

*Supplementary data*

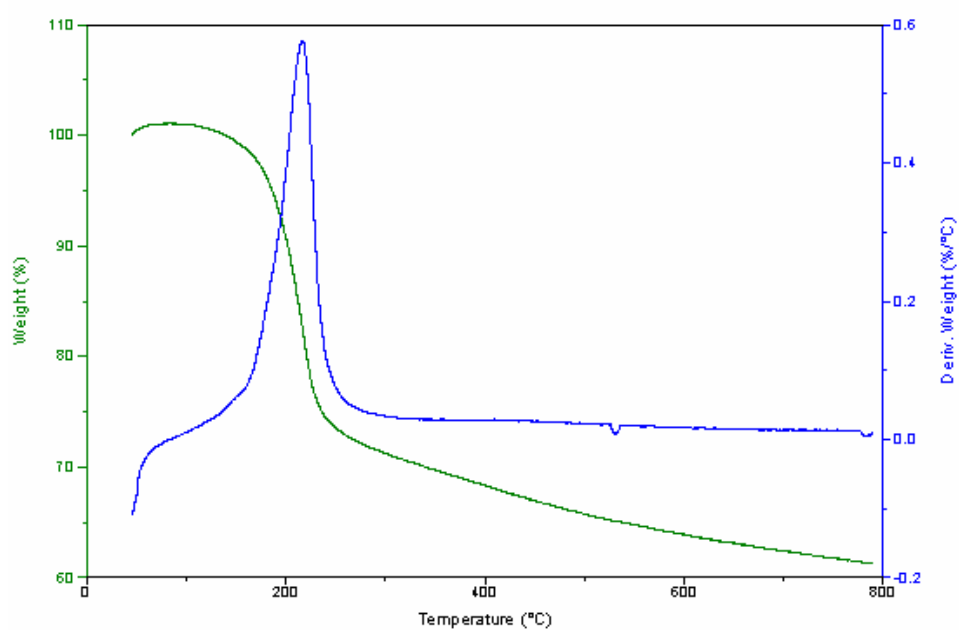
**AFM and STM Characterization of Thiol and Thiophene  
Functionalized SWNTs: Pitfalls in the use of Chemical  
Markers to Determine the Extent of Sidewall  
Functionalization in SWNTs<sup>†</sup>**

