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Electronic Supplementary Information

Simple Fabrication of Single- and Multi-Layer Polymer Nanotubes by Spin-Casting Method Within Anodized Aluminum Oxide (AAO) Templates

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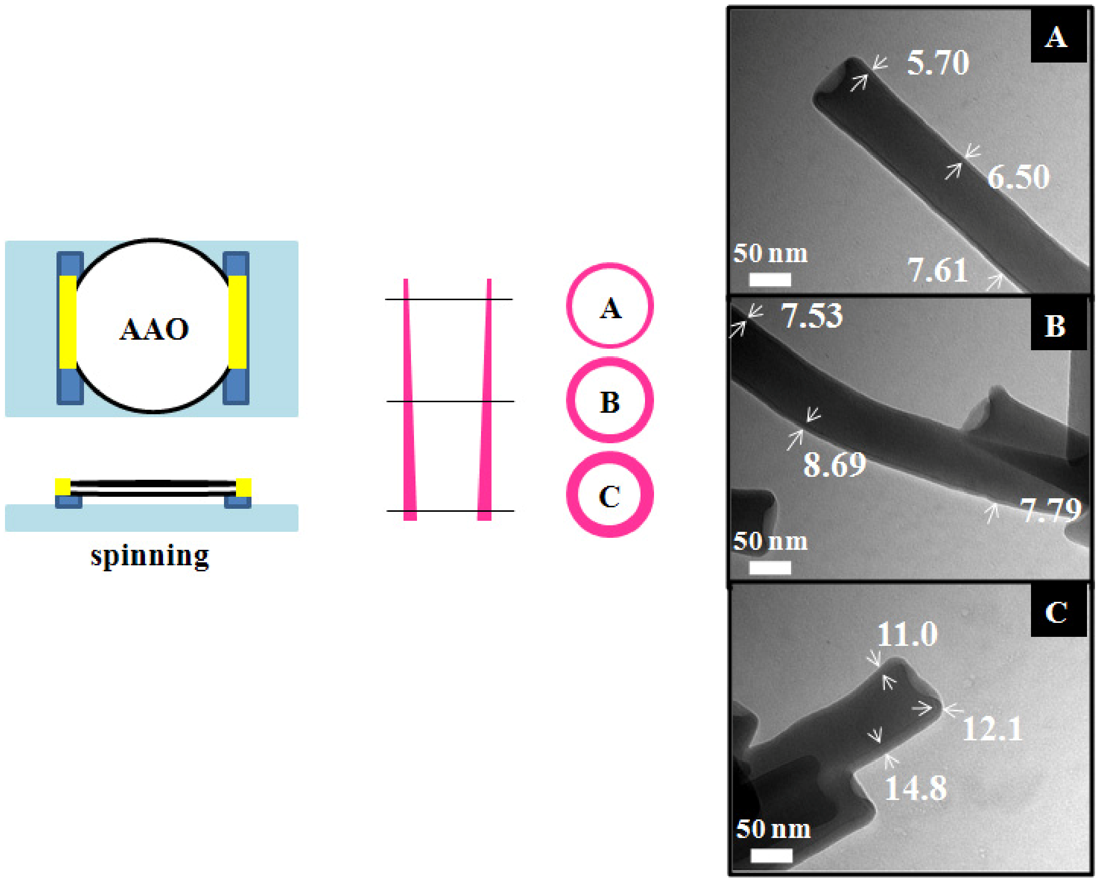

Figure S1. The AAO template was fixed on a glass substrate by applying double-sided adhesive tape on two side-edges, with the pore mouth surface facing upward. When a solvent was evaporated from the polymer solution filled in AAO nanochannels during spinning, the concentration of polymer solution gradually increased from the top to the bottom. Therefore, the wall thickness of PNTs gradually increased, implying that the difference between wall thicknesses in the top (A) and bottom (C) sections was 5~10 nm in the case of PS nanotubes prepared from AAO templates with 60 μm thickness and 10 wt% PS solution.

