Carbon Nanotubes as Applied to Future Microelectronic Applications

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Carbon nanotubes (CNT) are carbon atoms that are arranged to form microscopic cylindrical structures that can have the conducting properties of both metals and semi-conductors depending on alignment. Their tensile strength and heat tolerance also surpasses that of silicon, at a fraction of the size, which warrants the possibility of CNT being the future material used in transistors. This paper discusses different CNT structures and their properties as applicable to the creation of future electronic components. The carbon nanotube properties are also compared to current silicon transistor characteristics and their limitations to illustrate the necessity of further research and development of CNT in the microelectronics field.