# Supporting Information

**for**

# Photoluminescent Silica Nanotubes and Nanodisks Prepared by the Reverse Micelle Sol-Gel Method

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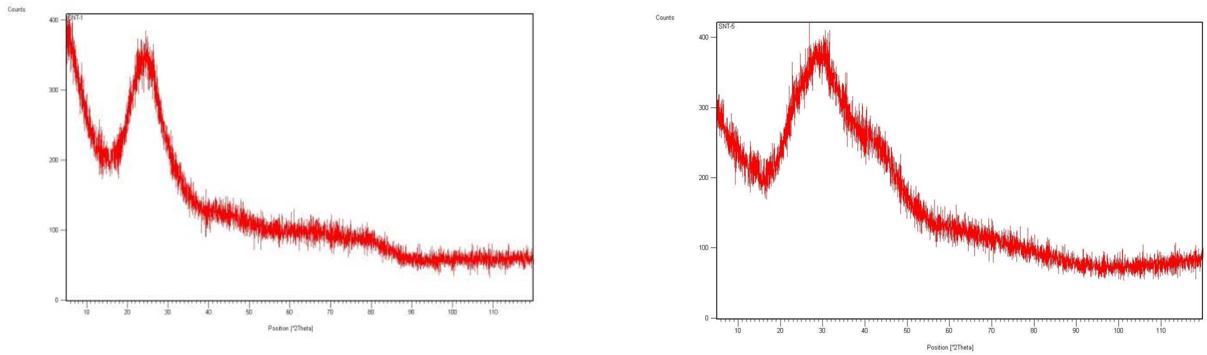



**(A)** **(B)**

**Figure S1.** X-ray diffraction (XRD) spectrum of (A) silica nanodisk prepared at Wo = 22 and (B) silica nanotubes prepared at Wo = 2.

