Supporting Information

Non-covalent Pyrene-PEG Coatings of Carbon Nanotubes Achieve *In Vitro* Biocompatibility

Mehdi Meran[a], Pelin Deniz Akkus[a], Ozge Kurkcuoglu[a], Elif Baysak[b], Gurkan Hizal[b], Ebru Haciosmanoglu[c], Ayhan Unlu[d], Nilgun Karatepe[e], F. Seniha Güner[a]

[a]Department of Chemical Engineering, Istanbul Technical University, Istanbul, Turkey

[b]Department of Chemistry, Istanbul Technical University, Istanbul, Turkey

[c]Department of Physiology, Faculty of Medicine, Istanbul Bilim University, Istanbul, Turkey

[d]Department of Biophysics, Faculty of Medicine, Trakya University, Edirne, Turkey

[e]Energy Institute, Renewable Energy Division, Istanbul Technical University, Istanbul, Turkey

Corresponding Authors

Prof. Dr. F. Seniha Guner

Tel: +90 212 285 68 36

guners@itu.edu.tr

Asst. Prof. Dr. Ozge Kurkcuoglu

Tel: +90 212 285 35 23

olevitas@itu.edu.tr

Table of contents

Molecular Dynamics Results

- **Figure S1.** Dynamics of PEG chains on SWNTs and coating of the SWNT by four PEG$_{2000}$ chains in different conformations (from M$_4$)

- **Figure S2.** (a) π-π interactions between SWNTs (yellow) from neighboring box in simulation (a) M$_2$ and (b) M$_3$. (c) SWNTs from neighboring simulation boxes do not interact in simulation M$_6$. Water molecules are not shown for clarity.

SWNT Synthesis

- **Figure S3.** Raman spectra of SWNTs synthesized at 800 °C

Thermogravimetric analysis of SWNTs coated with Pyr-PEG$_{5000}$

- **Figure S4.** Thermogravimetric results of PEG$_{5000}$, short SWNT and short SWNT coated with Pyr-PEG$_{5000}$

Cell Viability Results

- **Figure S5.** Cell viability percentages for the fabricated short and long SWNT. Double asterisk (□□) denotes a statistically significant difference between fabricated short and long SWNT treatment groups according to one-way ANNOVA (p ≤ 0.01).

- **Figure S6.** Cell viability percentages for the fabricated short and long SWNT. The asterisk (□) denotes a statistically significant difference between long SWNT and short SWNT coated with Pyr-PEG$_{2000}$ treatment groups according to Student's t-test (p ≤ 0.05).

- **Figure S7.** Cell viability percentages for the fabricated short and long SWNT. The asterisk (□) denotes a statistically significant difference between long SWNT and

short SWNT coated with Pyr-PEG$_{5000}$ treatment groups according to Student's t-test (p $\leq$ 0.05).
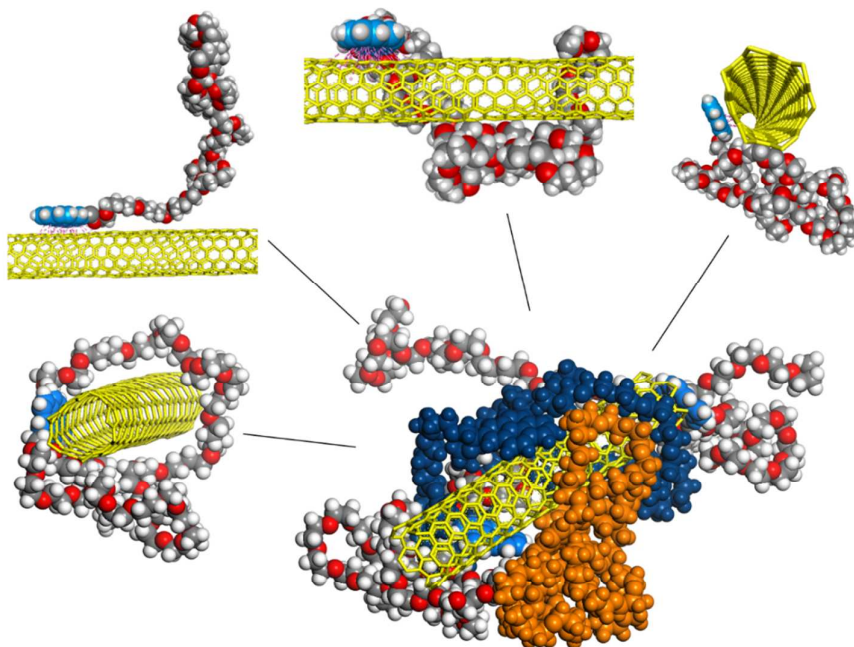
Molecular Dynamics Results

