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Aminoacid Functionalization and Raman Characterization of DWNT MORENO MENEGHETTI, GABRIELE MARCOLONGO, GIORGIO RUARO, VINCENZO AMENDOLA, JESSICA ALFONSI, MARINA GOBBO, University of Padova, Dep. Chemical Sciences — Carbon nanotubes are difficult to manipulate because of their aggregation and low reactivity. For this reason many types of functionalization have been obtained and, usually, large functionalizations are needed. However, in particular considering single wall carbon nanotubes (SWNT), a large functionalization modifies their electronic properties because it introduces a large number of defects states. To overcome this problem we have considered double wall carbon nanotubes (DWNT) which can be considered as SWNT protected by an external carbon nanotube. We have performed an oxidation and a functionalization of DWNT covalently linking charged aminoacids. From the Raman characterization of the functionalized nanotubes we find that the external nanotubes have been modified by the functionalization but not the internal ones. We think that this is an interesting approach to obtain carbon nanotubes which are easy to manipulate but with electronic properties, in this case of the internal nanotube, which are preserved.

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