Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

Wettability gradient-induced alignment of peptide nanotubes as templates for biosensing applications

Sawsan Almohammed,[a,b] Sarah O. Oladapo,[a] Kate Ryan,[a,b] Andrei L. Kholkin,[c] James H. Rice[a,†] and Brian J. Rodriguez[a,b,†]

[a] School of Physics, University College Dublin, Belfield, Dublin 4, Ireland.
[b] Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Belfield, Dublin 4, Ireland.
[c] Department of Physics & CICECO–Aveiro Institute of Materials, 3810-193 Aveiro, Portugal and Institute of Natural Sciences, Ural Federal University, 620000 Ekaterinburg, Russia.
[†] Authors to whom correspondence should be addressed. Electronic addresses: brian.rodriguez@ucd.ie and james.rice@ucd.ie.

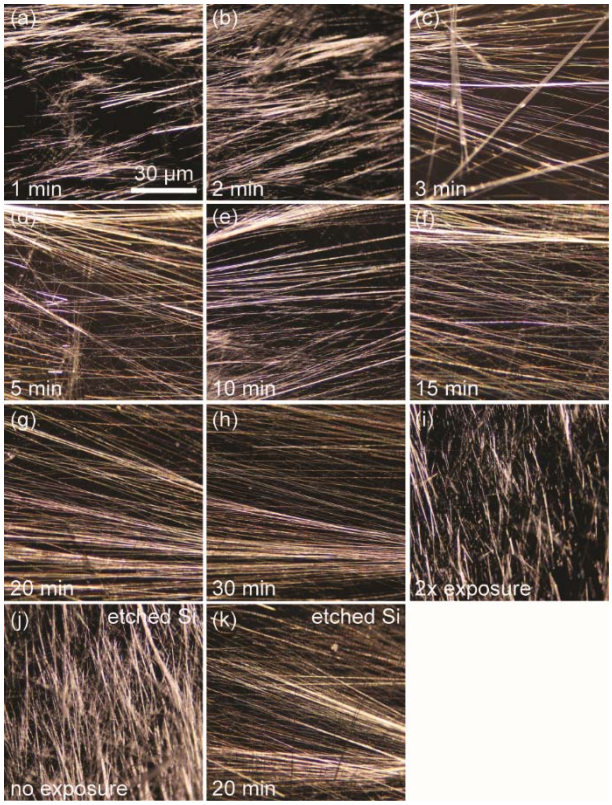

Figure S1. Optical images of peptide nanotubes (PNTs) formed using 2 mg/ml diphenylalanine (FF) solution with 0.5 cm opening size. (a-h) Optical images of PNTs assembled onto an as-received Si substrate following exposure to UV/ozone for 1, 2, 3, 5, 10, 15, 20, and 30 minutes, respectively. (i) Optical image of PNTs assembled onto an as-received Si substrate that had been previously exposed to UV/ozone twice, once with the mask in place (20 min) and once with the mask removed (20 min). (j) Optical image of PNTs assembled on an etched Si substrate. (k) Optical image of aligned PNTs on etched Si following 20 minutes exposure to UV/ozone.

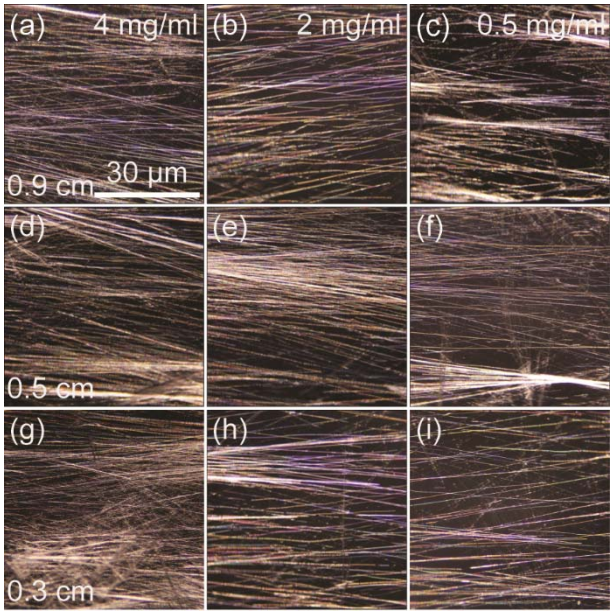

Figure S2. Optical images of aligned PNTs formed using 4, 2, and 0.5 mg/ml FF solutions and (a, b, c) 0.9 cm, (d, e, f) 0.5 cm, and (g, e, h) 0.3 cm mask openings, respectively.

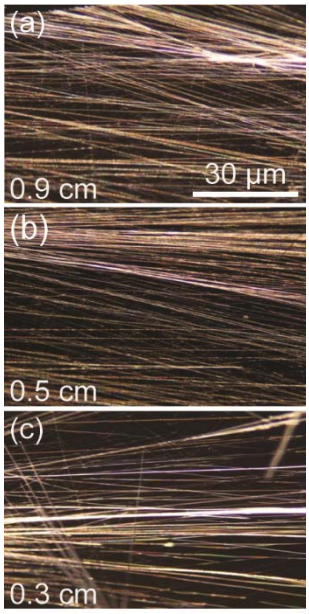

Figure S3. Optical images of aligned heated PNTs (2 mg/ml FF) prepared using (a) 0.9 cm, (b) 0.5 cm, and (b) 0.3 cm mask openings.

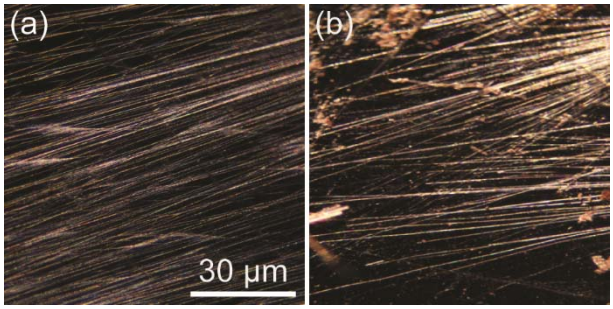

Figure S4. (a) Optical image of aligned PNTs coated with Ag nanoparticles (NPs). (b) Optical image of aligned Ag NP-coated PNTs after adding meso-tetra (N-methyl-4-pyridyl) porphine tetrachloride (TMPyP).

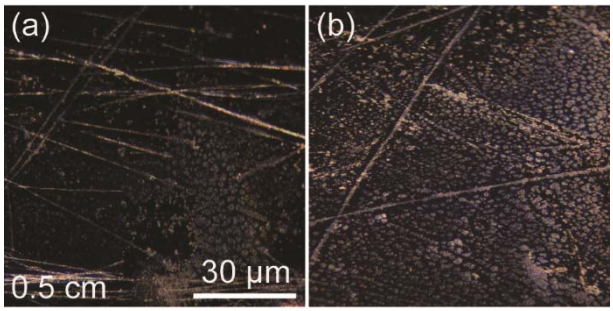

Figure S5. (a, b) Optical images of PNTs after adding TMPyP in the absence of Ag NPs.