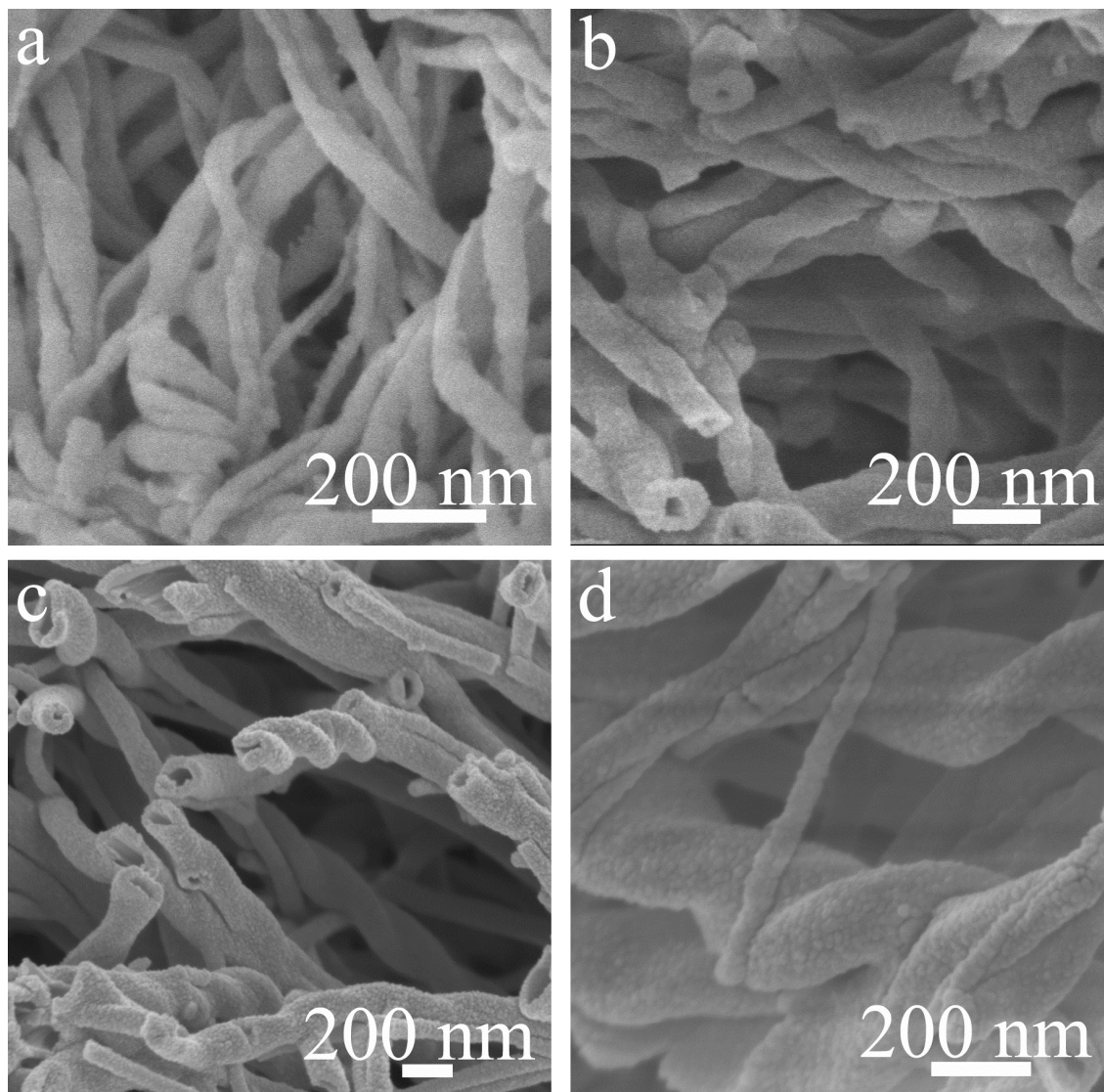


*Electronic Supplementary Information (ESI)*

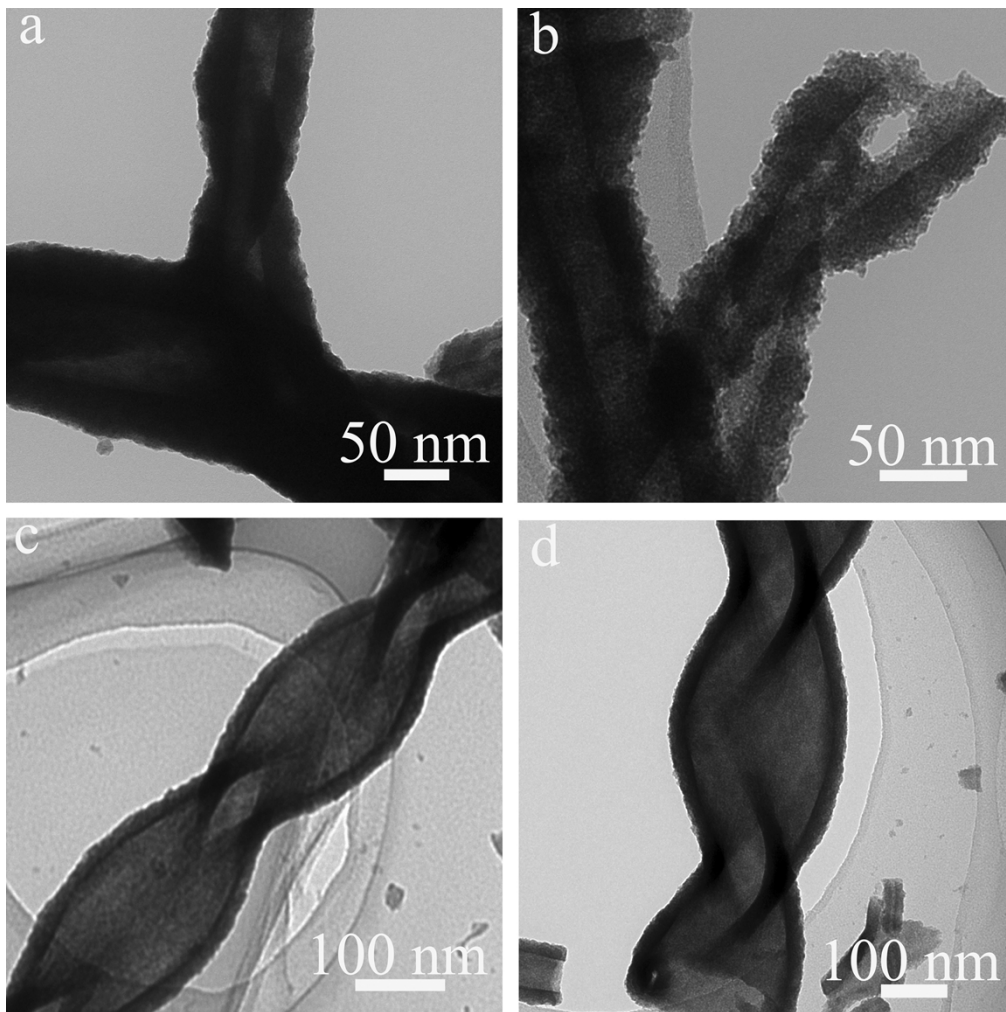
**Chiral defects on single-handed helical Ta<sub>2</sub>O<sub>5</sub> nanotubes prepared using a supramolecular templating approach**

Chuanyong Zhang, Yong Wang, Jiaming Qin, Baozong Li, Yi Li and Yonggang Yang\*

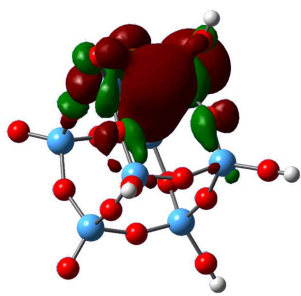
*Jiangsu Key Laboratory of Advanced Functional Polymer Design and Application, College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou 215123, P. R. China. E-mail: ygyang@suda.edu.cn; Fax: +86 6588 2052; Tel: +86 6588 0047*



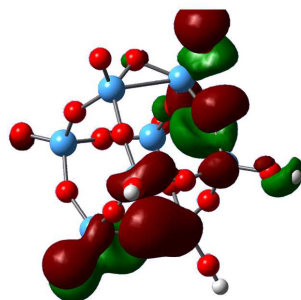
**Fig. S1** FESEM images of (a and c) Ta<sub>2</sub>O<sub>5</sub>-LL11 and (b and d) Ta<sub>2</sub>O<sub>5</sub>-DD11 before calcination.



