Supporting Information

Nano Emitters and Innate Immunity: The Role of Surfactants and Bio-Coronas in Myeloperoxidase-catalyzed Oxidation of Pristine Single-Walled Carbon Nanotubes

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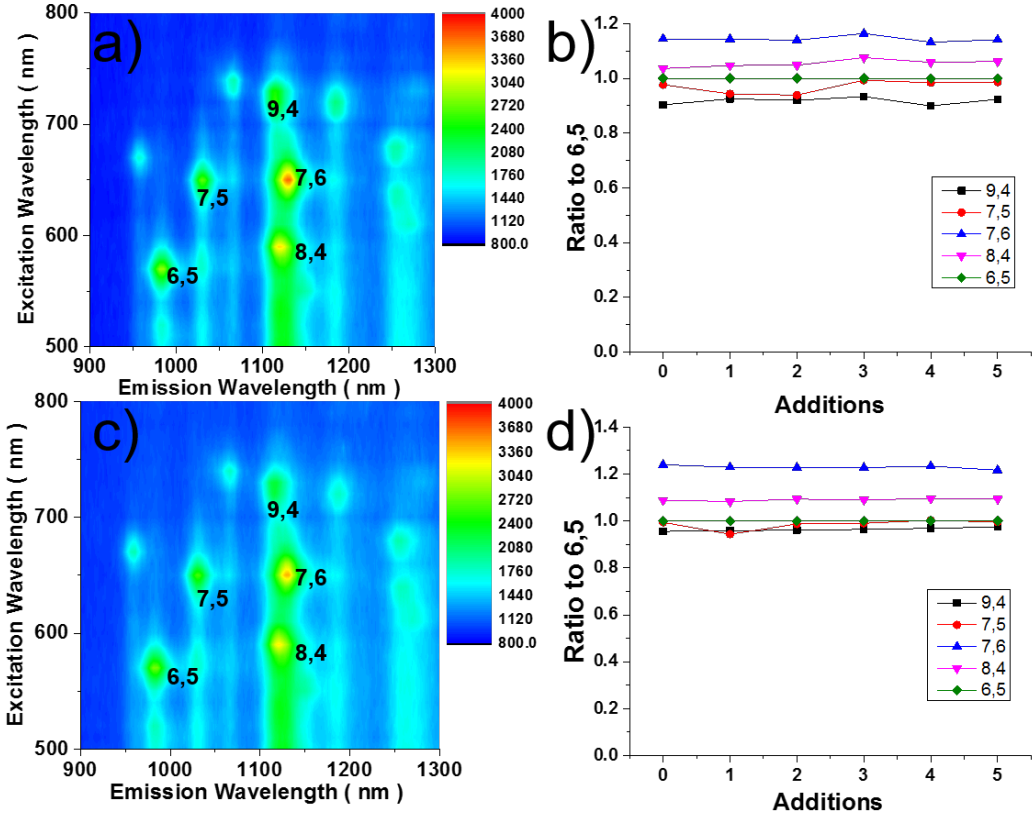

Figure S1. EE maps and relative intensity plots for control experiments: (a, b) MPO/NaCl without H_2O_2, and (c, d) NaCl without neither MPO nor H_2O_2.

