SUPPORTING INFORMATION

Self-assembling Peptide Coatings Designed for Highly Luminescent Suspension of Single-Walled Carbon Nanotubes

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Peptide Mass Spectrometry Data

MALDI-TOF mass spectrometry was used to characterize the masses of the final peptides synthesized for this study.

Data for peptides A, B, C, and J:

$K_7(QL)_6K_7$ (Peptide A), expected mass $[M+H]^+$: 3302.3 Observed mass: 3303.5

$K_6(QL)_6K_6$ (Peptide B), expected mass $[M+H]^+$: 3045.9 Observed mass: 3046.4

$K_5(QL)_6K_5$ (Peptide C), expected mass $[M+H]^+$: 2789.6 Observed mass: 2790.3

$K_2(QF)_5K_2$ (Peptide J), expected mass $[M+H]^+$: 1949.3 Observed mass: 1949.2

Mass spectrometry data for peptides D-I have been published previously (Dong, et al., *J. Am. Chem. Soc.* **2007,** *129,* 12468-12472).

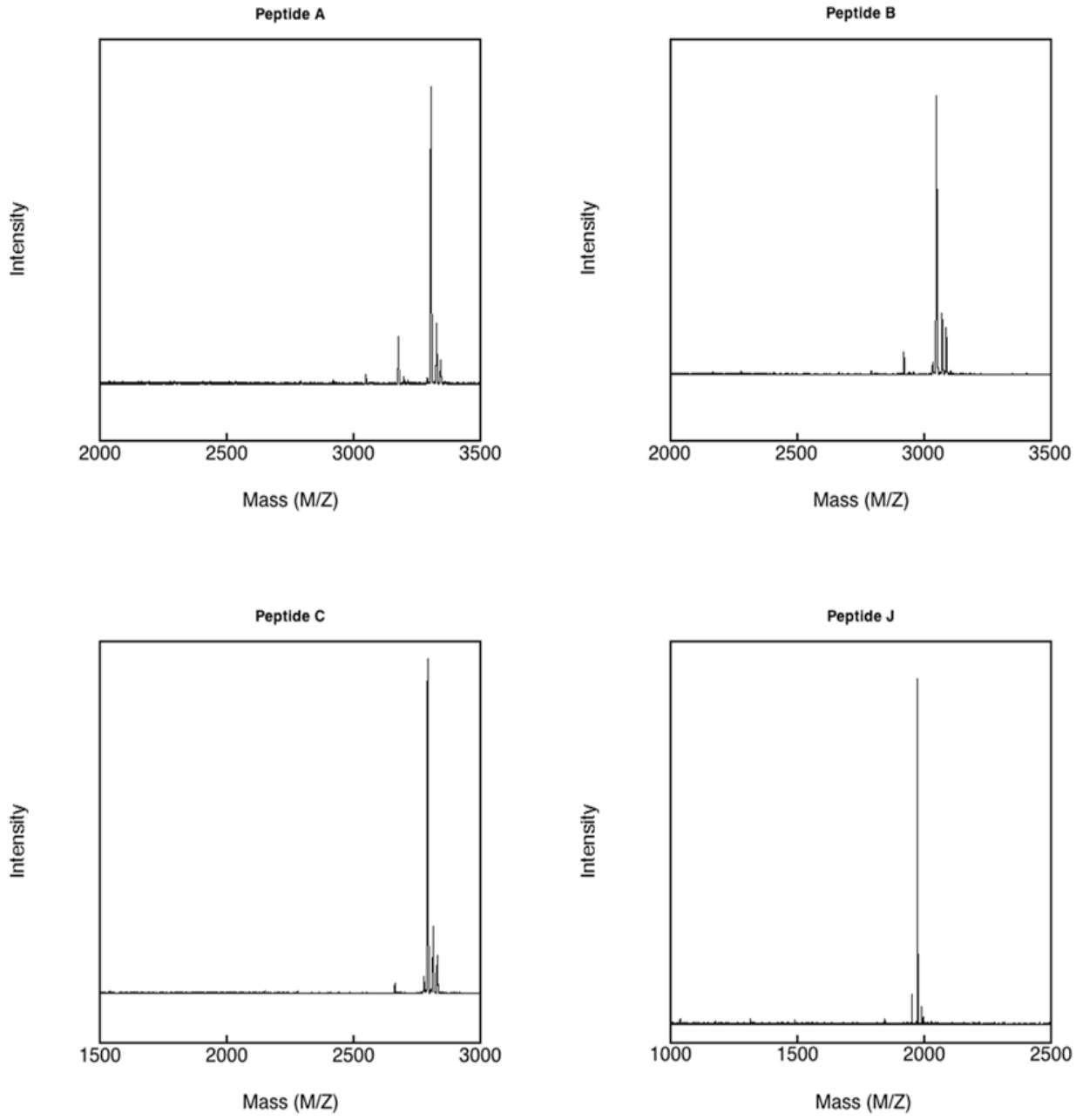

Figure S1. MALDI-TOF mass spectra of peptides A, B, C, and J.

Bulk Absorption Spectra

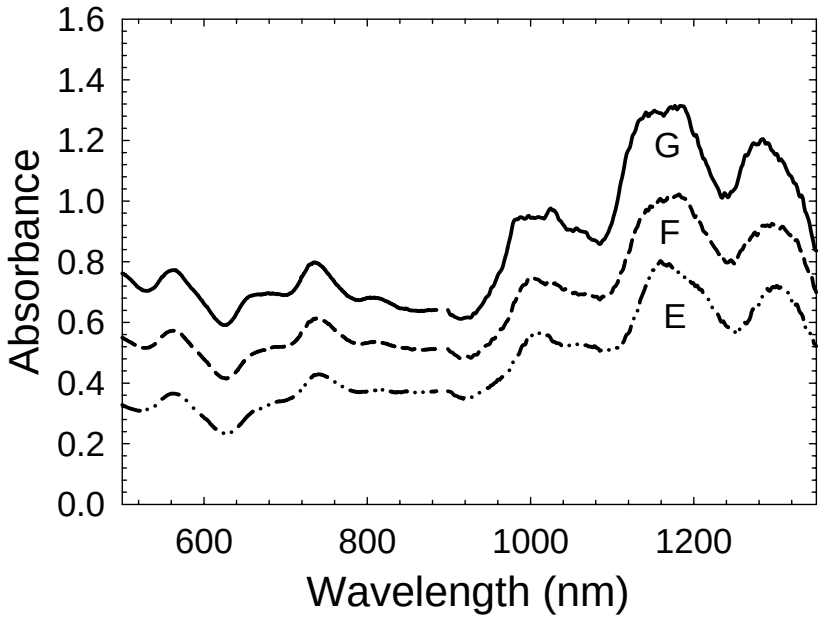

Figure S2. Absorption spectra of SWCNT suspensions in peptides E, F, and G.