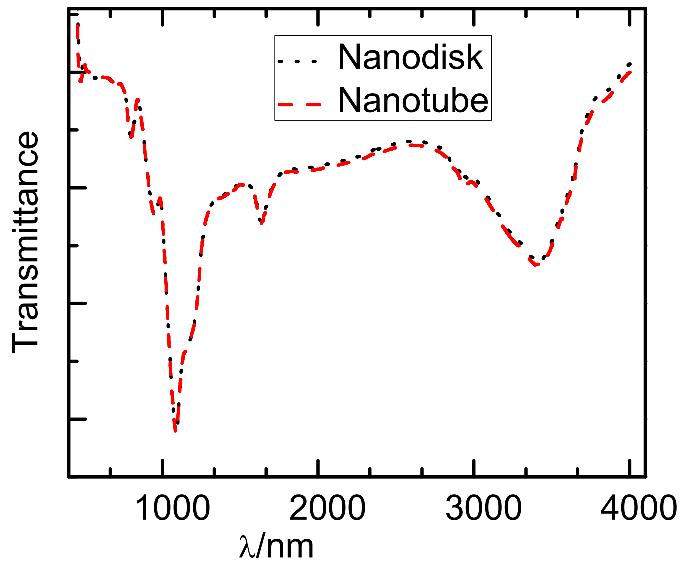
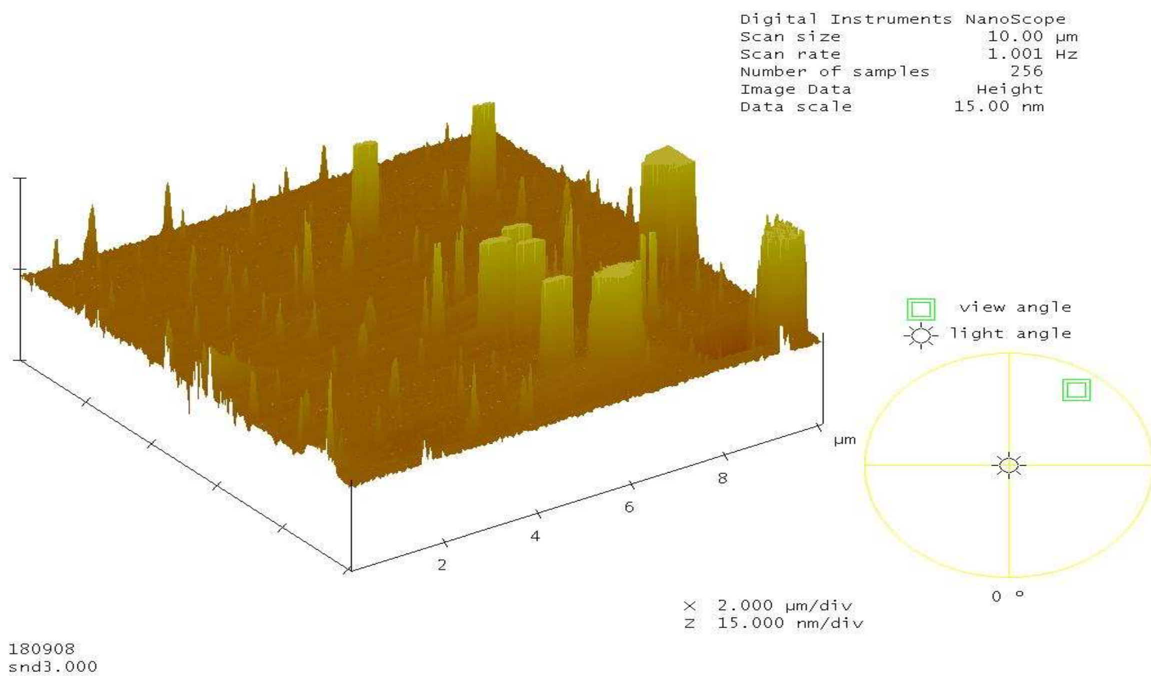
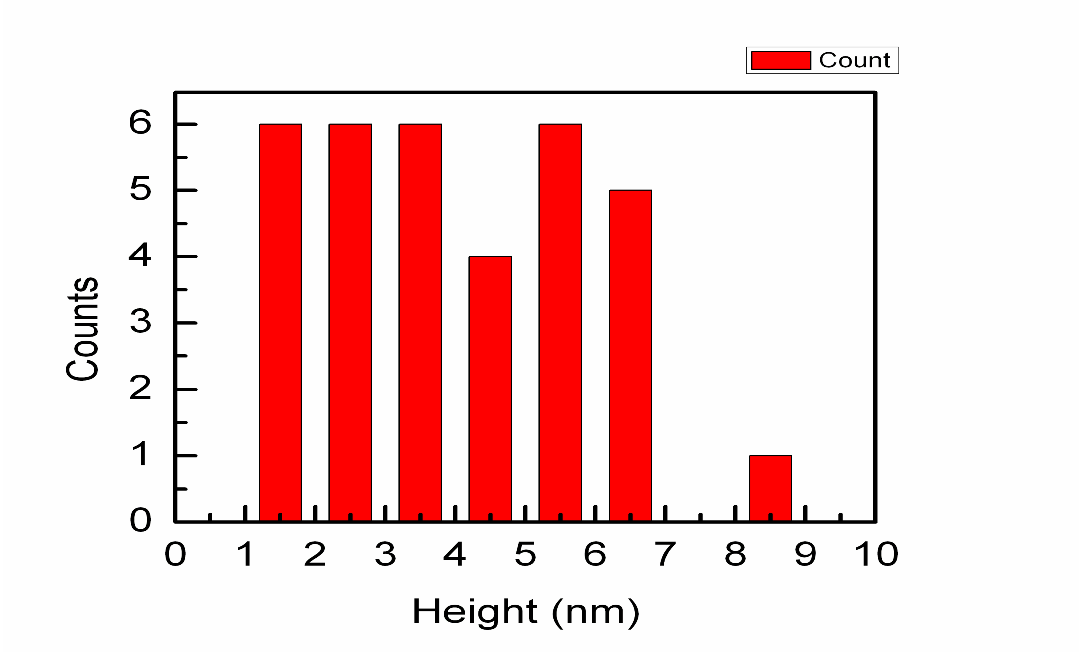



**Figure S2.** Infrared spectra of (A) silica nanodisk prepared at Wo = 22 and (B) silica nanotubes prepared at Wo = 2.




(A)




(B)

**Figure S3**.(A) Three dimensional AFM image, (B) height distribution graph of the nanodisk prepared at $w_0$=22 solution.

