

## Supporting Information

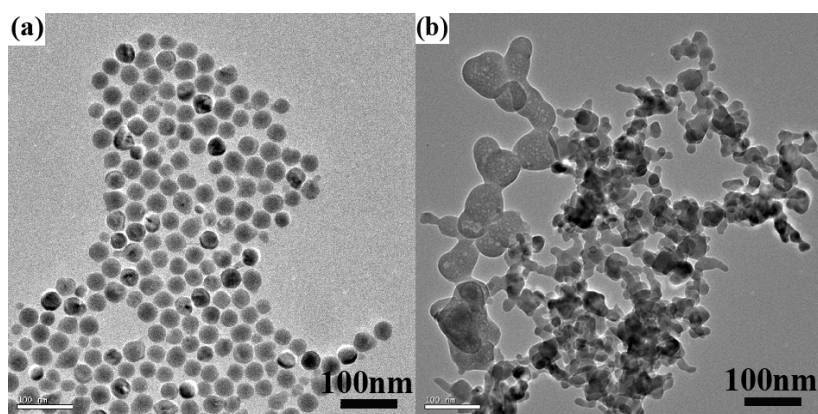
### **Multifunctional NaYF<sub>4</sub>:Yb/Er/Gd Nanocrystal Decorated SiO<sub>2</sub> Nanotubes for Anti-cancer Drug Delivery and Dual Modal Imaging**

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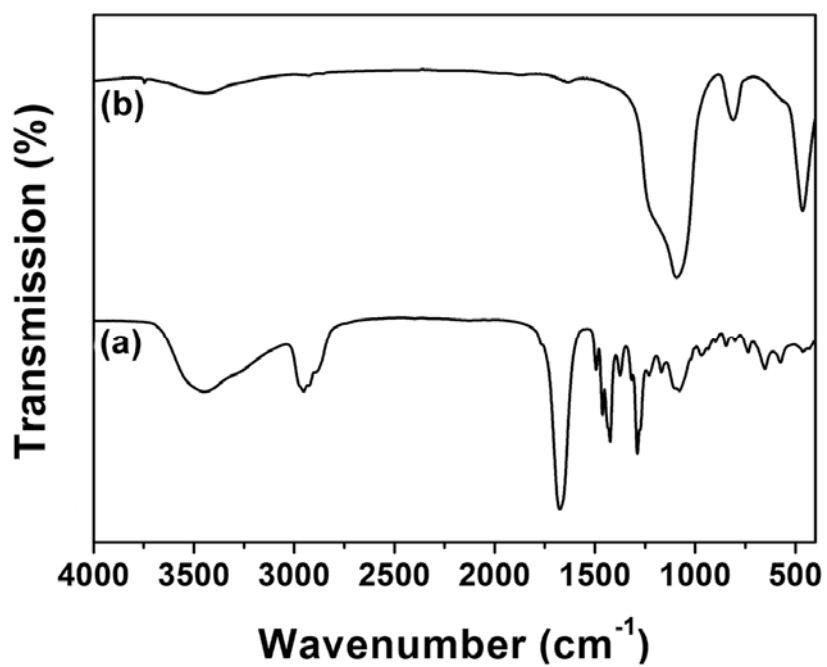
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**Figure S1** TEM images of PEI coated  $\alpha$ -NaYF<sub>4</sub>:Yb/Er/Gd NCs (a) and NCs synthesis without PEI (b).



**Figure S2** The FT-IR spectra of MUCNCs@precursor fibers (a) and pure MUCNCs@SNTs (b).

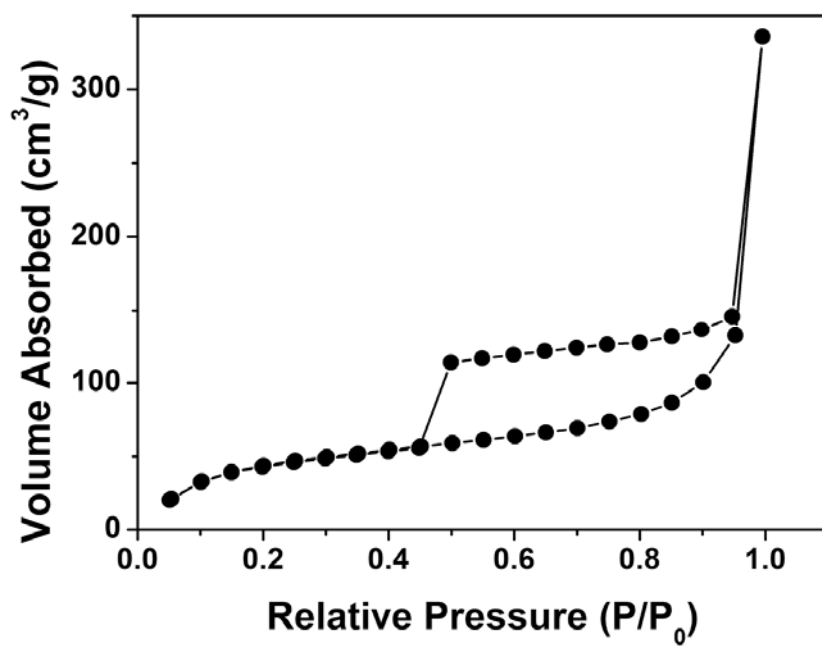


Figure S3  $\text{N}_2$  adsorption/desorption isotherms of MUCNCs@SNTs.

