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Electrical Detection of ssDNA by Single Wall Carbon Nanotubes
CHIH-KUAN TUNG, Princeton University, YUEXING ZHANG, Argonne National Labs, PHUAN ONG, Princeton University, EDWARD COX, Princeton University, ROBERT AUSTIN — We report conductance measurements of single-walled carbon nanotubes (SWNT) in the presense of single-stranded DNA (ssDNA). The characteristic I-V curves of our metallic SWNT samples changed from linear (ohmic) to non-ohmic in the presence of ssDNA dissolved in DI water, and remained so when the sample was dried. The results imply possible applications of SWNT in the electronic detection of ssDNA, detection of hybridization of ssDNA, and sequencing of DNA.

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