Figure S1. Dynamics of PEG chains on SWNTs and coating of the SWNT by four PEG$_{2000}$
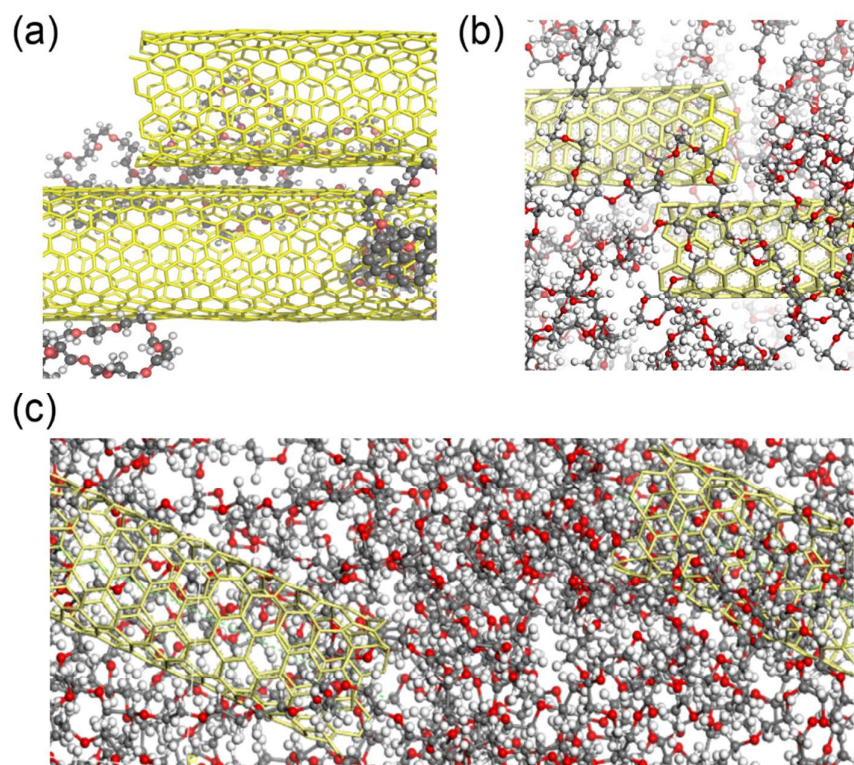
chains in different conformations (from M$_4$)

Figure S2. (a) π-π interactions between SWNTs (yellow) from neighboring box in simulation (a) M_2 and (b) M_3. (c) SWNTs from neighboring simulation boxes do not interact in simulation M_6. Water molecules are not shown for clarity.
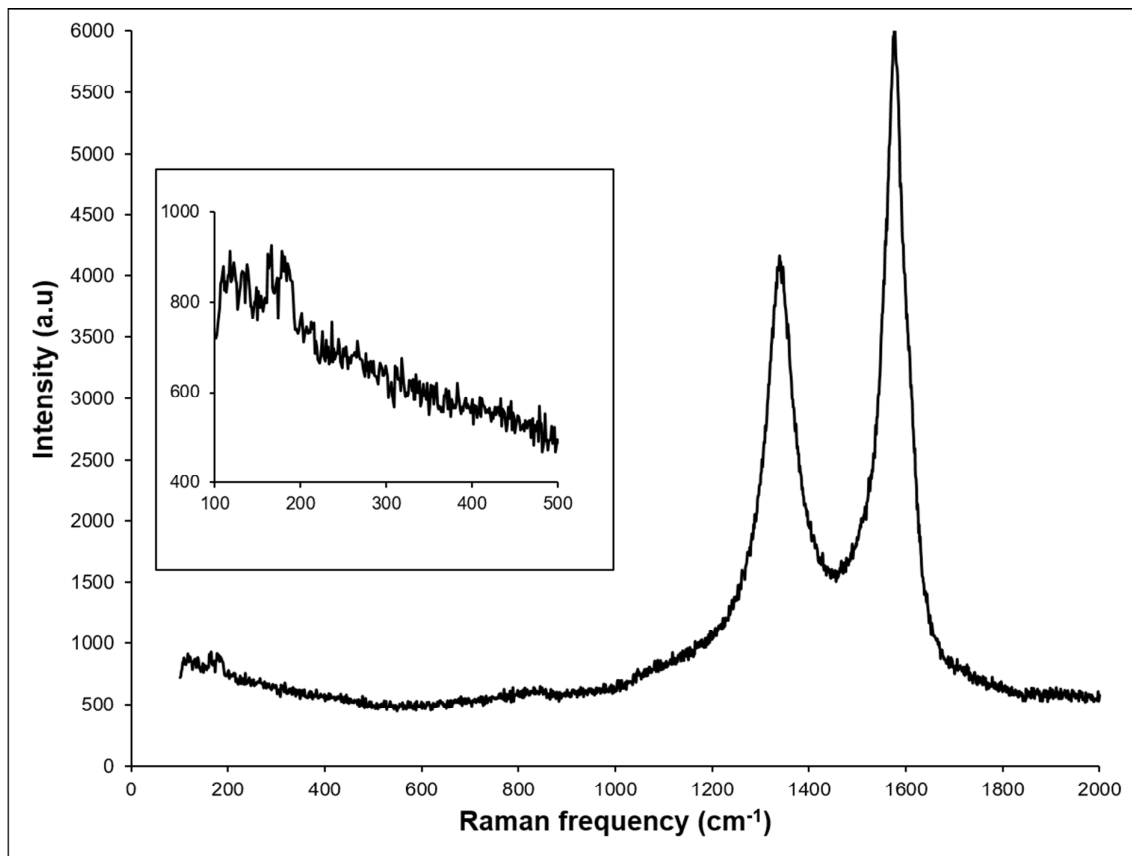
SWNT Synthesis

