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

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The most popular semiconductor material for making Nano FET field effect nano transistors is nanowires (NWs). Nanowires (NWs) alone cannot control the movement of electrons, so impurities must be added in a process called doping, usually Add boron, phosphorus, selenium or germanium. When the nanowire is doped, the electron movement can also be converted, allowing the electron flow to be turned on or off (stopping the electron flow), using the interlayer voltage of the nanowires (NWs). turns off.

These Nano FET field effect transistors consist of several main parts: gate, channel source, drain and body. The body is usually assembled and made of semiconductor materials such as nanowires NWs to facilitate the flow of electrons. Electrons flow through the channel into the drain, which is controlled by the gate. By applying a voltage, we can block the channel and allow the flow of electrons into nanofield effect transistors (FETs) by nanowires (NWs). Turn on and off. Nanostructures are materials or structures that 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.

References

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