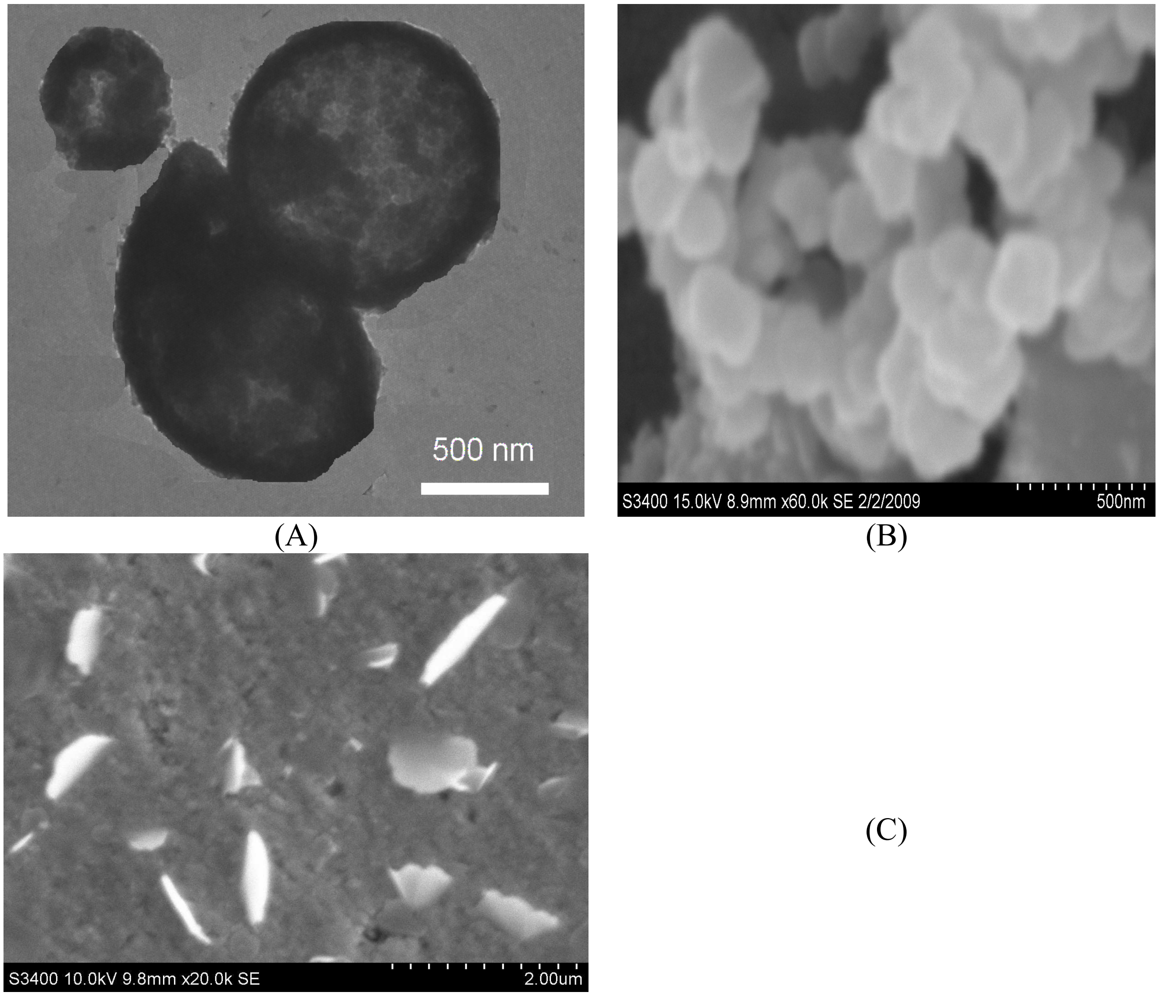
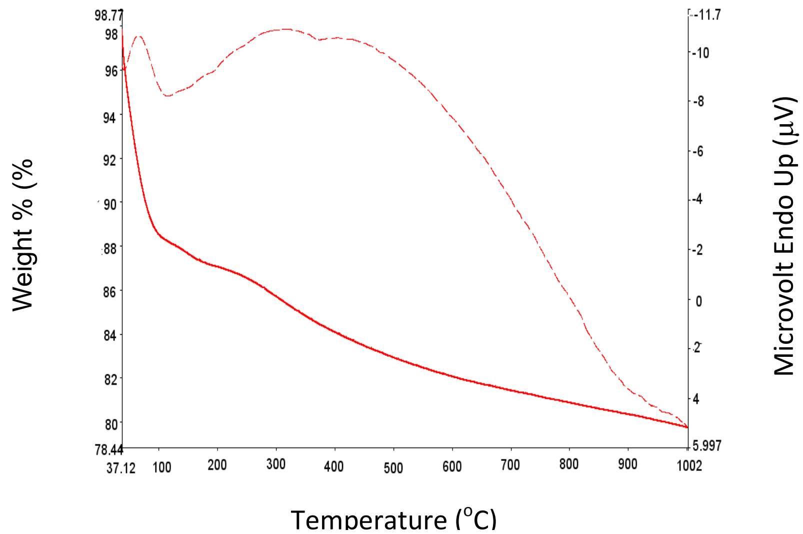
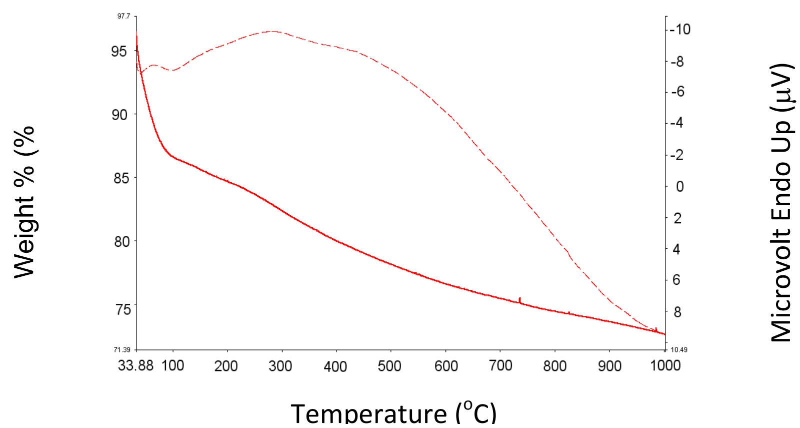