Figure S3. Raman spectra of SWNTs synthesized at 800 °C
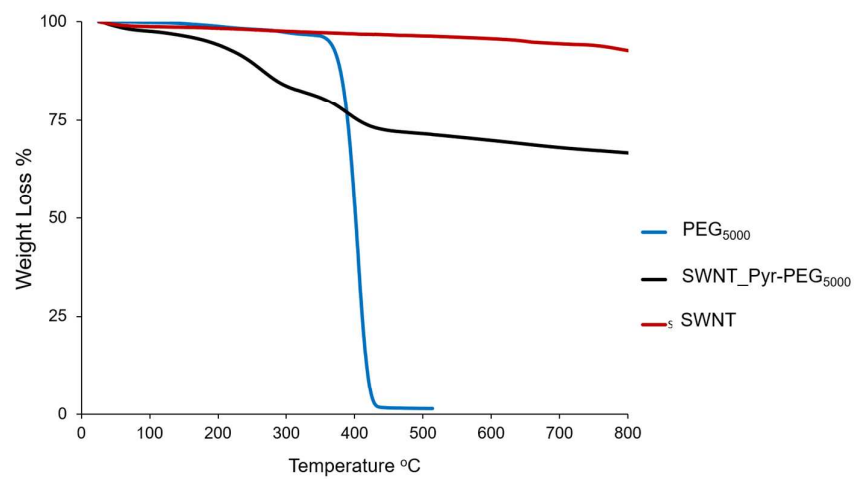
Thermogravimetric analysis of SWNTs coated with Pyr-PEG$_{5000}$

Figure S4. Thermogravimetric results of PEG$_{5000}$, short SWNT and short SWNT coated with

