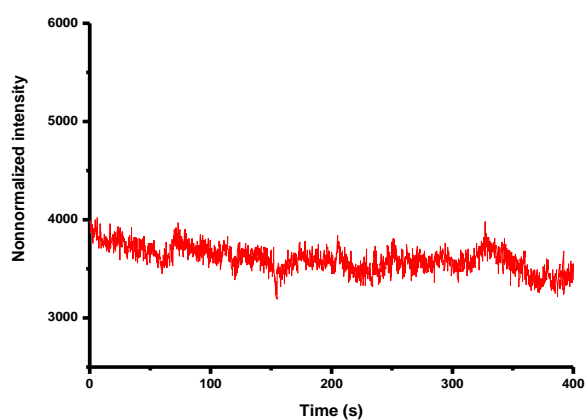


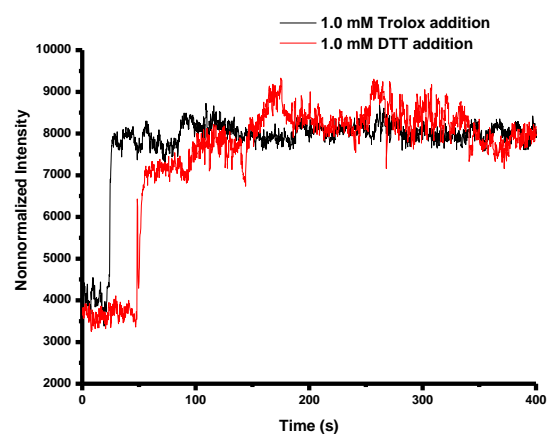
## Supporting Information

Figure S1b shows the effect of Trolox and DTT addition on SWNT brightness. % 100 increase was observed after addition of 1 mM Trolox and DTT at  $t=20$  and 50 s, respectively compared to the control (the absence of Trolox, DTT and NO) (Figure S1a). As shown in the Figure S1c, g and h, methanol addition neither affects fluorescence intensity nor NO quenching ability of AT<sub>15</sub>-SWNT. Further, increasing Trolox concentrations above a certain threshold also does not have an effect on SWNT brightness and NO sensitivity (Figure S1c, d, e, f).

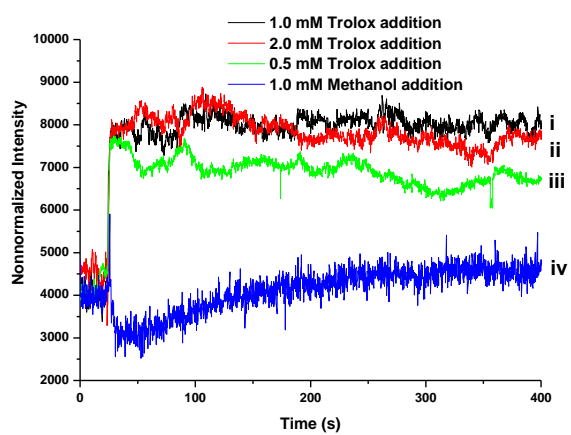
a)



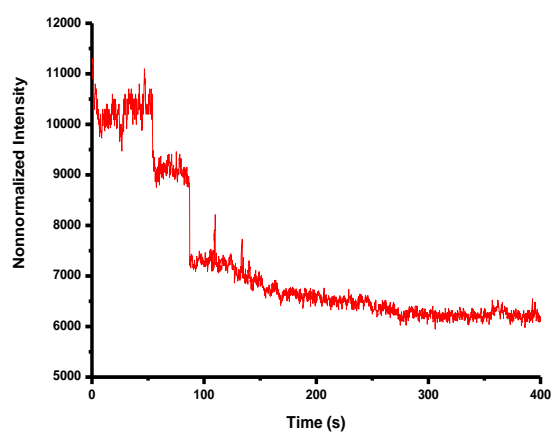
b)



