

481f Fluorescence Detection of Ions in the Presence of DNA-Single Walled Carbon Nanotubes

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Single walled carbon nanotubes (SWNT) have the potential to serve as optical and implantable near infrared sensors in biological applications. Individually dispersed semiconducting SWNT fluoresce without photobleaching in the near infrared region, where the absorption of tissue and blood is minimal. Furthermore, SWNT is very sensitive to adsorption and analyte interactions at the surface. We explored the possibility of using DNA suspended SWNT as biosensors. Previously, we have shown that DNA can adsorb to the nanotube surface without losing functionality and the ability to hybridize with its complement. DNA is also known to change conformation in the presence of specific cations. We investigated the optical modulation of DNA-SWNT fluorescence due to DNA conformational changes in the presence of these ions.