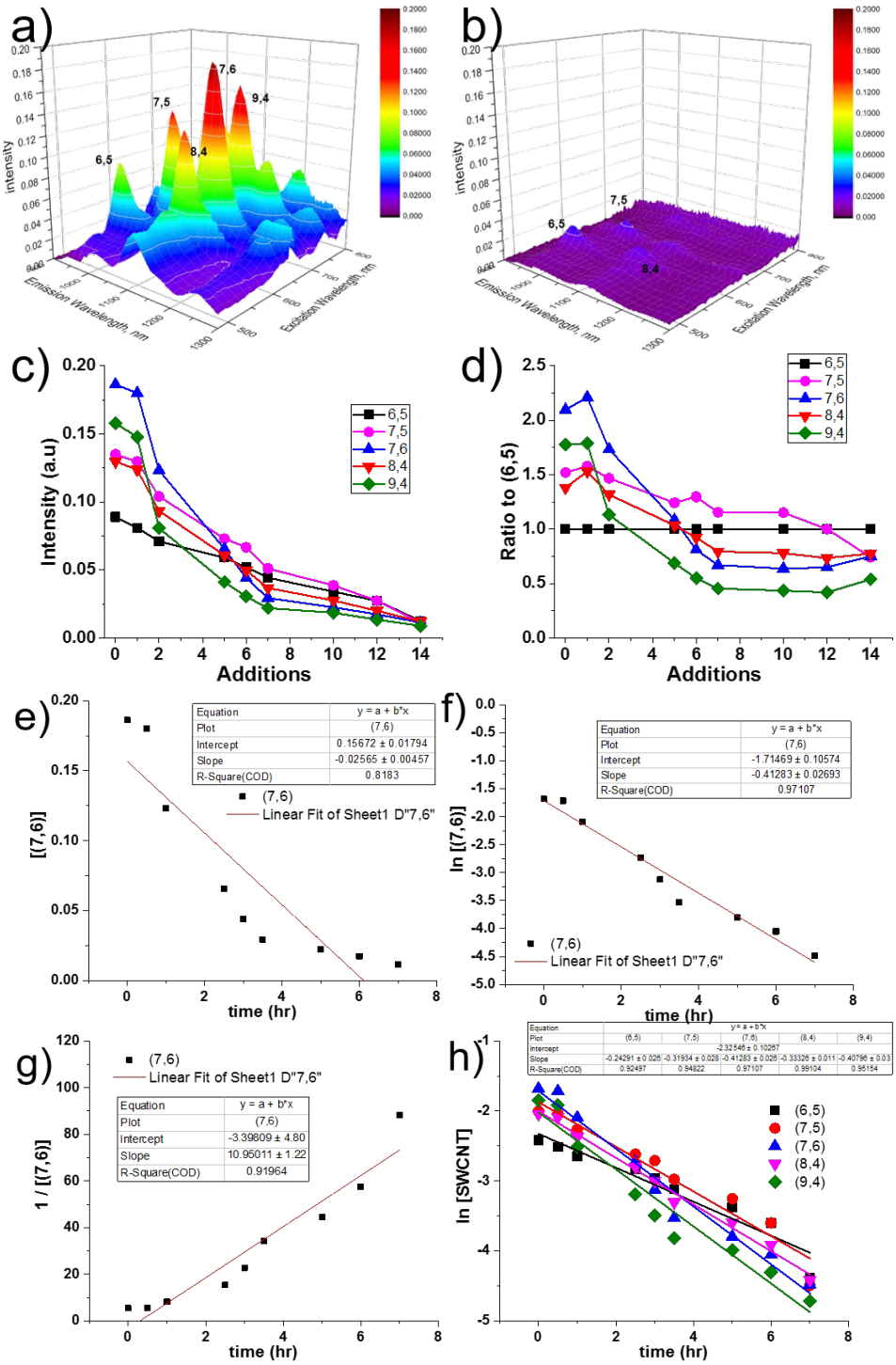

Figure S2. 3D plot for MPO/H_2O_2/NaCl treated SC-SWCNTs EE maps a) before and b) after 14 additions of H_2O_2 in MPO/H_2O_2/NaCl oxidation. Animated EE map is available as gif file. c) Intensity values from the EE maps, and d) Relative emission intensity plot. Concentration (i.e., PL intensity) data from (7,6) SWCNTs were fitted to (e) zero, (f) first, and (g) second order rate law. h) First order reaction equation applied to all SWCNTs.

Table S1. Calculated rate constants for different SWCNTs (Figure S2h).