**Figure S4.** Effect of variation of $w_0$ values: Trasmission electron micrograph of silica nanodisk preapared in (A) $w_0$=40 miemulsion; Scanning electron micrographsof silica nanodisk prepared in (B) $w_0$=40 miemulsion. (C) SEM images of the nanodisks at a higher dilution of the solution used to prepare the sample.




**(A)**




**(B)**

**Figure S5.** Thermogravimetric (solid line) and differential thermal analysis (dotted line) data for (A) silica nanodisks prepared in $W_0 = 22$; (B) silica nanotubes prepared Wo = 2 solutions.

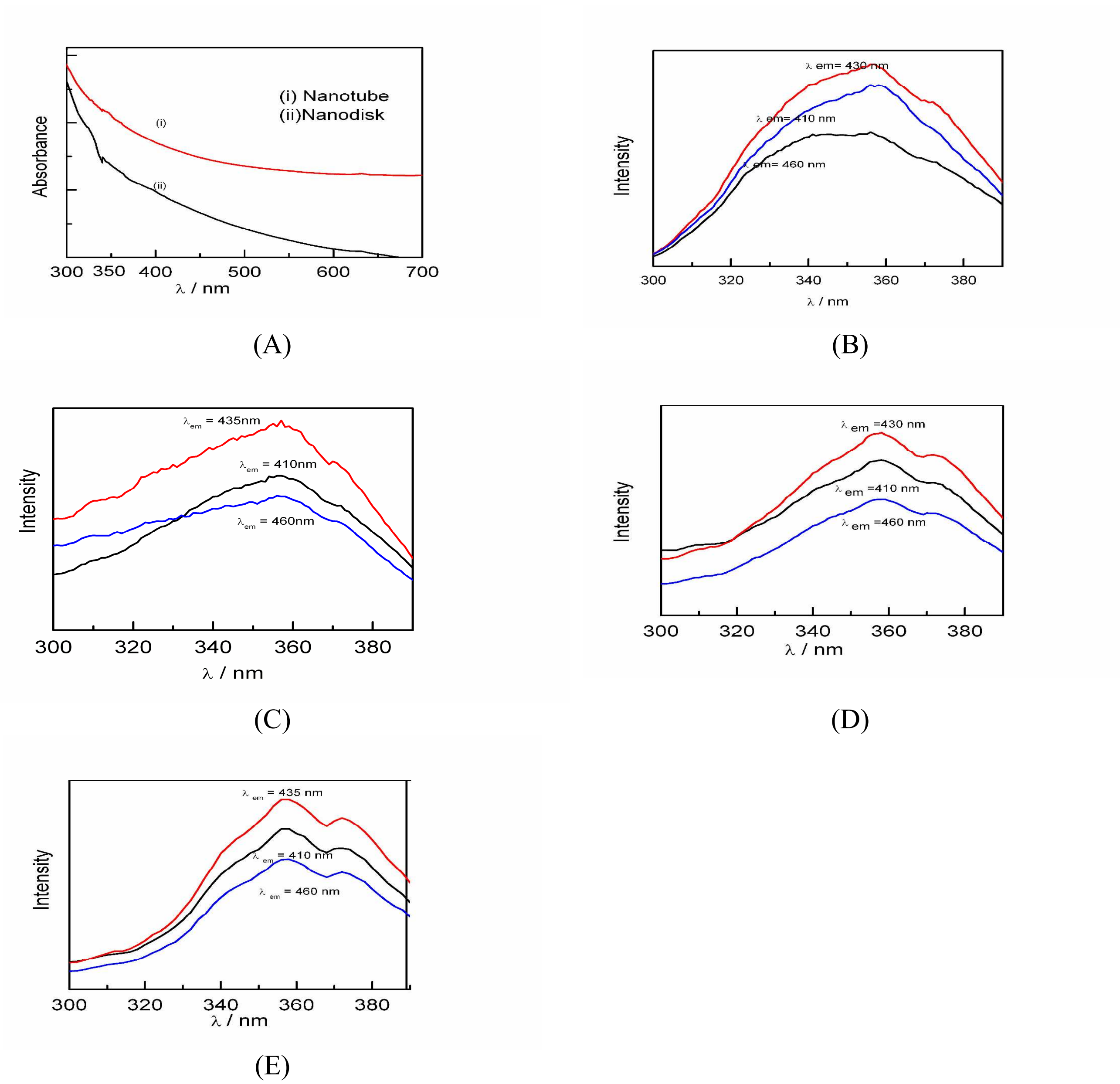



**Figure S6.** (A)Absorption spectra of the ethanolic dispersion of silica nanbostructures; Excitation spectra of silica nanodisk prepared at $w_0$=22 solution (B) after heating and (D) after nitrogen purging; Excitation spectra of silica nanodisk prepared at $w_0$=2 solution (C) after heating and (E) after nitrogen purging.