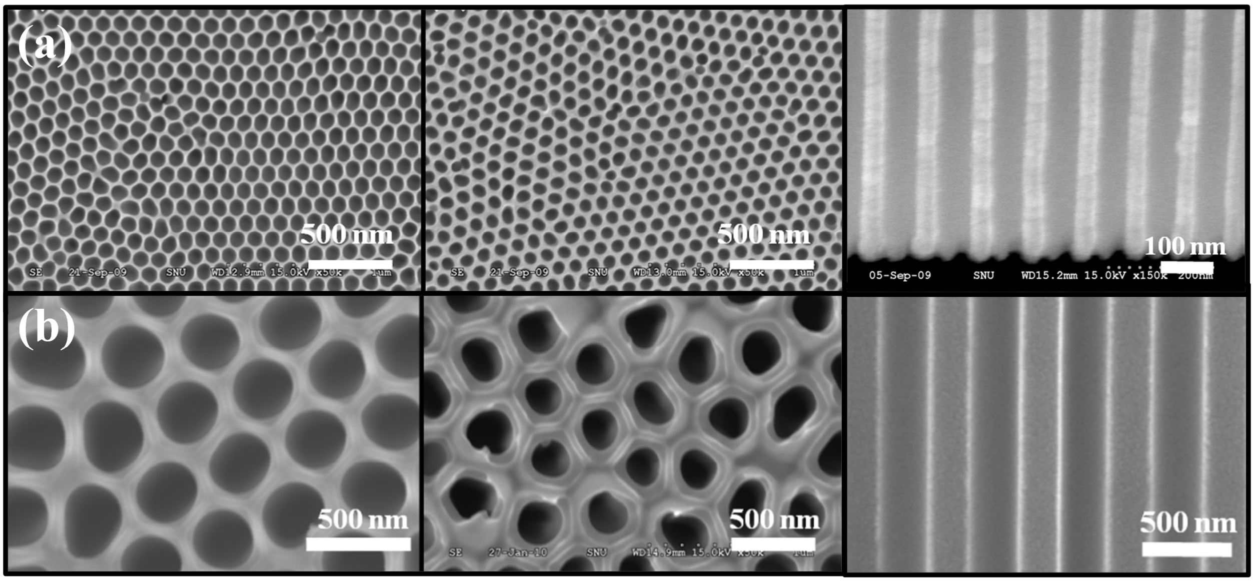

Figure S2. FE-SEM images of top and bottom sides- and cross-sectional area of AAO template with (a) small and (b) large pore diameters prepared from oxalic acid (40 V) and phosphoric acid (160 V) conditions, respectively.

