Review of: "Oligophenylene vanillin (silicon/germanium) structured nanowires and cylinders for possible applications in electronic energy"

Afshin Rashid[1]

1 Islamic Azad University, Tehran Science & Research Branch

Potential competing interests: No potential competing interests to declare.

> ***Note: Oligophenylene vanillin (silicon/germanium) structure nano wires and cylinders are used for possible applications in energy, electronics, optics and other fields.***

Oligophenylene vanillin nanowires (Si Silicon / Germanium Gi) , narrow structures whose diameter is only a few billionths of a meter but thousands or millions of times longer. They exist in various forms—made of metals, semiconductors, insulators, and organic compounds—and are used for applications in the fields of electronics, energy conversion, optics, and chemical sensing. Because of their extreme thinness, Oligophenylene vanillin nanowires with a (Si Silicon / Germanium Gi) structure are essentially one dimensional. Nanowires are quasi-one-dimensional materials, "their two dimensions are on the nanometer scale." This one-dimensionality confers distinct electrical and optical properties.For one thing, this means that the electrons and photons in these nanowires experience "confined quantum effects." However, unlike other materials that produce such quantum effects, such as quantum dots, the length of Oligophenylene vanillin nanowiresallows them to communicate with other macroscopic devices and the outside world.

The structure of an Oligophenylene vanillin nanowire is so simple that there is no room for defects and electrons pass without hindrance. This is a big problem with conventional crystalline semiconductors, such as those made from silicon wafers: these defects are always present in those structures, and those defects interfere with the passage of electrons. In addition, materials that normally do not mix easily can be assembled into

nanowires. For example, layers of silicon and germanium, two widely used semiconductors, "are very difficult to grow side by side in thin films." "But in Oligophenylene vanillin nanowires , they can be grown without any problems." In addition, the equipment required for this type of vapor deposition is widely used in the semiconductor industry and can easily be adapted for the production of nanowires.

> ***Conclusion :***
>
> ***Oligophenylene vanillin (silicon/germanium) structure nanowires and cylinders are used for possible applications in energy, electronics, optics and other fields.***

[1][2]

References

1. ^*Afshin Rashid. (2023). Review of: "Nano wire immersion method (structure and function)".Qeios. doi:10.32388/0od0gl.*
2. ^*Afshin Rashid. (2023). Review of: "The concept of (Nano assembler) in smart electronic nano structures".Qeios. doi:10.32388/atyte1.*