

Optical spectroscopy signatures of single walled carbon nanotubes dispersed in degassed water without additives

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We study the intrinsic optical spectroscopy (UV-vis-NIR absorption, Raman and photoluminescence) signatures of single wall carbon nanotubes (SWNT) dispersed in degassed water without additives, so called "eau de nanotubes" (EdN). They are found to be very close to those of SWNT dispersed in aqueous suspensions stabilized with surfactants. Absorption peaks appear to be even slightly better resolved for EdN, suggesting sharper excitonic resonances, which is also supported by the Raman data. On the other hand, the photoluminescence signal is significantly weaker. These signatures suggest that SWNT are dispersed as individuals in degassed water, in a similar way single layer graphene was recently shown to be readily dispersable in degassed water [1-3].

References

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