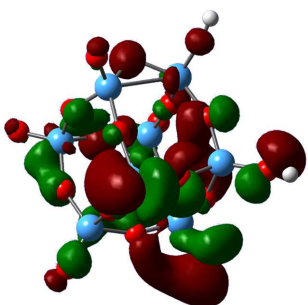
**Fig. S2** TEM images of (a and c) Ta<sub>2</sub>O<sub>5</sub>-LL11 and (b and d) Ta<sub>2</sub>O<sub>5</sub>-DD11 before calcination.



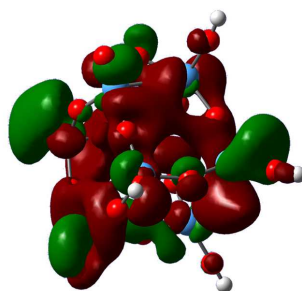
HOMO-1



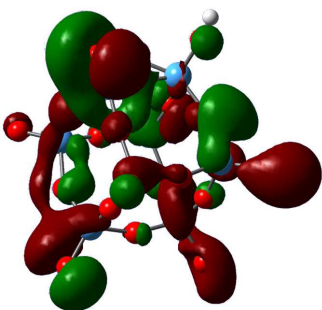
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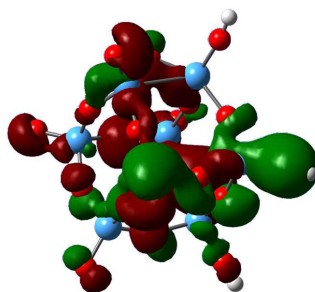
LUMO



