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Inverted spectra of SWCNT films JOHN LEHMAN, KATHERINE HURST, LARA ROBERSON, NIST, KATHRYN NIELD, JOHN HAMLIN, MSL-New Zealand — Diffuse Reflectance for purified single wall carbon nanotube (SWCNT) films and its relation to absorptance in the wavelength range 0.6 μm to 2 μm are inverted when compared to absorptivity data in the literature. This surprising behavior has been corroborated by diffuse reflectance measurements and shows that the reflectance is a substantial part of the unique optical behavior. Typically, the absorptance is fairly assumed to be complementary to the transmittance, while the reflectivity is insignificant. Only in certain instances (see for example, Barnes, et. al[1], Wang, et. al[2]), is the small reflectance explicitly accounted for. In the present work, we present diffuse reflectance and specular absorptance at normal incidence of SWCNT films.
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