Supporting Information

Core-shell TiO$_2$@C ultralong nanotubes with enhanced adsorption for antibiotics

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The Raman spectrum of TiO$_2$@C is shown in Fig. S1, there are five anatase phase TiO$_2$ feature peaks at 145, 198, 394, 514, 635 cm$^{-1}$, respectively. Moreover, the G band at ~1600 cm$^{-1}$ reflects the in-plane vibration of sp$^2$ carbon atoms, while the D band at ~1386 cm$^{-1}$ represents a defect induced Raman feature peak of carbon-based material, implying the non-perfect crystalline structure of the carbon shell. The peak intensity ratio between G band and D band (I_G/I_D) is 1.1796, indicating that carbon defect structure in the carbon structure is relatively small and the dominant component in the carbon structures is the sp$^2$.

Fig. S2 The N$_2$ adsorption-desorption isotherm of TiO$_2$ nanotubes, the BET Surface Area is 302.18 m$^2$ g$^{-1}$, and it is lower than TiO$_2$@C composite.
Fig. S3 The contact angles of (a) TiO$_2$ nanotube of 40.2° (b) and TiO$_2$@C of 11.4°

Fig. S4 XPS spectra of the TiO$_2$@C before and after the TC antibiotic adsorption.

Fig. S5 The chemical structure of TC, NFO and OFO

Reference: