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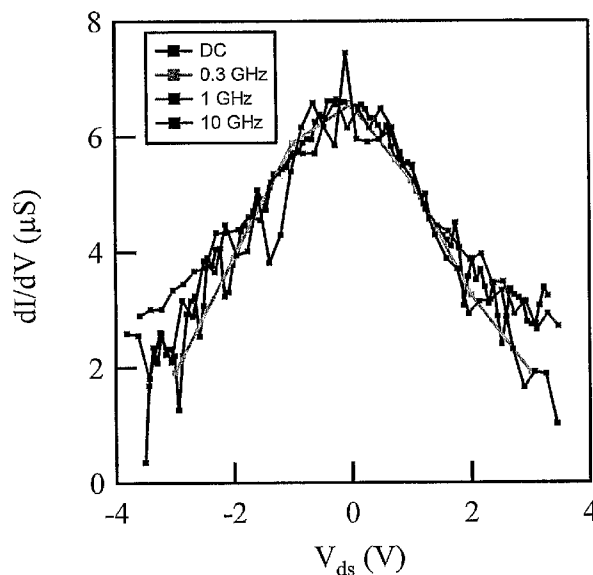
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(54) Title: NANOTUBES AS MICROWAVE FREQUENCY INTERCONNECTS



(57) Abstract: The present invention provides nanotube interconnects capable of carrying current at high frequencies for use as high-speed interconnects in high frequency circuits. It is shown that the dynamical or AC conductance of single-walled nanotubes equal their DC conductance up to at least 10 GHz, demonstrating that the current carrying capacity of nanotube interconnects can be extended into the high frequency (microwave) regime without degradation. Thus, nanotube interconnects can be used as high-speed interconnects in high frequency circuits, e.g., RF and microwave circuits, and high frequency nano-scale circuits. In a preferred embodiment, the nanotube interconnects comprise metallic single-walled nanotubes (SWNTs), although other types of nanotubes may also be used, e.g., multi-walled carbon nanotubes (MWNTs), ropes of all metallic nanotubes, and ropes comprising mixtures of semiconducting and metallic nanotubes. Applications for the nanotube interconnects include both digital and analog electronic circuitry.

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