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Optical properties of composite functionalized carbon nanotubes and Au nanorods thin films[1] DEOKJIN YU, Oklahoma State University, JAMES WICKSTED, Oklahoma State Universtiy — Optoelectronic properties of hybrid layer-by-layer (LbL) structures of Au nanorods and functionalized single-walled carbon nanotubes (SWNT) might be utilized in future solar cells and optoelectronic sensor devices. The SWNTs were functionalized with poly (sodium 4-styrenesulfonate) (PSS) by in situ polymerization. The Au nanorods were prepared with wet-chemical methods. Sequential LbL deposition of poly (diallyldimethyl ammonium chloride) (PDDA) and PSS-SWNTs on glass substrate were carried out to obtain the polyelectrolyte multilayer films. Au nanorods were then polymer coated on the multilayer films. Optical properties of these composite films were studied using Raman scattering and UV-VIS-IR absorption spectroscopy.

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