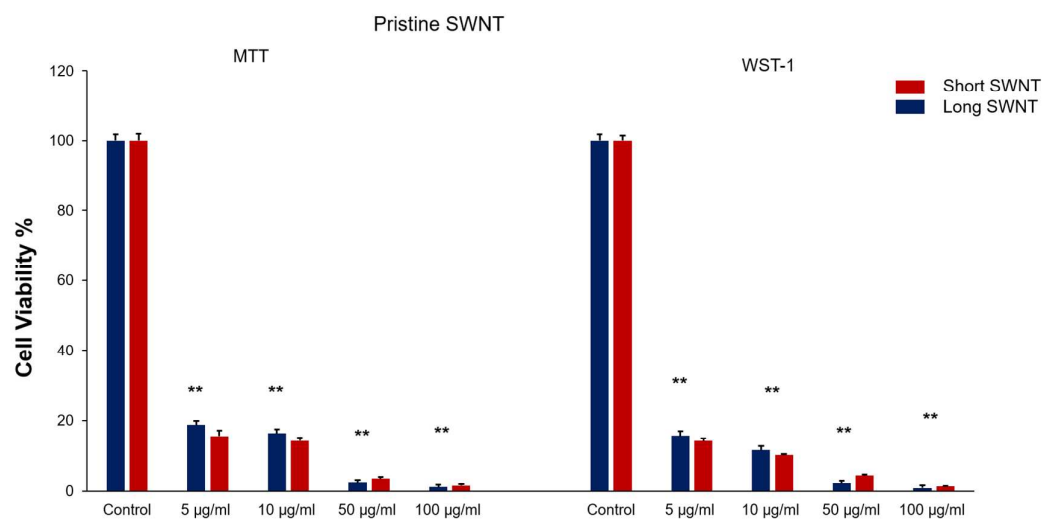Pyr-PEG$_{5000}$

Cell Viability Results

Figure S5. Cell viability percentages for the fabricated short and long SWNT. Double asterisk (□□) denotes a statistically significant difference between fabricated short and long SWNT treatment groups according to one-way ANNOVA ($p \leq 0.01$).
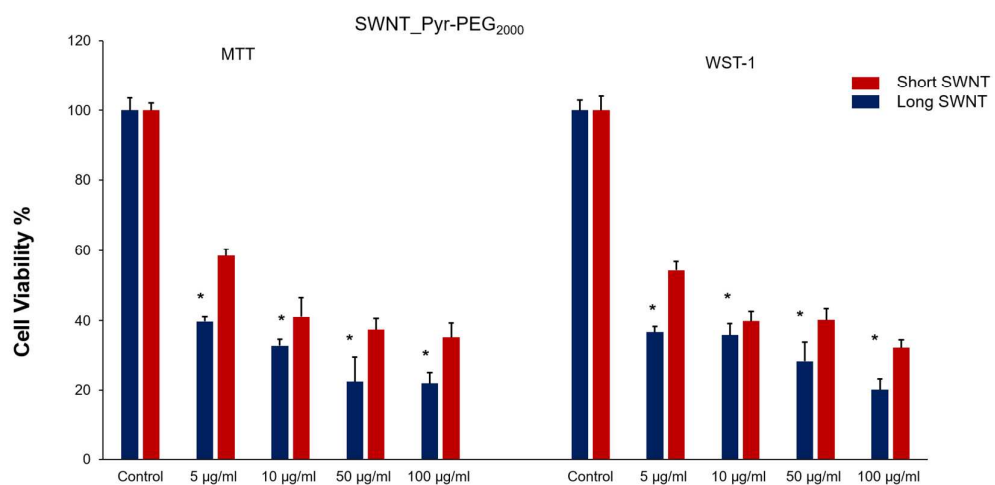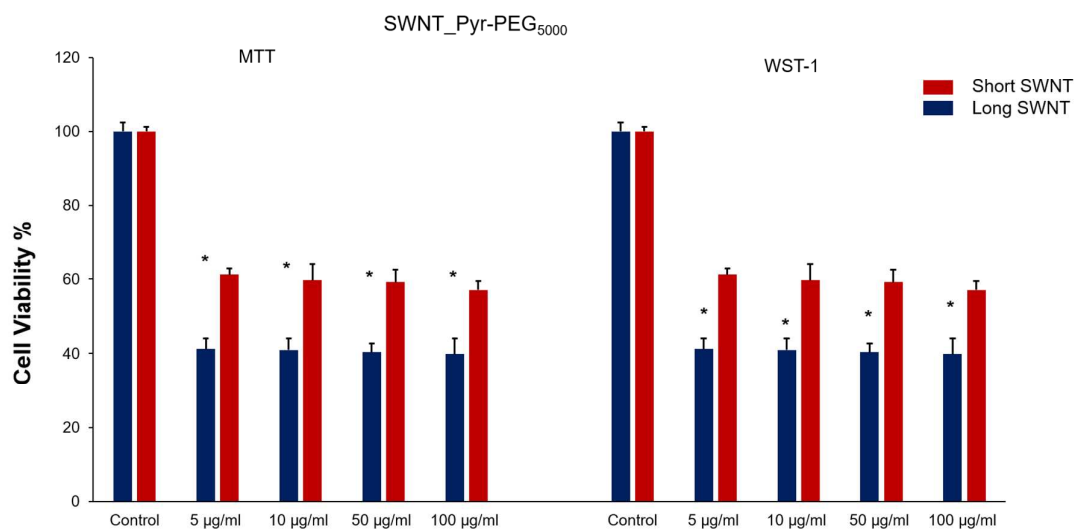
Figure S6. Cell viability percentages for the fabricated short and long SWNT. The asterisk (□) denotes a statistically significant difference between long SWNT and short SWNT coated with Pyr-PEG$_{2000}$ treatment groups according to Student's t-test (p ≤ 0.05).

Figure S7. Cell viability percentages for the fabricated short and long SWNT. The asterisk

($\square$) denotes a statistically significant difference between long SWNT and short SWNT coated

with Pyr-PEG$_{5000}$ treatment groups according to Student's t-test ($p \leq 0.05$).