THE EFFECT OF RHODAMINE 101 CONCENTRATION ON ITS INTERACTIONS WITH SINGLE WALL CARBON NANOTUBES.

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Single walled carbon nanotubes (SWNT) have excellent mechanical, electrical, and thermal properties but their manipulation is hampered since they do not readily dissolve in most organic solvents. In particular, the interaction of nanotubes and organics is not universally understood. Using UV-Vis absorption spectroscopy data we will show that, in chloroform, the laser dye Rhodamine 101 (R101) forms ground-state complexes with CoMoCAT SWNT. We have proposed that R101 can be used as a probe to measure the strength of interaction between nanotube and solvent through its solvent-specific ability to form these complexes.

In this talk we will show the results of a stoichiometry investigation with the goals of confirming our model for formation of these complexes, and quantifying the extent of complexation.