SWCNTs	(6,5)	(7,5)	(8,4)	(7,6)	(9,4)
Diameter (nm)	0.757	0.829	0.840	0.895	0.916
Rate Constant (/hr)	0.24 ± 0.03	0.32 ± 0.03	0.33 ± 0.01	0.41 ± 0.03	0.41 ± 0.03

The calculated rate constants for different SWCNTs show show diameter dependence. Please see Figure 2d in the main text and the linear fitting equation parameters below.

Equation	y = a + b*x
Intercept	-0.63 ± 0.07
Slope	1.14 ± 0.09
R-Square	0.98327

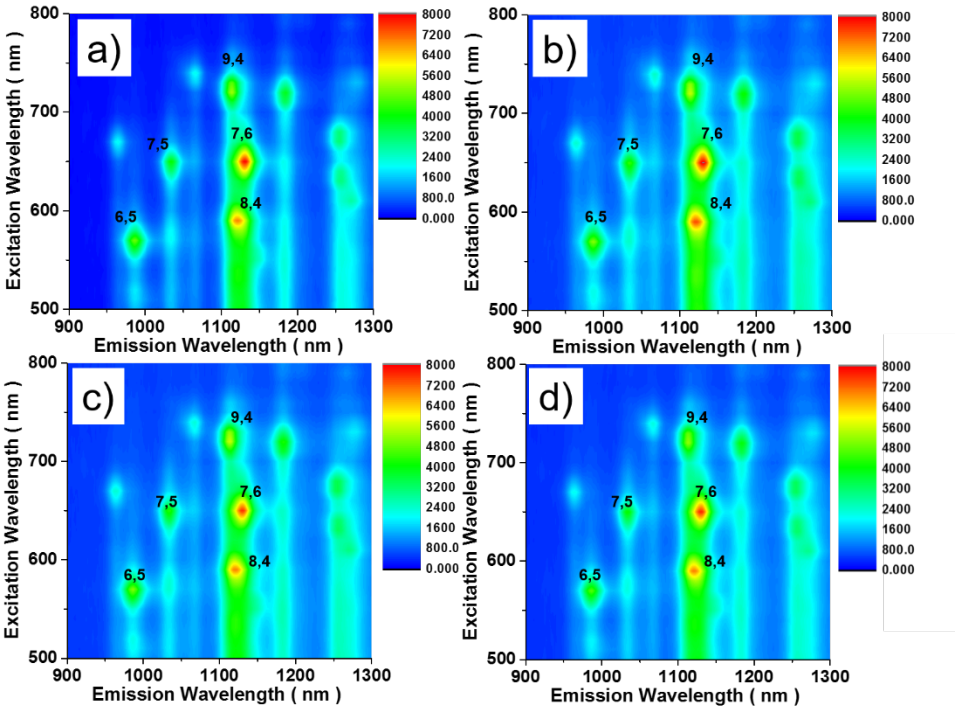

Figure S3. EE maps of SDC-SWCNTs a) before and b) after oxidation with MPO/H_2O_2/NaCl. EE maps for controls, c) with MPO/NaCl (without H_2O_2), and d) with H_2O_2/NaCl (without MPO).