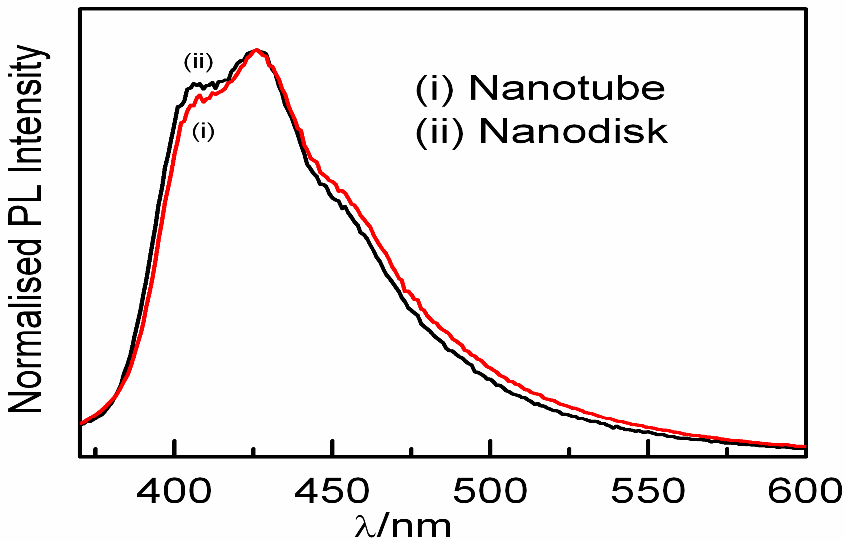



**Figure S7.** Normalised PL intensity of silica nanotubes and nanodisks dispersed in ethanol after annealing at 100$^{o}$C. $\lambda_{ex}$ = 350 nm

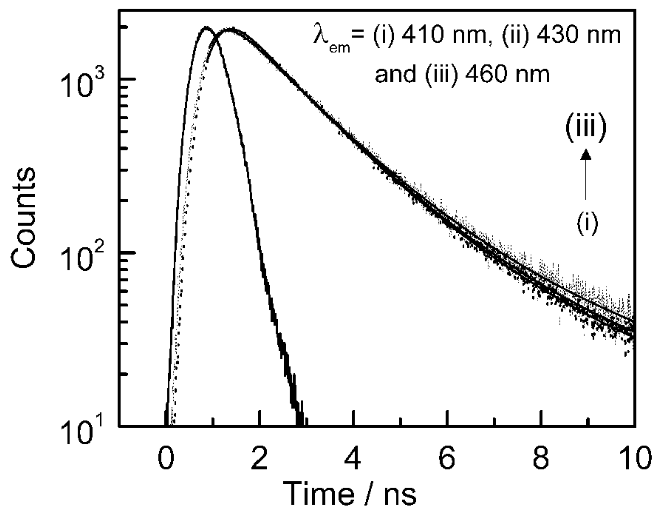



**Figure S8.** PL decays of the ethanolic dispersion of silica nanotubes prepared using reverse micelles of $w_o = 2$, after nitrogen purging. The decays recorded at emission wavelengths of 410 nm, 430 nm and 460 nm are almost superimposable.

