

# Characterization of Single-Walled Carbon Nanotubes functionalized with 11-Bromoundecyltrichlorosilane

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Research on carbon nanotubes in the last years has shown their high potential for a wide range of applications. To meet different demands, the customization of nanotube properties via chemical functionalization is a widely used approach. Especially click chemistry offers the possibility to attach a large variety of molecules in a simple and efficient way [1]. Here, we present the investigation of single-walled carbon nanotubes functionalized with 11-Bromoundecyltrichlorosilane. The silanization is the base reaction of a three-step click chemistry approach, consisting of silanization, azidization, and final molecule clicking. To obtain insight into the base reaction, the silanized carbon nanotubes were investigated with Raman spectroscopy. A first characterization and determination of the (n,m)-branches is presented. The influence of the silane attachment on the defect amount of the nanotubes is studied via the D/G Raman intensity ratio at different laser wavelengths. Additionally, reference spectra of 11-Bromoundecyltrichlorosilane are shown and compared with the Raman spectra of silanized nanotubes.

[1] G.Clavé, S.Campidelli, Chem. Sci., 2, 1887 (2011)