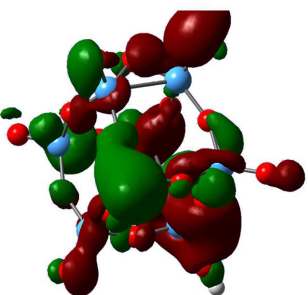
LUMO+3



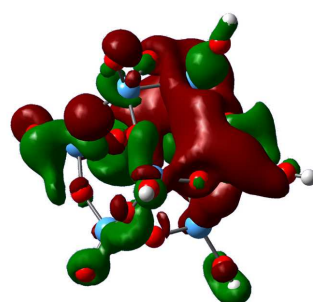
LUMO+4



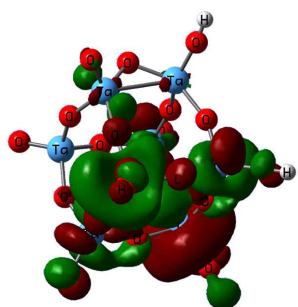
LUMO+5



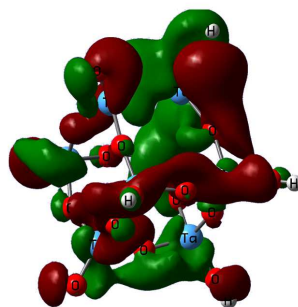
LUMO+6



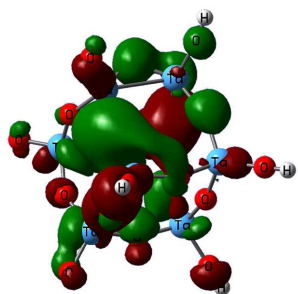
LUMO+8



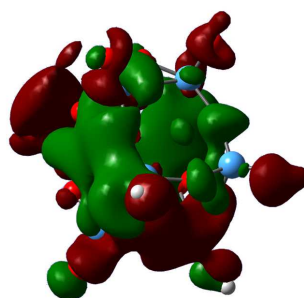
LUMO+9



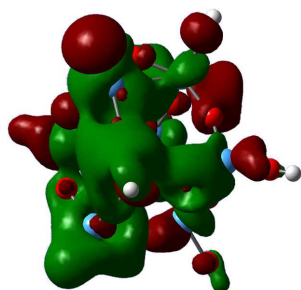
LUMO+11



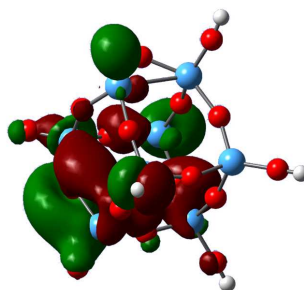
LUMO+13



LUMO+34

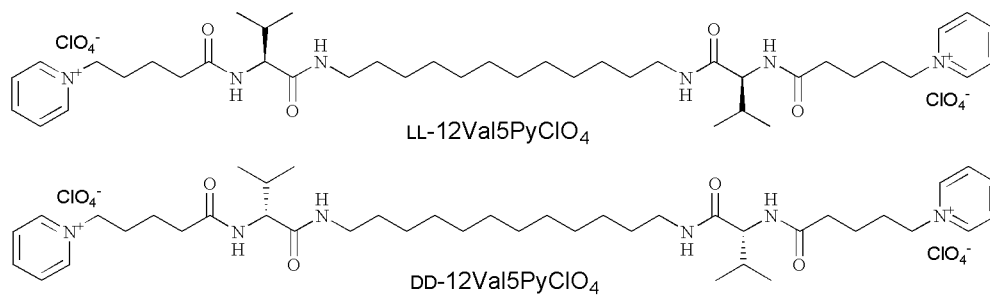


LUMO+36

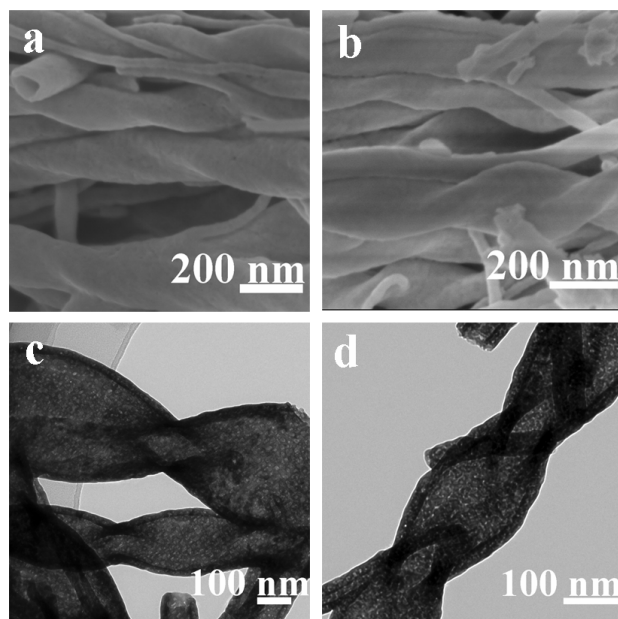


LUMO+38

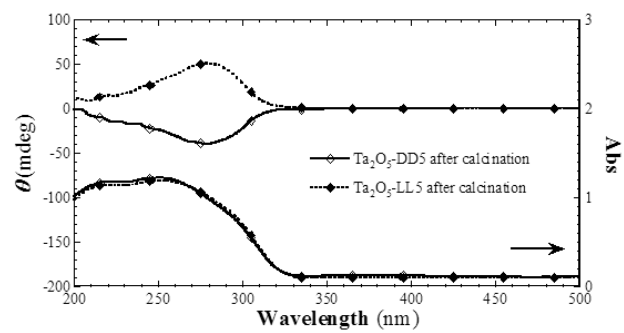
**Fig. S3** Views of the HOMOs and LUMOs.



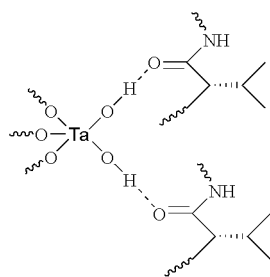
**Fig. S4** Molecular structures of LL- and DD-12Val5PyClO<sub>4</sub>.



**Fig. S5** (a) FESEM and (c) TEM images the right-handed helical  $\text{Ta}_2\text{O}_5$  nanotubes prepared using LL-12Val5PyClO<sub>4</sub>; and (b) FESEM and (d) TEM images the left-handed helical  $\text{Ta}_2\text{O}_5$  nanotubes prepared using DD-12Val5PyClO<sub>4</sub>.

