover, nanomachines integrate nano components to perform tasks better efficiently. They also fundamentally function in similar ways to IoT devices with one major difference in being able to connect the nano components, which drastically makes devices compact while decreasing energy consumption. Here are some more features that the Internet of nano-things will provide:

Affordability:

In the current market of IoTs, cost is a major barrier. Nanotechnology will provide resolution to these problems as it can fabricate much smaller components that require fewer materials.

Biocomputers:

That time is not far away when IoT nano sensors, implanted in the human body, will provide accurate and real time data to doctors for helping them diagnose deadly diseases significantly earlier.

These nano devices will have applications beyond the medical field, as they can effectively capture EEG (Electroencephalogram) signals from the brain to control IoT devices only with your mind. Many companies are currently working on developing a prototype for headphones which can be controlled by mind.

Sustainability:

Nanotech in the IoT could also advance the way of producing electricity. Smart fabrics powered by nanotechnology could even generate energy through movement or even body heat. Companies might create film-thin solar panels or power devices through the electromagnetic radiation from other electronics.

Data Accuracy:

Nano sensors made of nanomaterial can detect changes that conventional sensors can't do with accuracy. For example, graphene can sense changes through the atoms it absorbs, providing a much more precise measurement than conventional techniques.

Nanotechnology holds a lot of potential to spark a new revolution in the IoT industry. Even though many of these applications and features are under development, that time is near when nanotechnology will become an integral part of our world just as smartphones and IoTs.

Read the [original article](#) on TechRound.