

Self-assembly (Nanoparticles) Nano structure in Endohedral Nanostructures is a Spontaneous Process by Which Nanoelectrons/Nanophases are Transformed into Organized Functions.

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- **Abstract:**

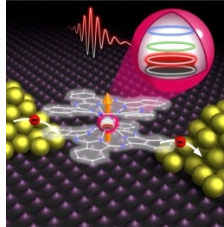
- Nanostructure is defined as any structure with one or more dimensions and measured in the nanometer scale range.

- **Keywords:** Nanostructures ,Nanoelectronic , Electrospinning , Nano Particle

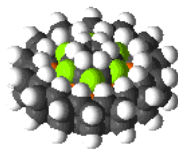
Introduction •

Nanostructures refer to materials or structures that have at least one dimension between 1 and 100 nanometers. The importance of the nanoscale is in changing the properties and characteristics of materials at these dimensions. Properties such as electrical conductivity, electromagnetic properties, etc. The beginning of changing the properties of materials by reducing them depends more than anything on the type of material and the desired property. For example, as the dimensions of a material decrease, generally some of the electromagnetic properties of nanomolecular materials such as the conductivity of nano particles in the material

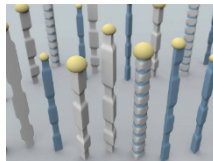
improve. This increase in strength does not only occur in the range of a few nanometers, and the strength of a material of several tens or even hundreds of nanometers may be much greater than that of a large-scale bulk material. On the other hand, changes in some properties such as conductivity in nanotransistors and electromagnetic properties in nanowires may occur in dimensions of only a few nanometers.



Self-assembly (nanoparticles) in nanostructures is a spontaneous process by which nanomolecules/nanophases are transformed into organized functional structures. Two important types of nanostructures are conductive nanoparticles (finely structured particles, often of semiconducting materials) and carbon nanotubes (CNTs) (fine tubes, usually of pure carbon).



Self-assembled nanoparticles made of semiconductors change the nanostructures depending on their size scale. Carbon nanotubes (CNTs) can conduct large amounts of electrical current, much more than nanowires and graphene nanoribbons. In general, self-assembly in nanostructures enhances the nanoelectromagnetic (nanoparticle) interaction in conductive nanomaterials and semiconductors.



In describing nanostructures, it is necessary to distinguish between the number of dimensions in the volume of an object that is on the nanoscale. Surfaces of nanostructures have one dimension on the nanoscale. Spherical nanoparticles on the nanoscale have three dimensions, i.e. the size of each spatial dimension is between 0.1 and 100 nm. The terms self-assembly in nanostructures are often used synonymously, although this performance can also reach the micrometer range.

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