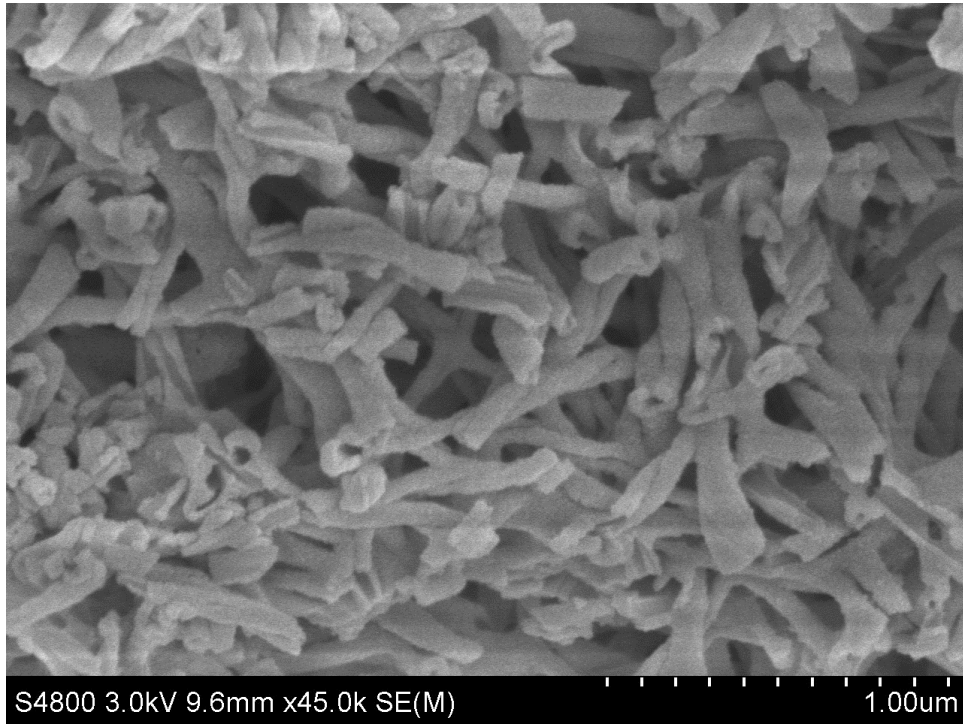


**Fig. S6** DRCD and DRUV-vis spectra of Ta<sub>2</sub>O<sub>5</sub>-LL5 and Ta<sub>2</sub>O<sub>5</sub>-DD5 after calcination.

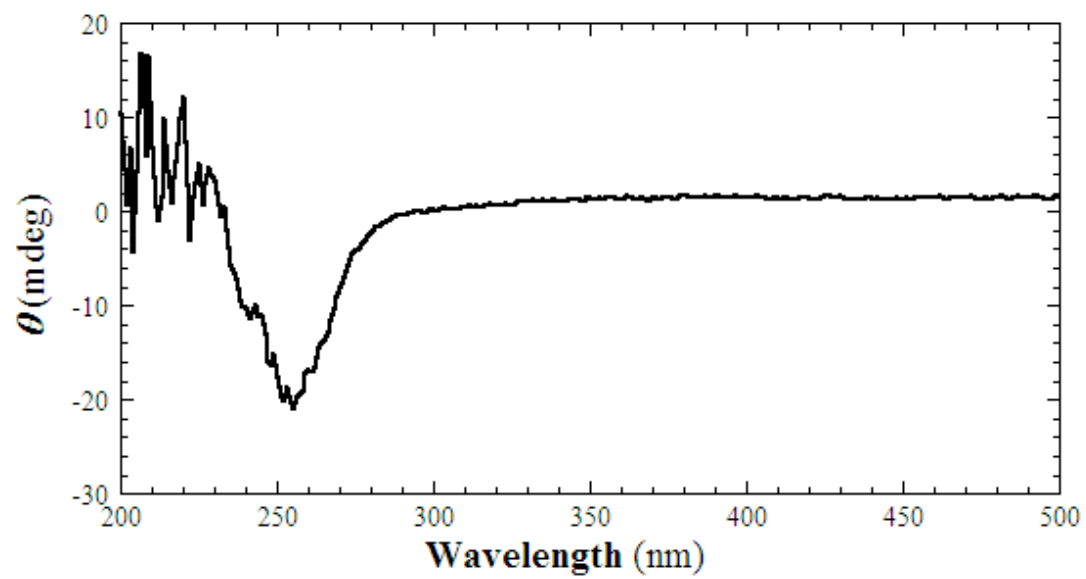


**Fig. S7** Proposed structure of the formation of a chiral point defect.





**Fig. S8** FESEM image of Ta<sub>2</sub>O<sub>5</sub>-LL11 after acid treatment.



**Fig. S9** DRCD spectrum of Ta<sub>2</sub>O<sub>5</sub>-LL11 after acid treatment.