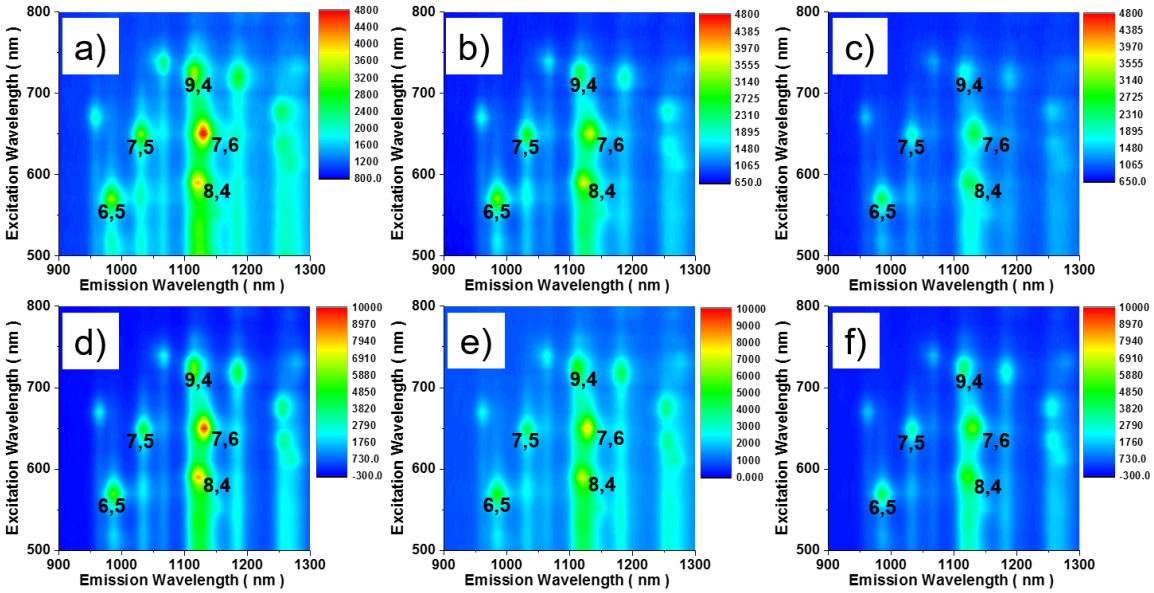

Figure S4. EE maps for SC-SWCNTs a) before dialysis, b) after dialysis, and c) dialyzed in the presence of MPO. EE maps for SDC-SWCNTs d) before dialysis, e) after dialysis, and f) dialyzed in the presence of MPO.

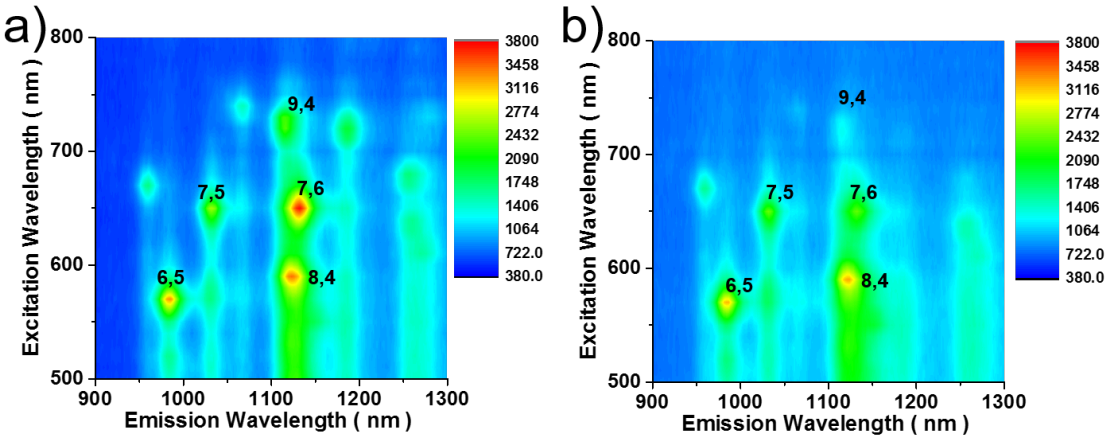

Figure S5. EE maps a) before and b) after NaOCl oxidation of SC-SWCNTs.