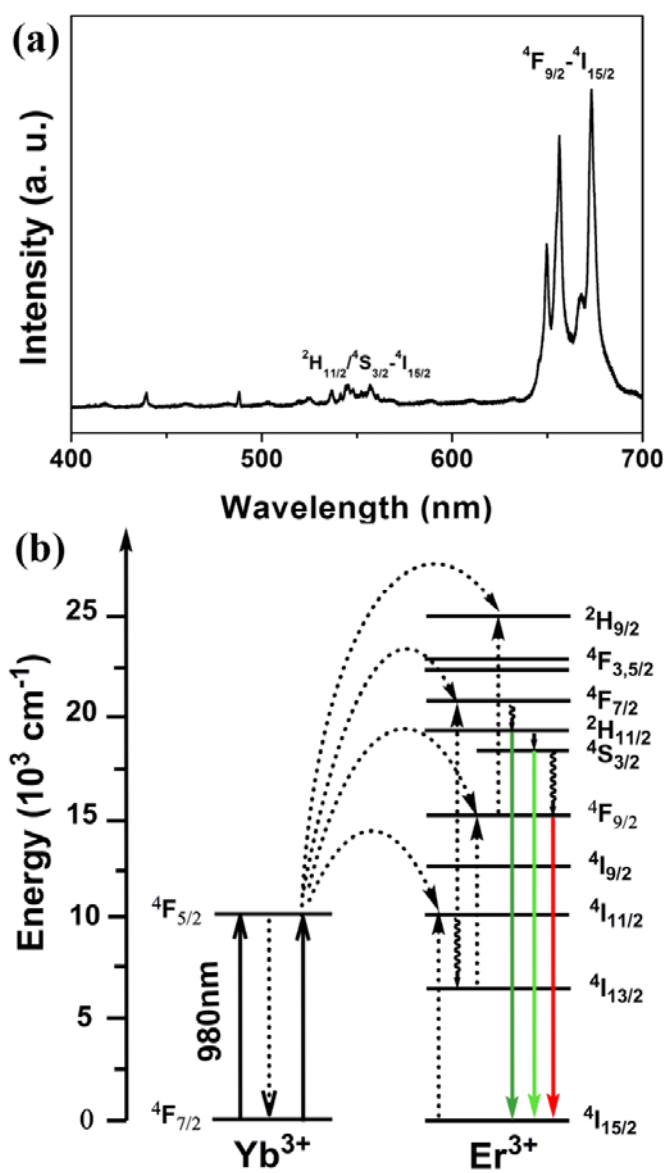
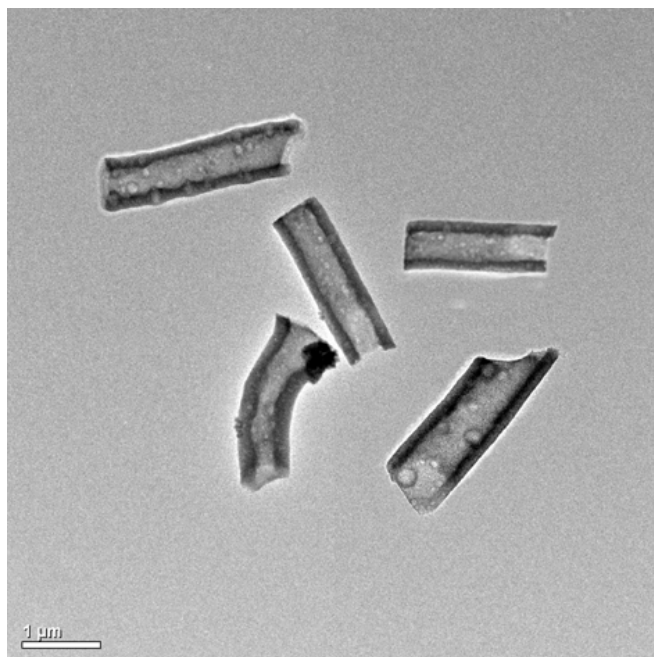


Figure S4 UC emission spectrum and UC mechanisms of the as-prepared MUCNCs@SNTs.



**Figure S5** TEM image of MUCNCs@SNTs fragments.