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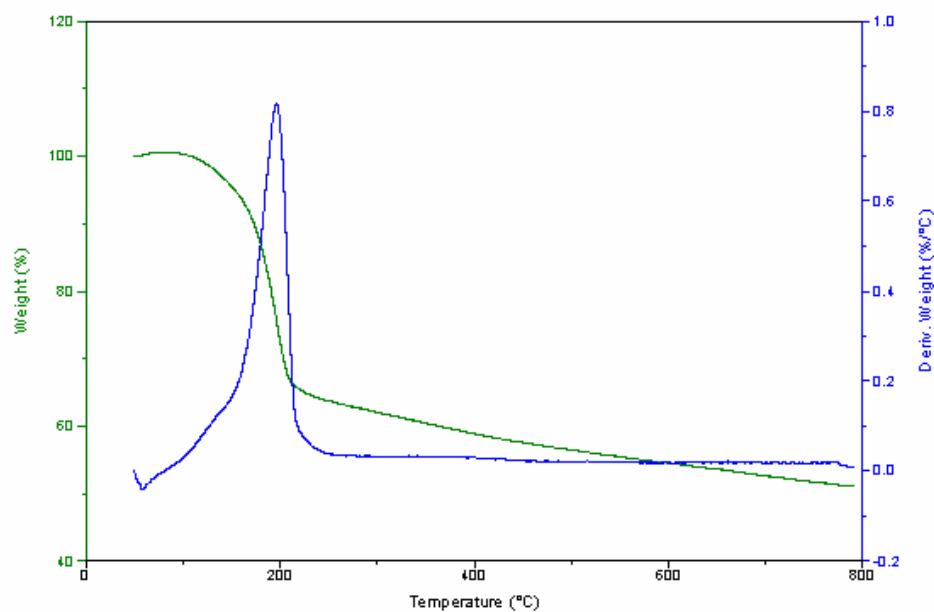
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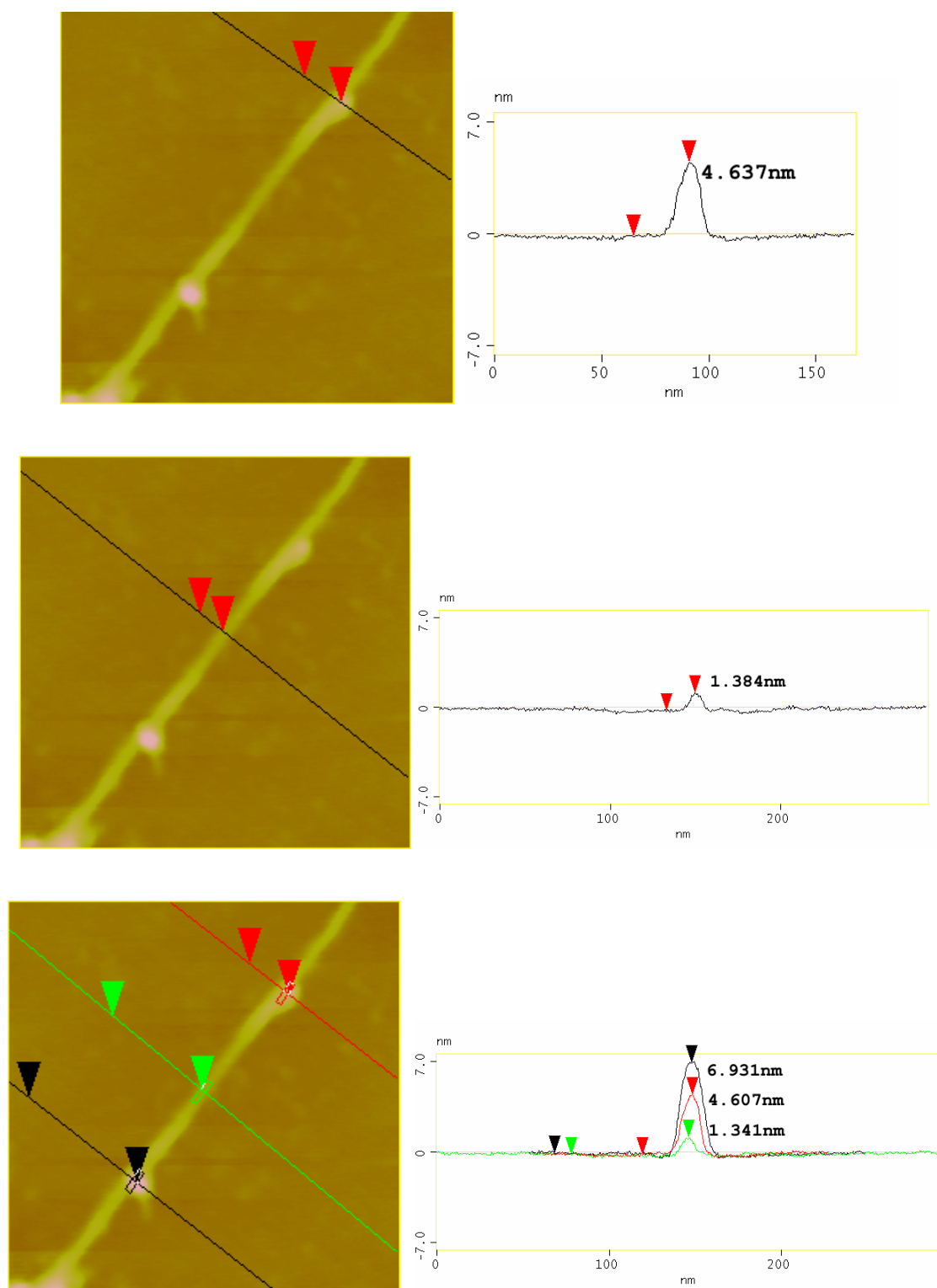
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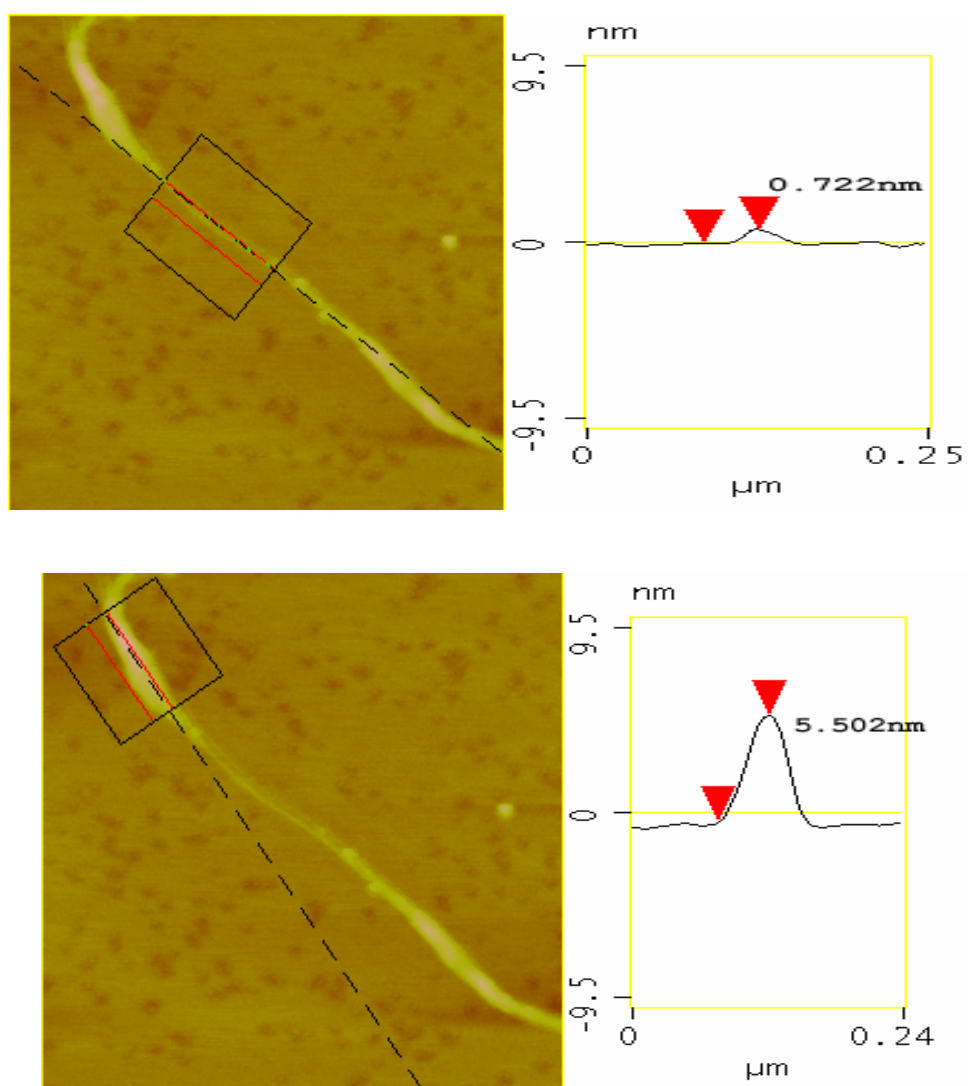
**Fig. S1.** TG/DTA of thiol-SWNTs.



