

Review of: "Investigating the performance of (C₆ · and C_V · endohistal bucky tubes and nano-fullers) and diamond in the manufacture of nano-electronic devices"

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Fullerenes are nanometer-sized molecules that, in their simplest form, form 60 carbon atoms of a graphite layer with a three-dimensional structure. Unlike diamond and graphite, whose molecules are continuous, fullerenes are closed molecules: they are like C₆₀ and... (60) fullerenes, which are also called buckyball and buckytube, include nanotubes, nanofibers, fullerene has a structure similar to graphite, but instead of completely hexagonal sections, carbon atoms are placed in the vertices of the 5th or 7th polygons.

There are two types of connections in the structure of diamond nanographites:

1- Covalent bond, the connection between the carbon atoms of each honeycomb layer.

2- It is a connection that connects the layers of the honeycomb.

Nano graphite, like honeycomb plates, has high strength due to having a strong covalent bond; On the contrary, this structure is much less strong than the honeycomb panels. The structure of diamond nanographite has a lattice structure. In nano-graphite, atomic bonds are established only on the surface, while in the diamond structure, these bonds fill the space in a three-dimensional network. In graphite, the carbon atom forms a covalent bond with three other carbon atoms, while in diamond, the carbon atom forms a covalent bond with four other carbon atoms.

Applications of nano diamond in nano electronics industries

in nanoelectronic industries; Nano chip, increasing the speed of nano transistors, both types of diamonds, i.e. n and p type stones, are used for nanoelectronic applications in microelectronics. He produced blue diamonds and by adding phosphorus to colorless diamonds, he also produced n-type diamonds. Today, many semiconductors such as silicon are used in a wide range of nanoelectronic devices. However, due to the range of thermal changes and its extremely high speed, nano diamond is only compared to gold nanoparticles, which holds the title of the second best nano semiconductor in the world.

The name Fulleren is derived from the geodetic domes to which the molecules of this nanoparticle resemble. Using laser evaporation of graphite and deformation of carbon C_n clusters in carbon nanotubes, the most common of which are C₆₀ and C₇₀.

The C₇₀ carbon molecule can withstand a wide range of new chemical reactions. The third allotropic form is carbon (after graphite and diamond). Fullerenes made up of less than 300 carbon atoms (radial follicles) are commonly known as “bacilli.” The molecule is fullerenes, which are made up of 70 carbon atoms. C₇₀ Fullerenes Closed hollow cages are made of interconnected carbon atoms in pentagonal and hexagonal rings with a cage-like melted ring structure that resembles a rugby ball. Each carbon atom on the cage surface connects to three carbon neighbors, and its sp² bonds combine with a carbon atom at the vertices of each polygon and a bond along each polygonal edge. Molecular Fluorine can underlie a wide range of Roman novel chemical reactions. Easily accept and donate electrons. Nano tubes of carbon C₇₀ as a strong oxidizing insulation layers for low power energy organic act. The name of the Bucky Ball C₇₀ is taken from its size, because its diameter is in nanometer dimensions (approximately 50,000 times smaller than the diameter of a human head), while its length can reach several millimeters. The long length of several microns and their small diameter of a few nanometers results in a very large length to diameter ratio. Therefore, they can be considered almost as florins later. As such, the C₇₀'s wing wings have special electronic, mechanical, and molecular properties. The characteristic of carbon nanotubes is due to the almost one-to-one effect of their structure on their molecular and electronic properties. Nanotubes exist in two main categories: single-walled nanotubes and multi-walled MWNTs nanotubes. Single-walled nanotubes can be thought of as high-graphite sheets wrapped in a cylindrical shape. The length-to-diameter ratio of nanotubes is about 1000 and they can be considered as almost one-dimensional structures. Nanotubes, like graphite, are fully formed.

Conclusion :

Nano graphite and graphene nano strips are electrically conductive due to cloud scattering. Active nano diamond particles with such features, especially electronic ones, can be the foundation of completely new types of powerful nano electronic devices.

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