Emission Spectra of Individual SWCNTs in Peptide Coatings

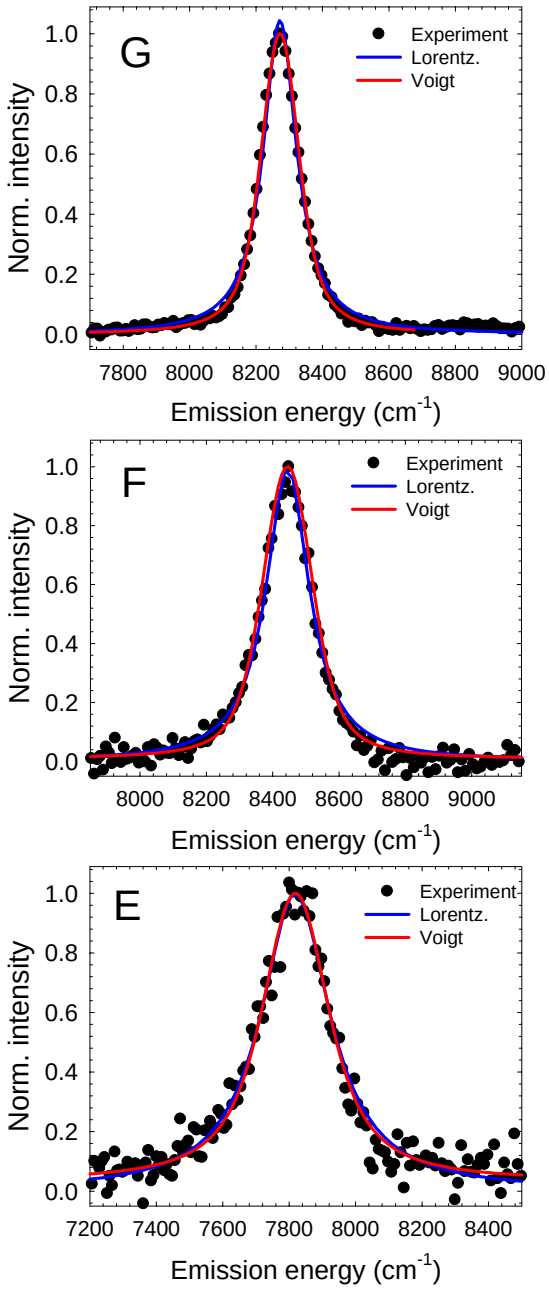

Figure S3. Emission spectra of individual SWCNTs suspended in peptides G, F and E and their corresponding Lorentzian and Voigt fits. For narrow peaks (such as peptide G), Voigt functions generally provide better fits because the spectrograph's limited spectral resolution of ~50 cm^{-1} contributes to the measured profiles. Broader SWCNT emission spectra appear almost entirely Lorentzian.

Spectral Width Data for Individual SWCNTs

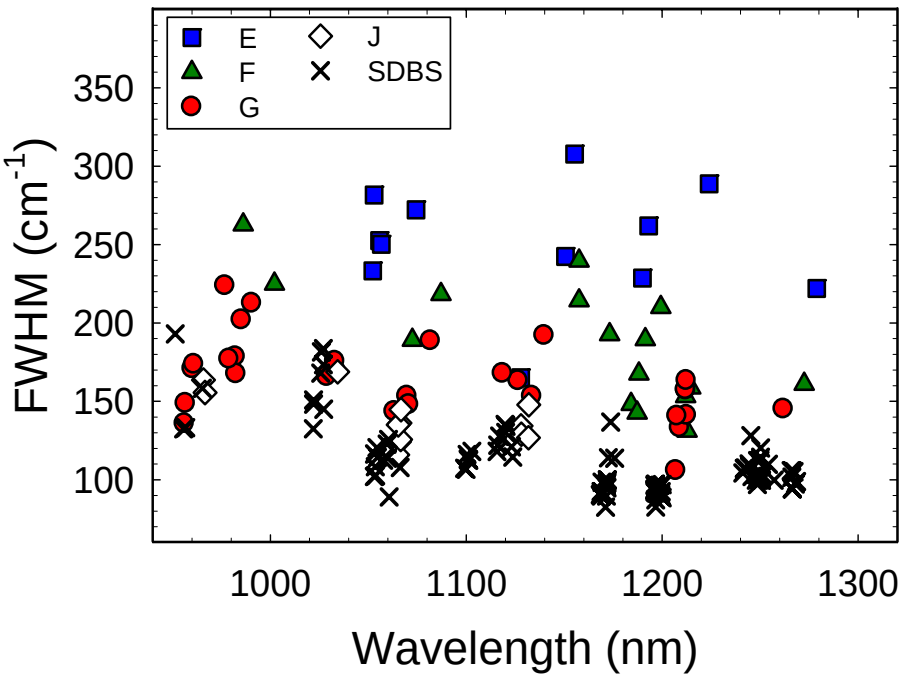

Figure S4. Lorentzian full-widths at half-maximum for emission from individual SWCNTs in aqueous suspension coated by SDBS and by peptides E, F, G, and J. The plotted width values were obtained by deconvoluting raw emission spectra to account for the spectrograph's finite resolution.

