

NANOTECHNOLOGY: REALITY AND PROSPECTS

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Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications. Encompassing nanoscale science, engineering, and technology, nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale.

A nanometer is one-billionth of a meter. Unusual physical, chemical, and biological properties can emerge in materials at the nanoscale. These properties may differ in important ways from the properties of bulk materials and single atoms or molecules.

There are different types of nanomaterials, named for their individual shapes and dimensions. Think of these simply as particles, tubes, and films that have one or more nanosized dimension.

Nanofilm is a development of nanotechnology-enables products using nanofilms in products. These products are used in precision optics, glass in transport vehicles, architectural glass, electronic display/technical glass, glass and ceramic tableware, homecare and other markets. These coatings add new properties to the surface of substrates, including strength, water resistance, contaminant resistance; scratch and mar resistance, energy control, electrical conductivity.

The future of nanotechnology is completely uncharted territory. It is almost impossible to predict everything that nanoscience will bring to the world considering that this is such a young science.

There is the possibility that the future of nanotechnology is very bright, that this will be the one science of the future that no other science can live without. There is also a chance that this is the science that will make the world highly uncomfortable with the potential power to transform the world.

Nanotechnology will be ubiquitous in coming years, just as polymers, silicon chips and the Internet have become part of everyday life. It will facilitate enormous breakthroughs in some cases – medicine, energy, electronics.

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