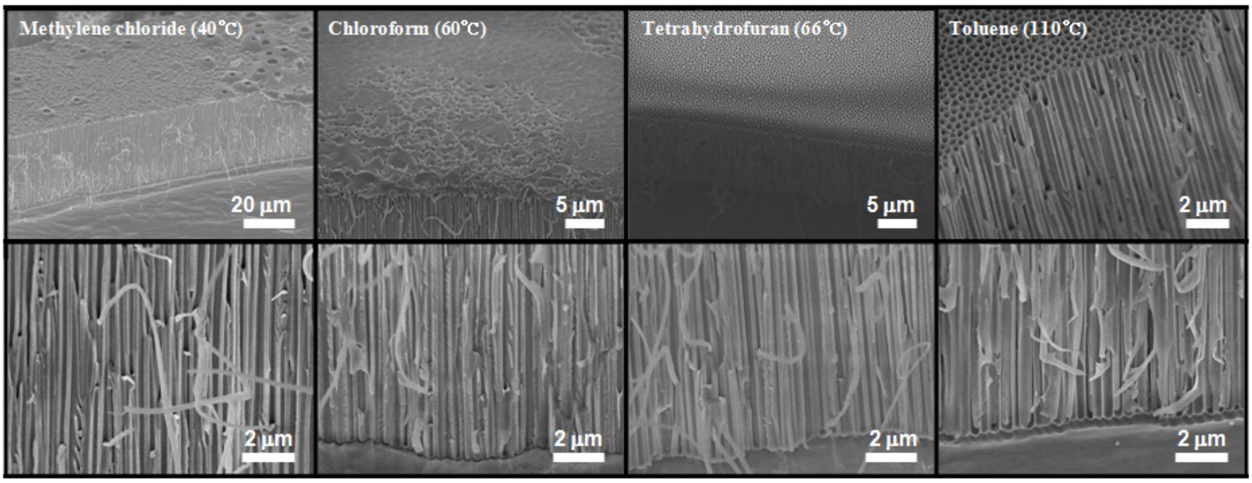

Figure S3. Solvent effect on fabrication of single-layer PS nanotubes into AAO template by spin-casting method. Thick coating layers of polymer on the surface were observed and uncontrollable PNTs were formed within AAO nanochannels in the cases of methylene chloride and chloroform.

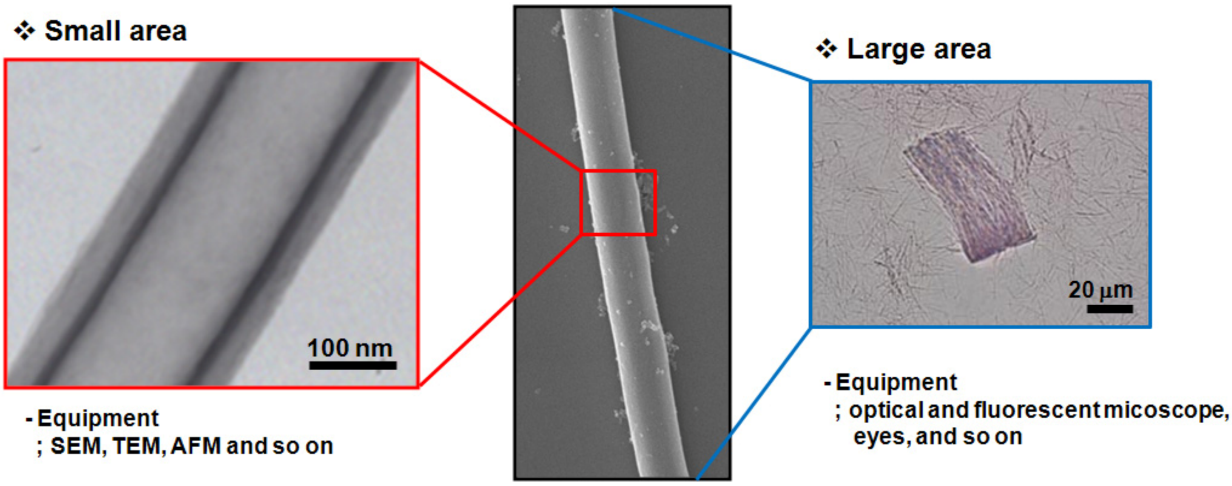

Figure S4. Various analytic methods used in our experiments to confirm the uniform fabrication of MPNTs