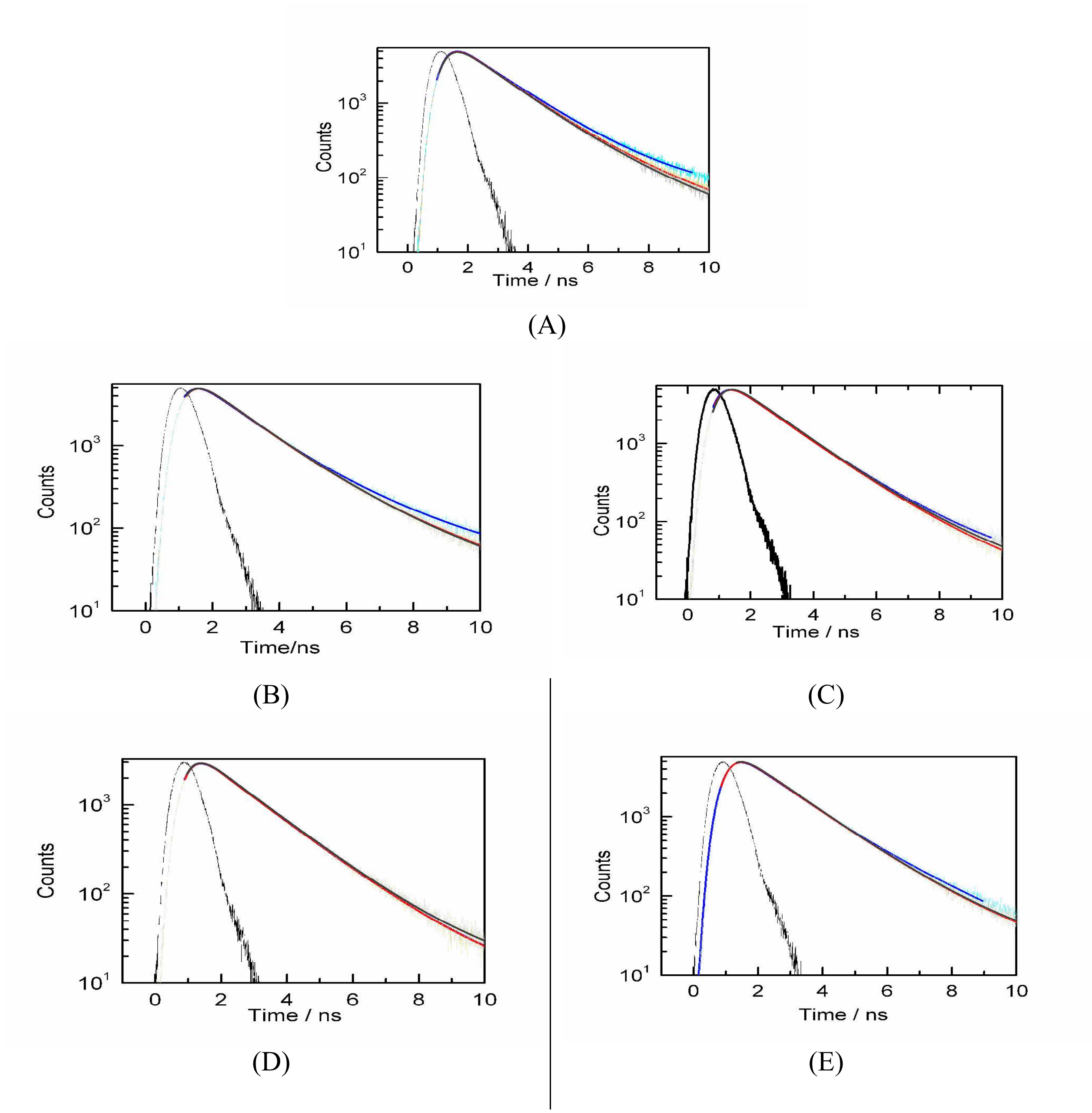



**Figure S9**. Time Resolved Photoluminescence of SNT (A)$w_o$=3, (B)$w_o$=4,(C)$w_o$=10,(D)$w_o$=22,(E)$w_o$=40 dispersed in Ethanol, λex = 341 nm.