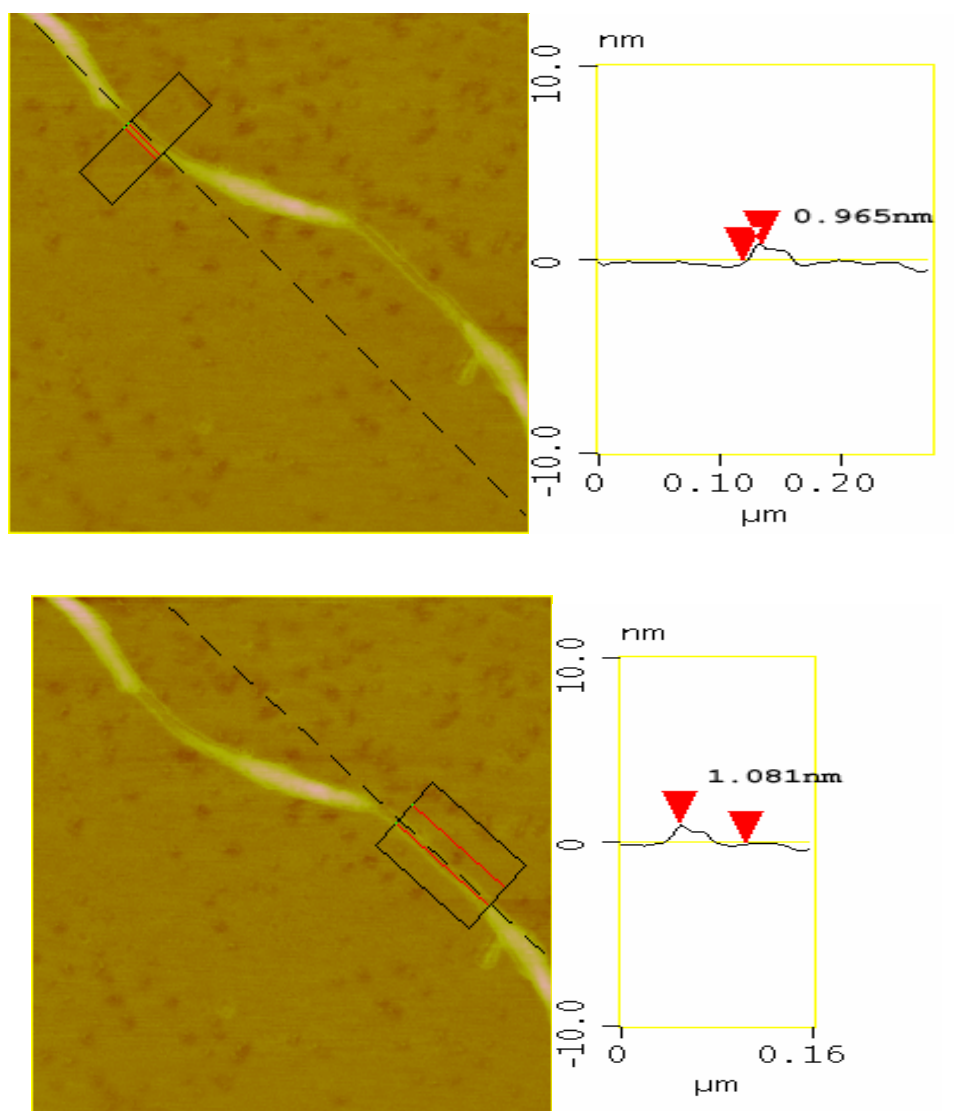
**Fig. S2.** TG/DTA of thiophene-SWNTs.



