

Enhanced adsorption capacity of ultralong hydrogen titanate nanobelts for antibiotics

Wenyao Li,^{a,e} Jingru Wang,^a Guanjie He,^b Li Yu,^c Nuruzzaman Noor,^d Yangang Sun,^a Xiyang Zhou,^{*a} Junqing Hu^{*e} and Ivan P. Parkin^{*b}

^a *School of material engineering, Shanghai university of engineering science, Shanghai 201620, China.*

^b *Materials Chemistry Centre, Department of Chemistry, University College London, 20 Gordon Street, London WC1H 0AJ, U. K.*

^c *Shenzhen Key Laboratory of Laser Engineering, Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Optoelectronic Engineering, Shenzhen University, Shenzhen 518060, China*

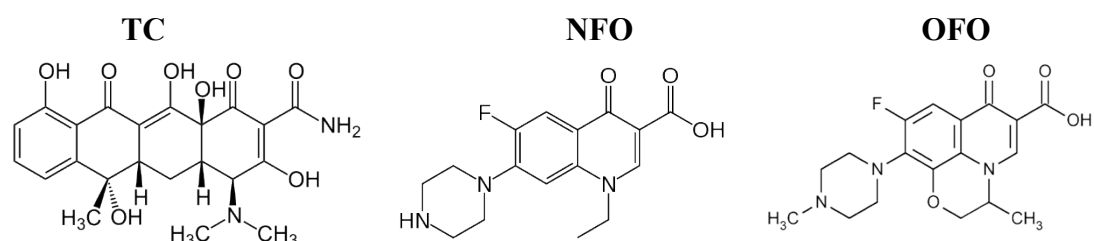
^d *Institute of Textiles and Clothing Q Core, 7/F The Hong Kong Polytechnic University Hunghom, Kowloon, Hong Kong*

^e *State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China.*

E-mail: zhouxiyang@sues.edu.cn; hu.junqing@dhu.edu.cn; i.p.parkin@ucl.ac.uk

Raw materials: Titanium tetrachloride (TiCl₄, Sinopharm Chemical Reagent Co., Ltd.), Sodium hydroxide (NaOH, Ourchem), Nitric acid (HNO₃, Ourchem), deionized water. Tetracycline (TC, Macklin), norfloxacin (NFO, Aladdin) and ofloxacin (OFO, Aladdin) were selected as the representative of pharmaceuticals pollutions for adsorption experiments, which were both analytical grade (purity>98%). Stock solution of TC, OFO and NFO were prepared with deionized water and stored in the dark at 4 °C.

The chemical structure of TC, NFO and OFO are as follow:



Tab. S1 Binding Energy and Relative Content of O in UHTNs after adsorption

Valence state	sample	Proposed components	Binding energy (eV)	Relative content (%)
O 1s	TC-load UHTNs	Ti-O	529.9	58.33
		C-O	530.5	26.1
		H-O	531.6	15.57

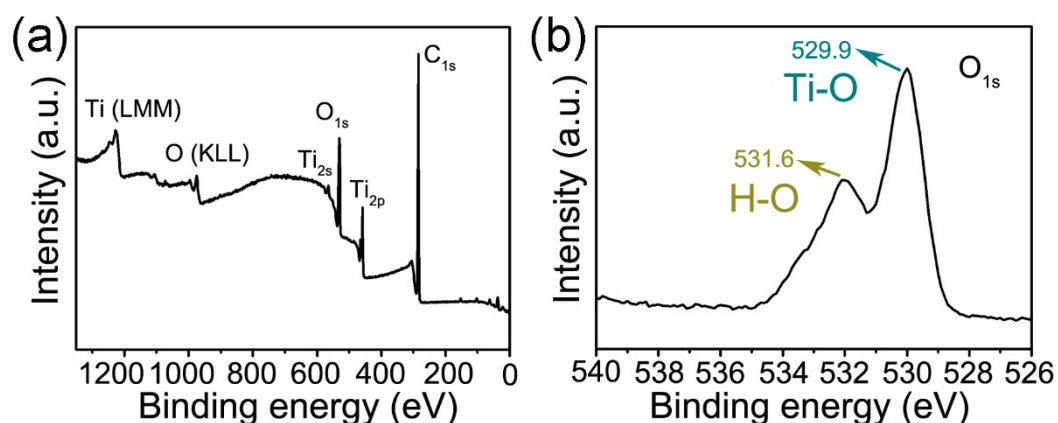


Fig. S1 (a) XPS wide-scan spectrum and (b) high resolution XPS spectra of O 1s of UHTNs.