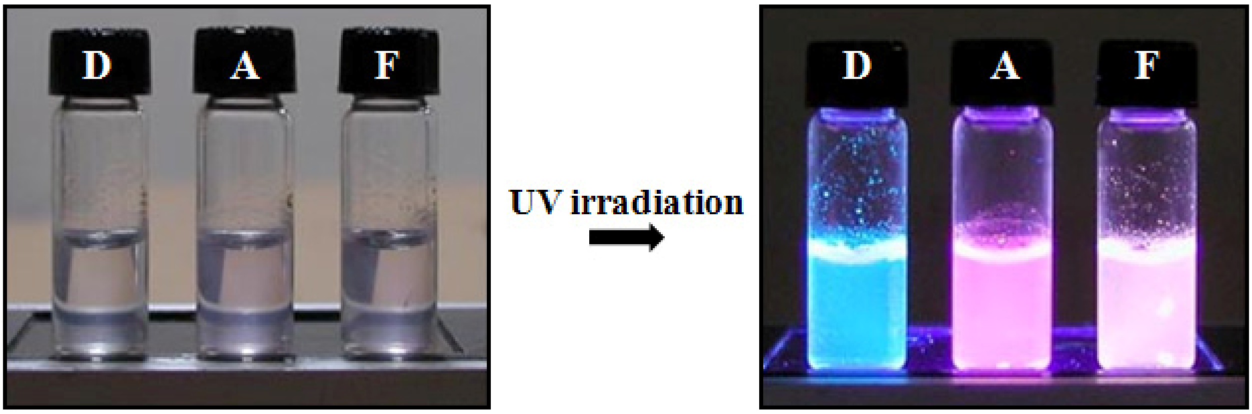

Figure S5. Water-dispersed MPNTs incorporated with donor (FIrpic) and acceptor (aRhB) generate characteristic emission color under UV irradiation; D; **[MPNT(FIrpic/S/Non)]** and A; **[MPNT(Non/S/aRhB)]** in water showed characteristic blue and orange emission colors, while F(D+A); **[MPNT(FIrpic/S/aRhB)]** showed a pink emission color.

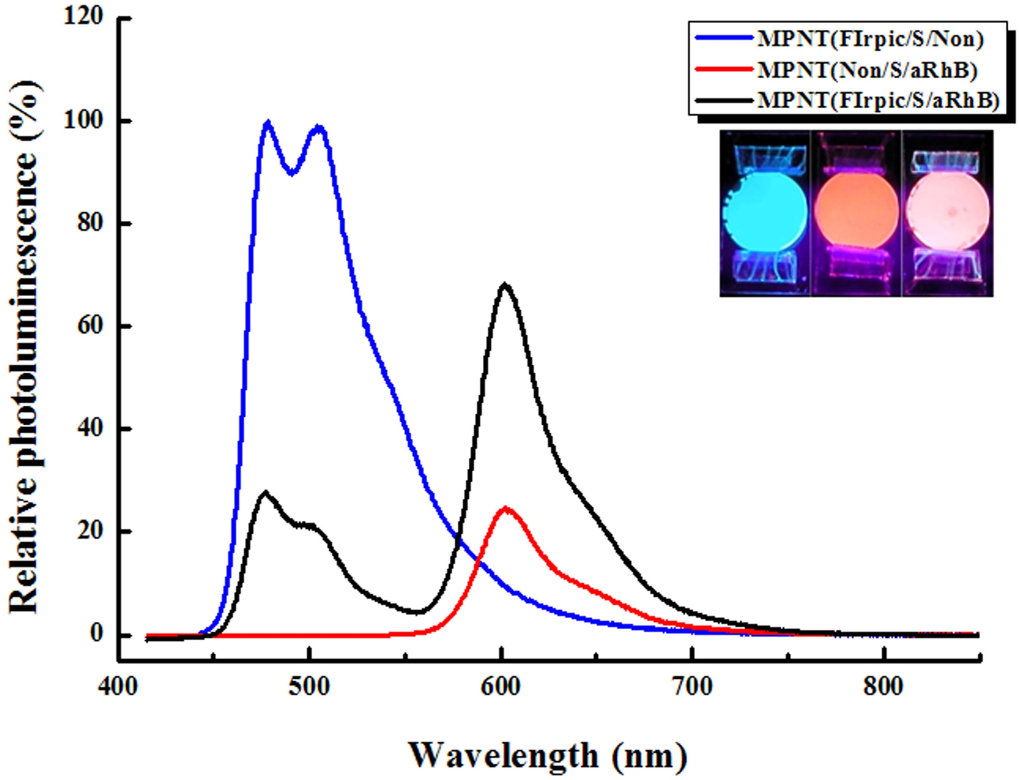

Figure S6. Photoluminescence (PL) spectra of FIrpic and aRhB incorporated in MPNTs, measured in the solid samples with AAO templates.