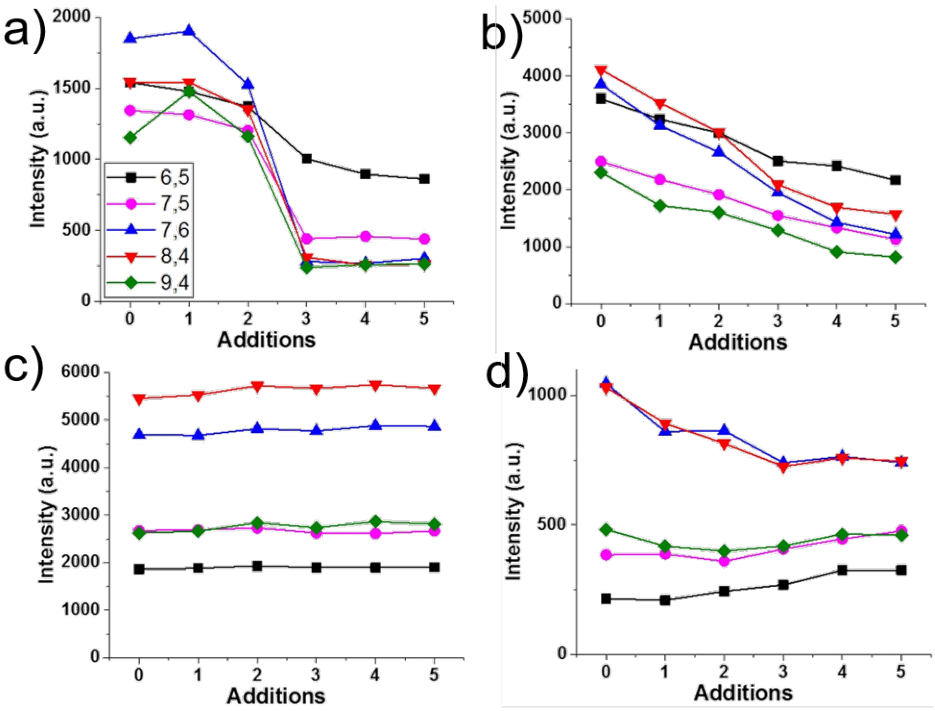

Figure S6. Intensity plot for a) CpG DNA-SWCNTs, b) BSA-SWCNTs, c) PL-PEG-SWCNTs, and d) PS-SWCNTs during oxidation with MPO/H_2O_2/NaCl. Values obtained from experiment shown in Figure 4.