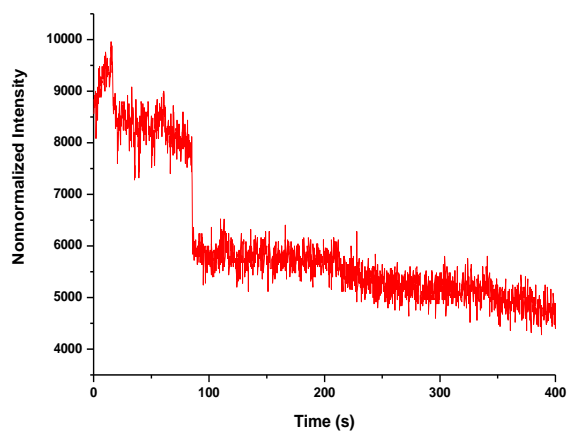
c)



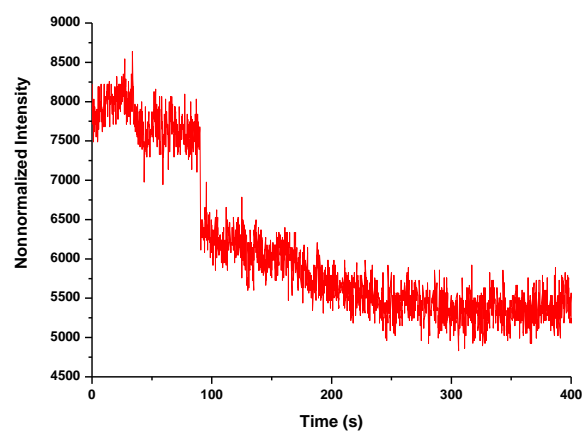
d)



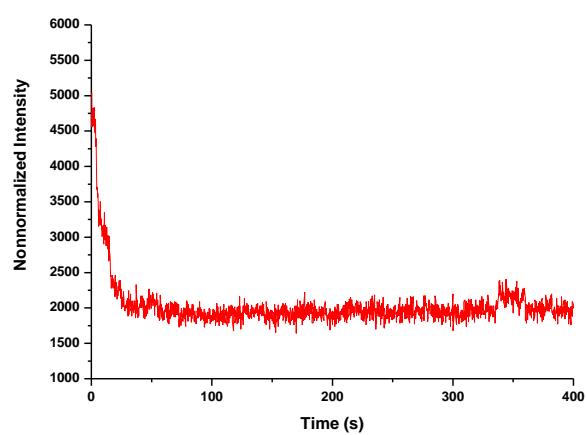
e)



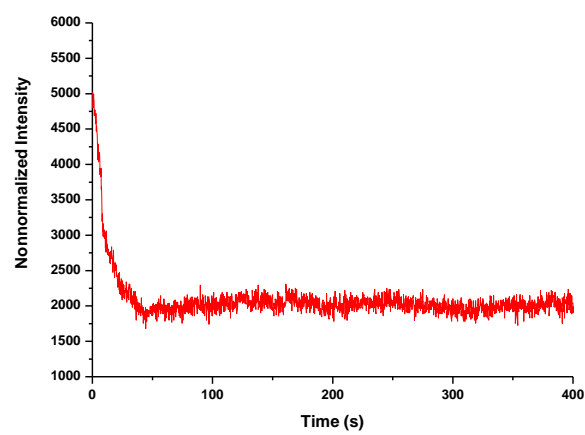
f)