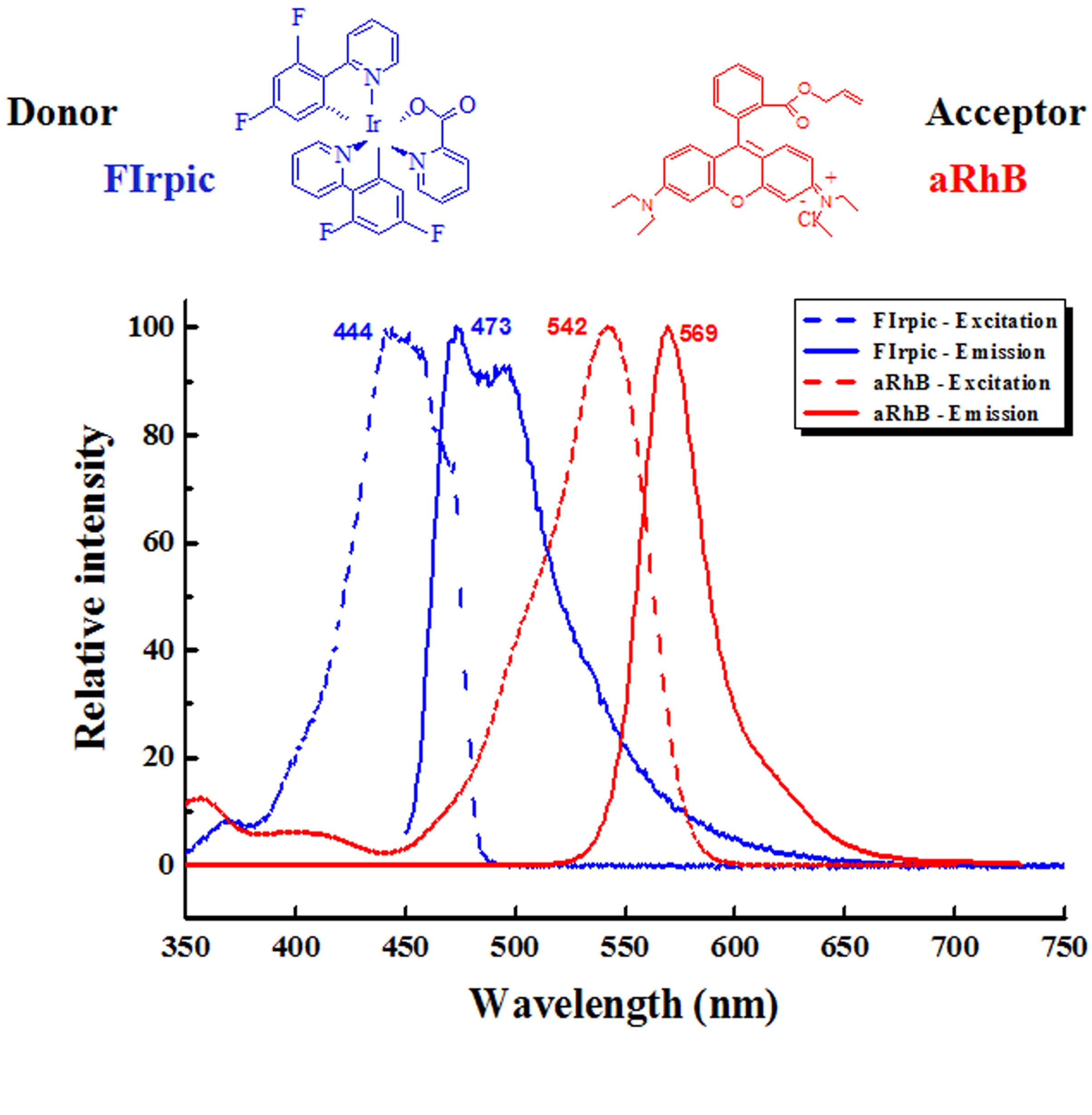

Figure S7. Excitation and PL spectra of donor and acceptor molecules. The effective spectral overlap between the emission band (the blue solid line) of FIrpic in toluene and the excitation band (red dashed line) of aRhB in THF, implies the possibility of efficient FRET.