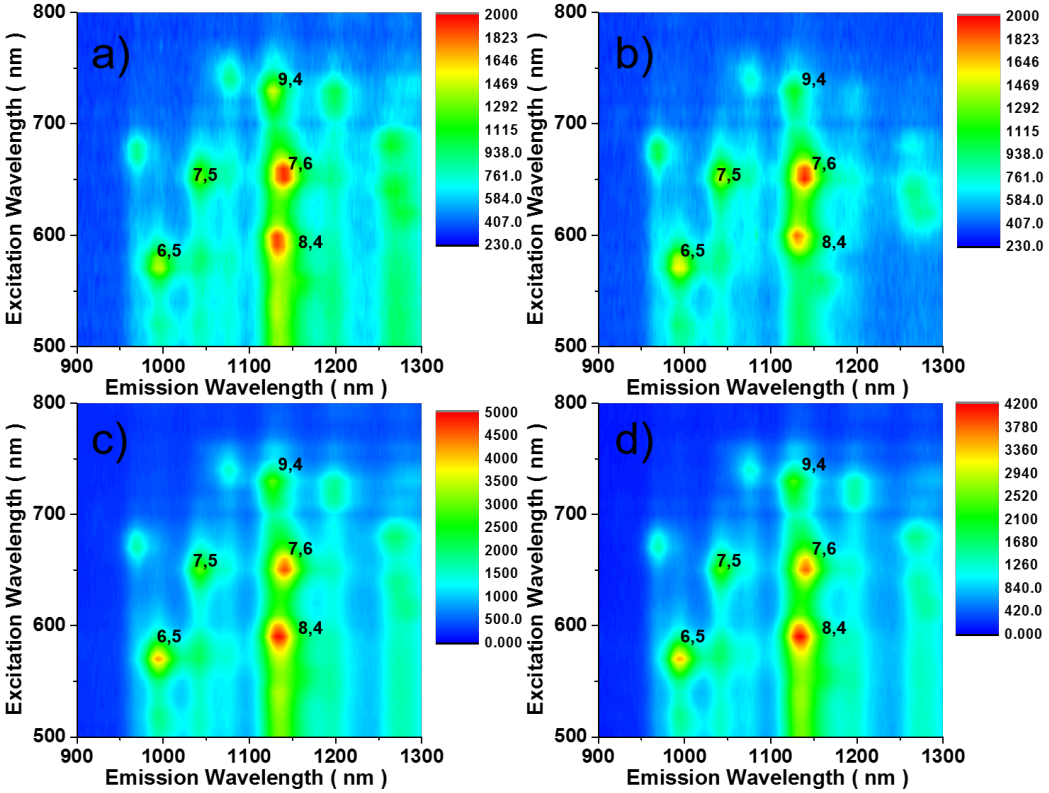

Figure S7. Controls for CpG DNA-SWCNTs oxidation with MPO/H_2O_2/NaCl: (a) MPO/NaCl without H_2O_2, and (b) H_2O_2/NaCl without MPO. Controls for MPO-catalyzed oxidation of BSA-SWCNTs: (c) MPO/NaCl without H_2O_2, and (d) H_2O_2/NaCl without MPO.

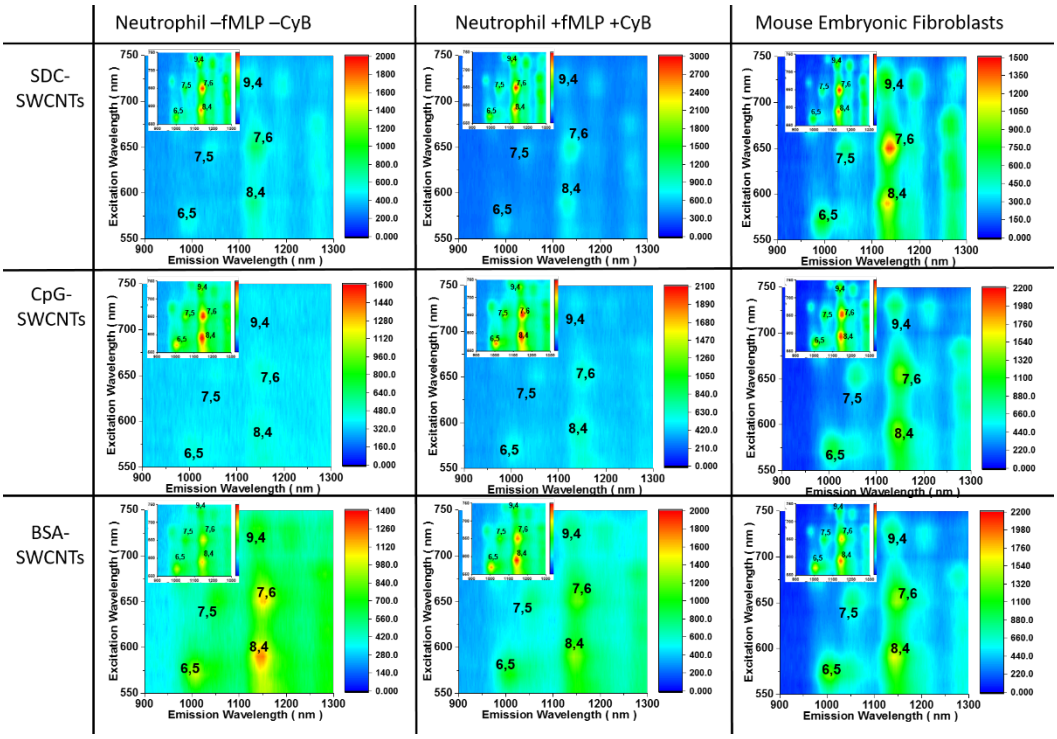

Figure S8. EE maps of SDC-SWCNTs (top), CpG DNA-SWCNTs (middle) and BSA-SWCNTs (bottom) subjected to non-activated neutrophils (left), activated neutrophils (center) and mouse embryonic fibroblasts (right). Inserts are EE maps before the reactions.