AFM Data for Peptide-suspended SWCNTs

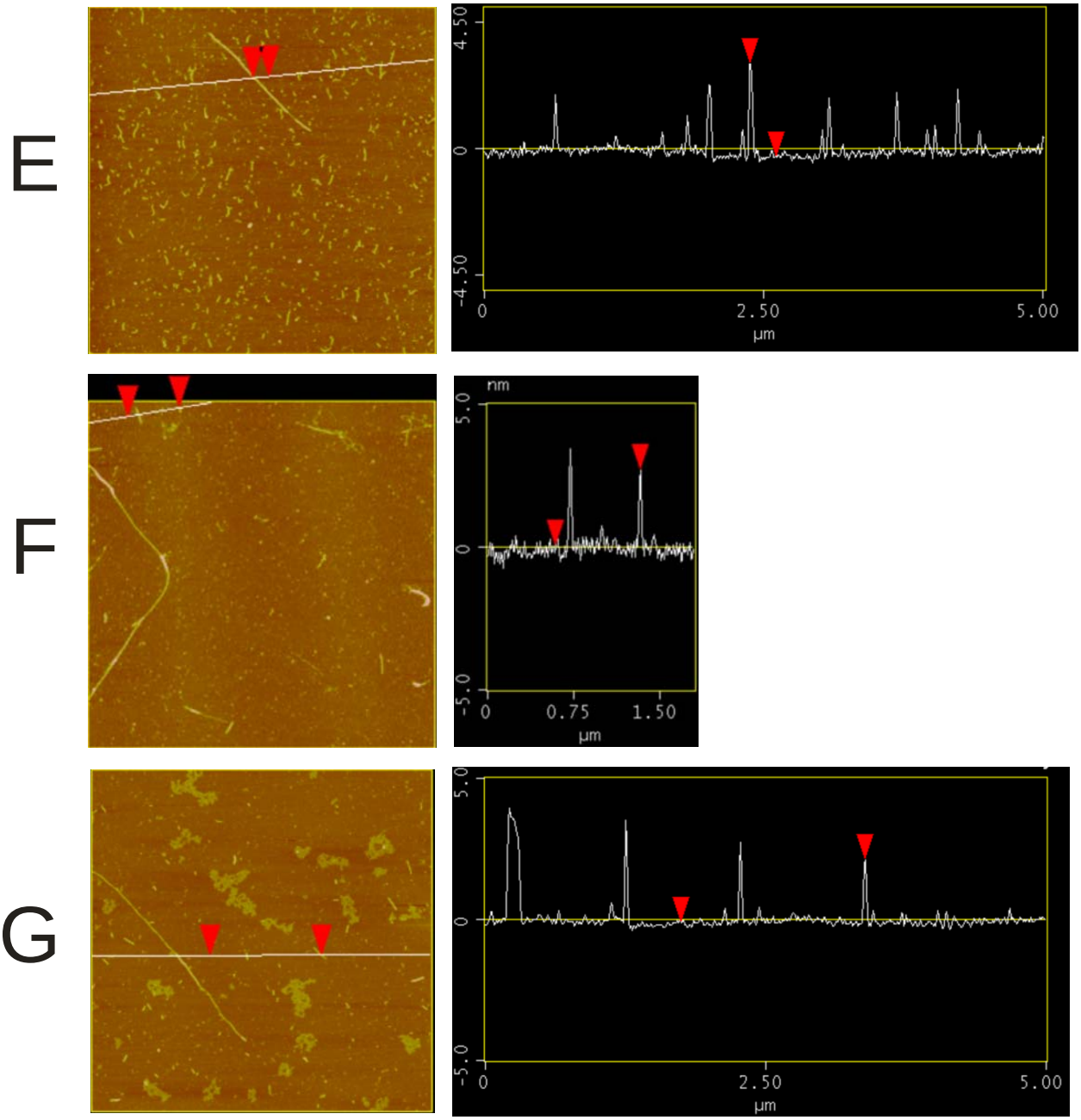

Figure S5. AFM images and height profiles of SWCNTs suspended in peptides E, F and G. The heights of SWCNT-containing structures range between 3 and 4.5 nm, whereas peptides self-assembled into β-sheet structures are ~2 nm in height. (see Supporting Information for Dong, et al., *J. Am. Chem. Soc.* **2007,** *129*, 12468-12472.)