

## Electronic Supplementary Information

### Helical polysilane wrapping onto carbon nanotube:

#### Preparation, characterization and infrared emissivity property study

Muyang Zhang, Yuming Zhou\*, Man He, Tao Zhang, Xiaohai Bu  
School of Chemistry and Chemical Engineering, Southeast University, Jiangsu  
Optoelectronic Functional Materials and Engineering Laboratory, Nanjing 211189,  
People's Republic of China Correspondence to: Y. Zhou (E-mail:  
ymzhou@seu.edu.cn)

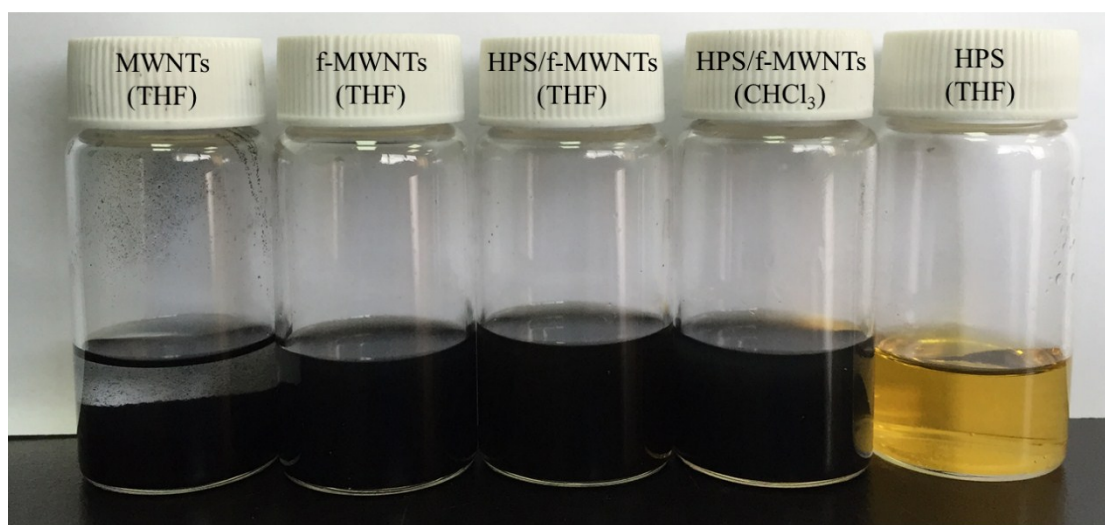


Fig. S1. Photographs of THF solutions of, raw MWNTs (in THF), f-MWNTs (in THF), and HPS/f-MWNTs complexes (in THF and CHCl<sub>3</sub>), pristine HPS (in THF). Concentration: 1g/L.

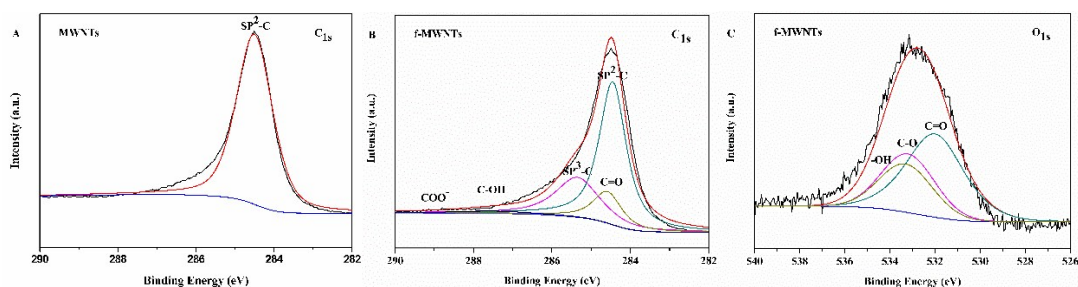


Fig. S2. High resolution XPS spectra of (A) raw MWNTs C1s spectra, (B) f-MWNTs C1s spectra, and (C) f-MWCNTs O1s spectra.

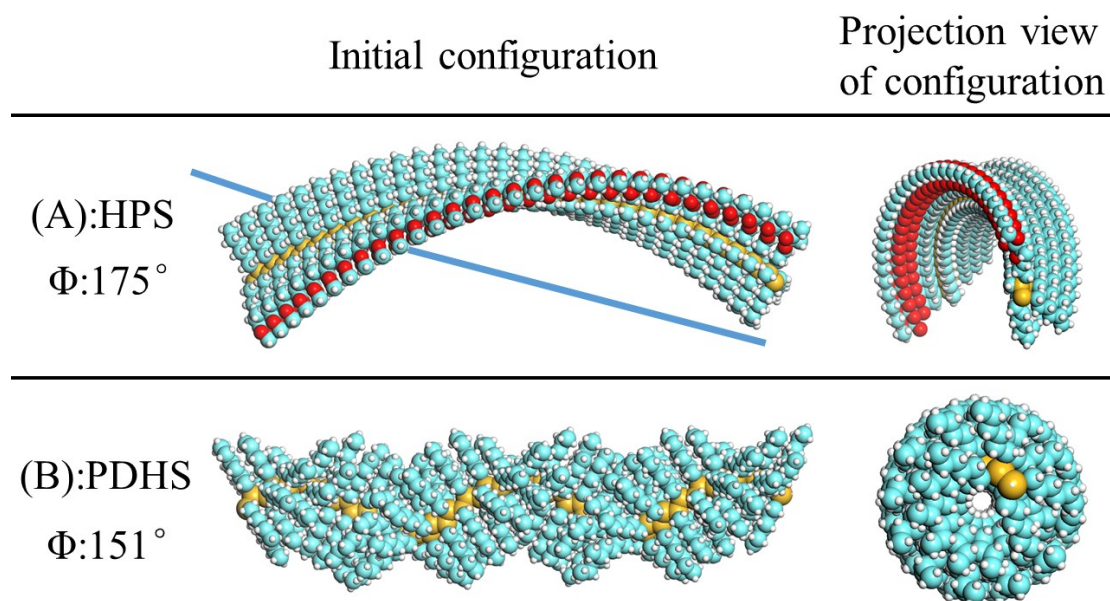


Fig. S3. Initial conformations of HPS oligomers (60-Si repeat units). (A) HPS with wrapping ability to MWNTs. (B) PDHS without wrapping ability to MWNTs. The optimized structures were categorized by wrapping ability onto MWNT. In HPS with dihedral angle  $\Phi$ :  $175^\circ$  and PDHS with  $\Phi$ :  $151^\circ$ , blue line indicates the groove made by alkyl side chain.