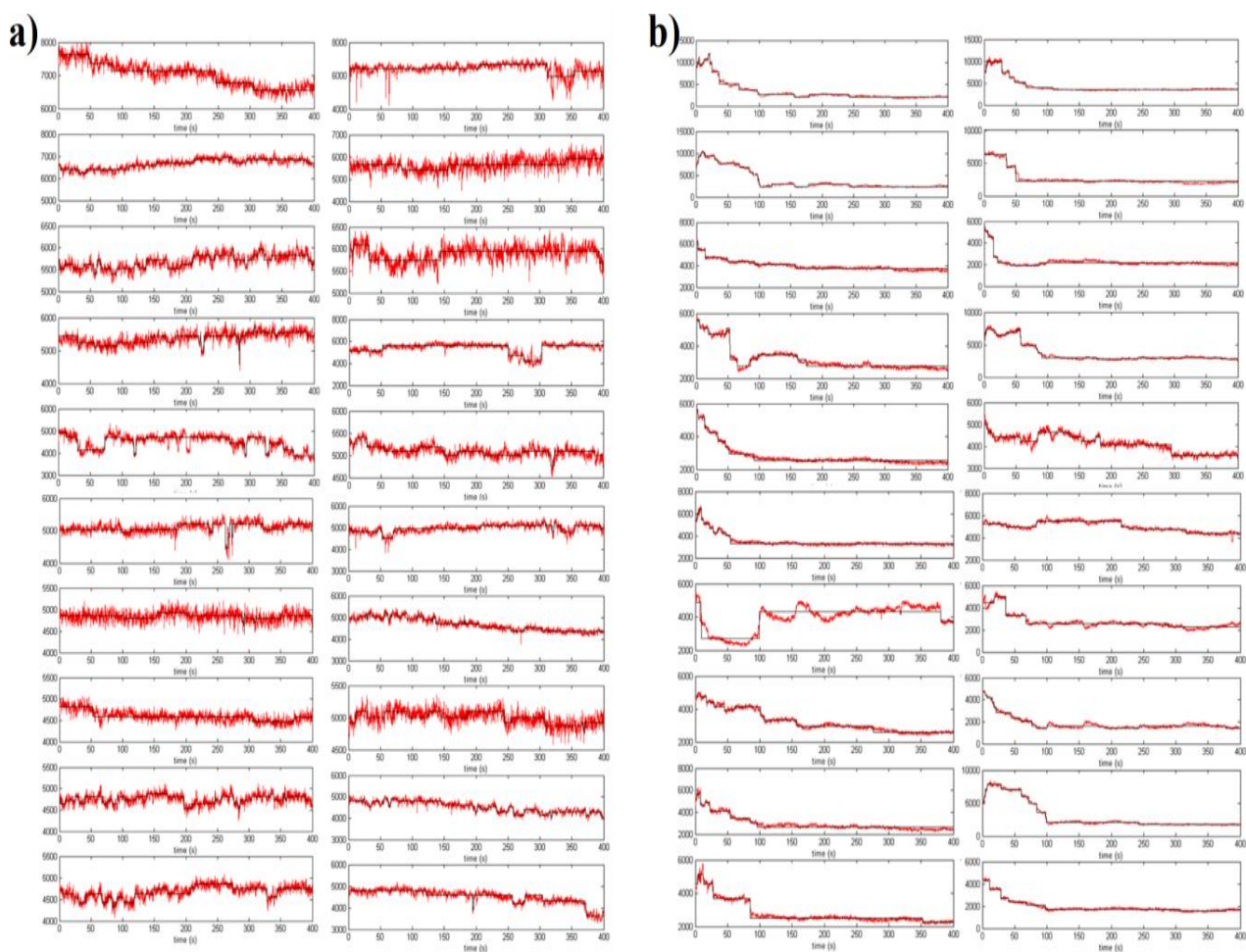
g)