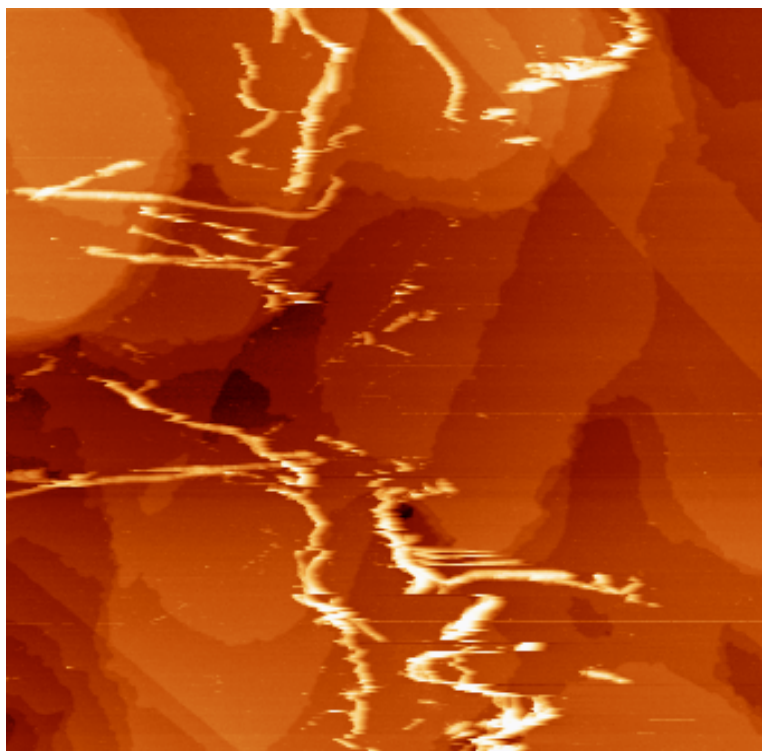
**Fig. S3.** AFM images of n-Au-thiol-SWNTs.



**Fig. S4.** AFM images of n-Au-thiol-SWNTs.



**Fig. S5.** AFM images of n-Au-thiol-SWNTs.



**Fig. S6.** STM image of thiophene-SWNTs on a bare gold surface illustrating the perturbation by the STM that sometimes occurs while scanning samples prepared in this manner. Such effects are eliminated when a hexanethiol monolayer is first self-assembled on the gold surface. [6000 x 6000 Å,  $I_t = 4.73$  pA,  $V_{bias} = -800$  mV].