Review of: "Oligophenylene vanillin nanowires with a (Si Silicon / Germanium Gi) structure are essentially one dimensional"

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Potential competing interests: No potential competing interests to declare.

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 nanowires allows them to communicate with other macroscopic devices and the outside world.

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