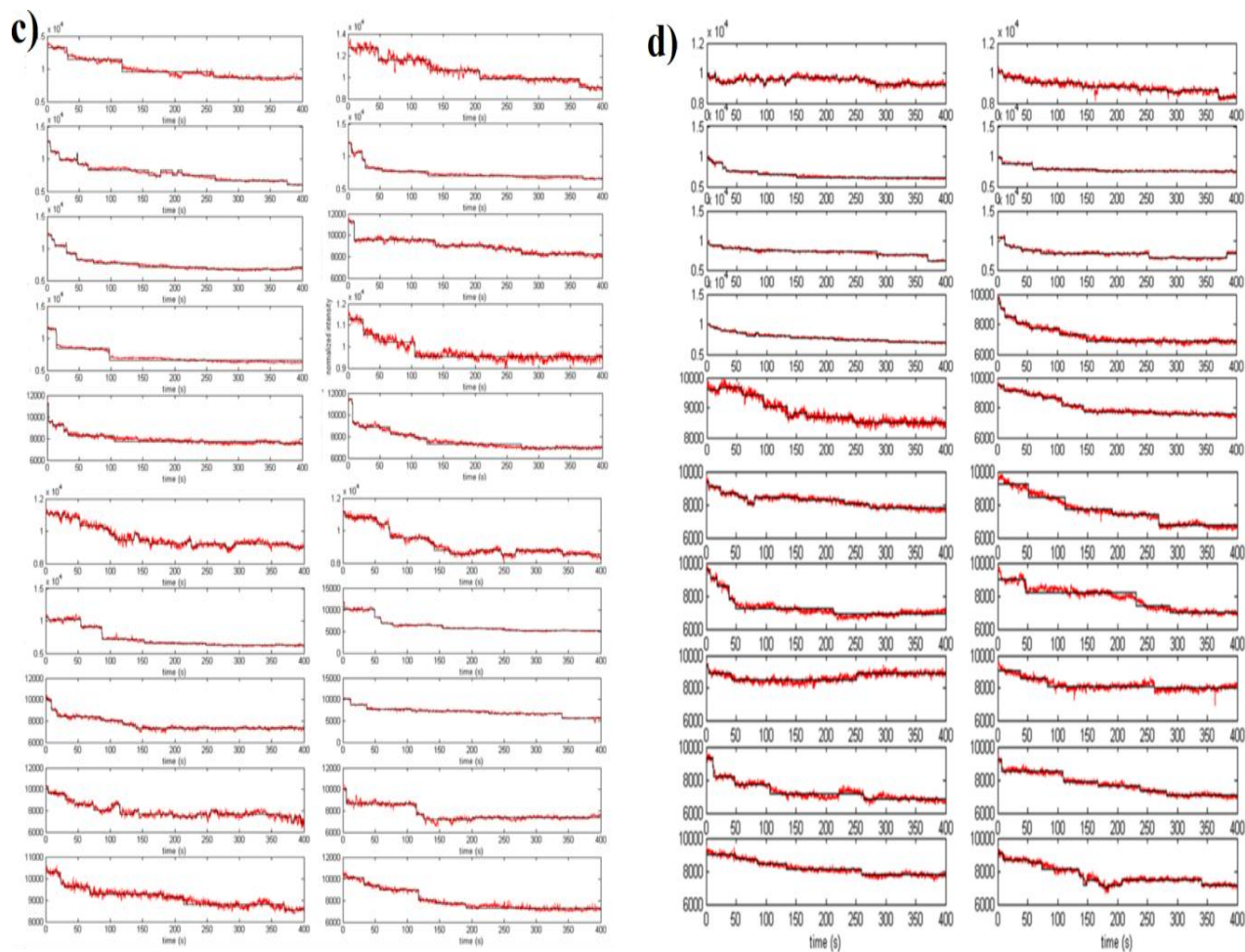


h)



**Figure S1.** Representative fluorescence intensity-time traces of an individual SWNT a) in the absence of Trolox, DTT and NO b) with 1 mM Trolox and DTT addition at  $t=20$  and  $50$  s, respectively c) in the presence of i) 1 mM ii) 2mM iii) 0.5 mM Trolox iv) 1mM methanol at  $t=20$  s, d) with  $19.6\ \mu\text{M}$  NO addition at  $t=0$  in the presence of 1 mM Trolox, e) 2 mM Trolox, and f) 0.5 mM Trolox, g) with  $19.6\ \mu\text{M}$  NO addition, h) with  $19.6\ \mu\text{M}$  NO addition in the presence of 1 mM methanol.





**Figure S2.** Experimental Intensity Traces with Best-Fit Traces. Intensity vs. time traces for the 20 brightest nanotubes were fit to ideal, de-noised states. Experimental data are shown in red, and the best-fit traces are shown in black. Traces shown are for those (a) in the absence of Trolox, DTT and NO, (b) with the addition of  $9.8 \mu\text{M}$  NO at  $t=0\text{s}$ , (c) in the presence of  $1\text{mM}$  Trolox with the addition of  $19.6 \mu\text{M}$  NO, and (d) in the presence of  $1\text{mM}$  DTT with the addition of  $19.6 \mu\text{M}$  NO. The y-axes are re-scaled to elucidate the individual stochastic fluctuations.