PCIII-1 RAMAN SPECTROSCOPY OF SELF-ASSEMBLED THIN FILMS AND FUNCTIONALIZED SINGLE WALLED CARBON MANOTUBES

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It has been a long-standing disputable question as to how the most widely studied dithiols and disulfides bind to gold surfaces when their self-assembled thin film monolayers are formed. To better understand the formation of the S-S linkage on Au, we studied the adsorption of dimethyl disulfide on Au using various spectroscopic and microscopic tools. In this report the adsorption characteristics of disulfides were investigated on gold by experimental and theoretical techniques.

A covalent functionalization of the sidewall via diazonium ions is assembled to manipulate single-walled carbon nanotubes (SWNTs) according to their electronic structure. The solubility of functionalized SWNTs appeared to be different depending on solvents and the terminal functional groups of attached aromatic moieties. This result should be helpful to separate the functionalized metallic SWNTs from the unreacted semiconductors. Preliminary results will be discussed at the meeting.