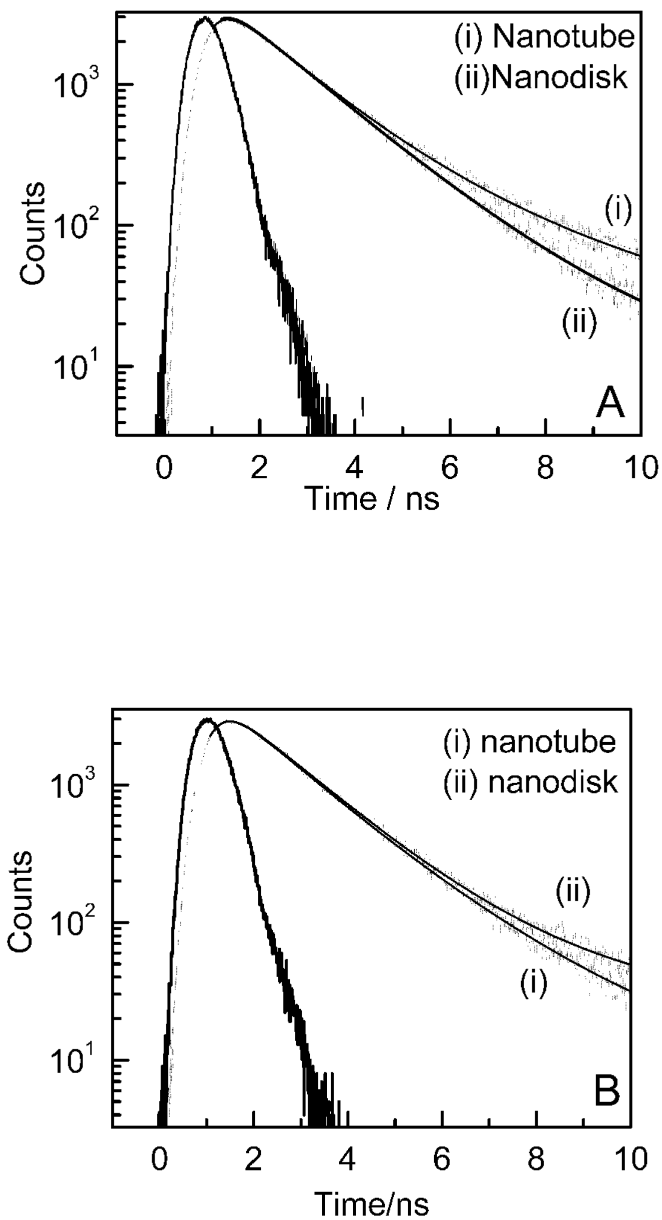



**Figure S10.** PL decays of the ethanolic dispersion of silica nanotubes (prepared from microemulsions $w_0$=2) and nanodisks (prepared from microemulsions $w_0$=22), after (A) nitrogen purging and (B) at oxygen purging. $\lambda_{ex}$ = 341 nm , $\lambda_{em}$ = 460 nm in all cases.

**Table S1. Photoluminescence lifetimes and their amplitudes at $\lambda_{em}$ = 410 nm**

| Sample ($w_{ow}$) | $A_1$ | $T_1$ | $A_2$ | $T_2$ | $\chi^2$ |
|---|---|---|---|---|---|
| 3 | 0.94 | 1.55 | 0.06 | 2.99 | 3 |
| 4 | 0.83 | 1.21 | 0.17 | 2.52 | 4 |
| 10 | 0.83 | 1.33 | 0.17 | 2.49 | 10 |
| 22 | 0.89 | 1.43 | 0.11 | 2.25 | 22 |
| 40 | 0.85 | 1.33 | 0.15 | 2.49 | 40 |

**Table S2. Photoluminescence lifetimes and their amplitudes at $\lambda_{em}$ = 430 nm**

| Sample ($w_{ow}$) | $A_1$ | $T_1$ | $A_2$ | $T_2$ | $\chi^2$ |
|---|---|---|---|---|---|
| 3 | 0.90 | 1.40 | 0.10 | 2.99 | 1.08 |
| 4 | 0.83 | 1.26 | 0.17 | 2.52 | 1.02 |
| 10 | 0.86 | 1.38 | 0.14 | 2.36 | 1.01 |
| 22 | 0.93 | 1.50 | 0.07 | 2.47 | 1.06 |
| 40 | 0.83 | 1.39 | 0.17 | 2.20 | 0.96 |