Review of: "Changing some properties such as conductivity in nanotransistors and electromagnetic properties in nanowires"

Topay Tugrol¹

¹ British Institute at Ankara

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Note: A nanostructure is any structure with one or more dimensions and it is measured in the range of nanometer scale.

Nanostructures are materials or structures that they have at least one dimension between 1 and 100 nm. The importance of nanoscale is in changing the properties and characteristics of materials in these dimensions. Properties such as electrical conductivity, electromagnetic properties, etc. Starting to change the properties of the material by shrinking it depends above all on the type of material and the desired property. For example, by reducing the dimensions of a material, in general, some electromagnetic properties of nanomolecular materials such as the conductivity of nanoparticles in materials are improved. This increase in strength does not occur only in the range of a few nanometers, it is much greater than the mass of the material on a large scale. On the other hand, the change of some characteristics such as conductivity in nanotransistors and electromagnetic properties in nanowires may occur only in dimensions of a few nanometers. Self-assembly (nanoparticles) into nanostructures is a spontaneous process by which nanomolecules/nanophases are transformed into organized functions. Two important types of nanostructures are conductive nanoparticles (finely structured particles, often semiconducting materials) and CNTs (tiny tubes, usually of pure carbon). Self-assembled nanoparticles made of semiconductors change nanostructures depending on their scale size. CNT carbon nanotubes can conduct large amounts of electrical current, much more than graphene nanowires and nanoribbons. In general, the self-assembly in nanostructures enhances the nanoelectromagnetic interaction (nanoparticles) in conductive nanomaterials and becomes a semiconductor.

Result:

In the description of nanostructures, a distinction must be made between the number of dimensions in the volume of an object that is in the nanoscale. The surfaces of nanostructures have nanoscale dimensions. Nanoparticles are spherical in the nanoscale. Three-dimensional, that is, the magnification of each spatial
dimension is between 0.1 and 100 nm. The terms self-assembly in nanostructures are often used synonymously, although this function can also reach the micrometer range.

References


11. ^Alex Milizovich. (2023). Review of: "(nanotransistor) and the unique properties of graphene such as electron mobility and high thermal conductivity, resistance to fracture". Qeios. doi:10.32388/laqiv3.


