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New Concepts in as-Grown Single-Walled Carbon Nanotube Applications to Nanoelectronics

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要旨

As a new class of novel materials, carbon nanotubes (CNTs) have been the subject of intense research activities since their discovery nearly two decades ago. Among their various novel properties, the electrical transport has been of particular interest due to its application in nanoelectronics. However, due to the lack of required purity and technical challenges in proper alignment, the development toward CNT-based minuscule electronics has been rather slow. Recent studies in our laboratory have shown that with controlled growth, as grown-single walled (SW) CNTs can be successfully used for a wide range of electronics devices. In this talk, I shall present the results on growth, assembly, and study of electron transport in SWCNT interconnects, diodes and transistors.

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