Electronic Supplementary Material (ESI) for Nanoscale Advances.
This journal is © The Royal Society of Chemistry 2018

Supplement material

In Situ Formation of Defect-engineered N-doped TiO_2 Porous Mesocrystal for Enhanced Photo-Degradation and PEC Performance

Xiaolan Kang, Xue-Zhi Song, Sihang Liu, Mingzhu Pei, Wen Wen, Zhenquan Tan*

School of Petroleum and Chemical Engineering, Dalian University of Technology, Panjin 124221, P. R. China.

Correspondence and requests for materials should be addressed to: Z.T. (email: tanzq@dlut.edu.cn)

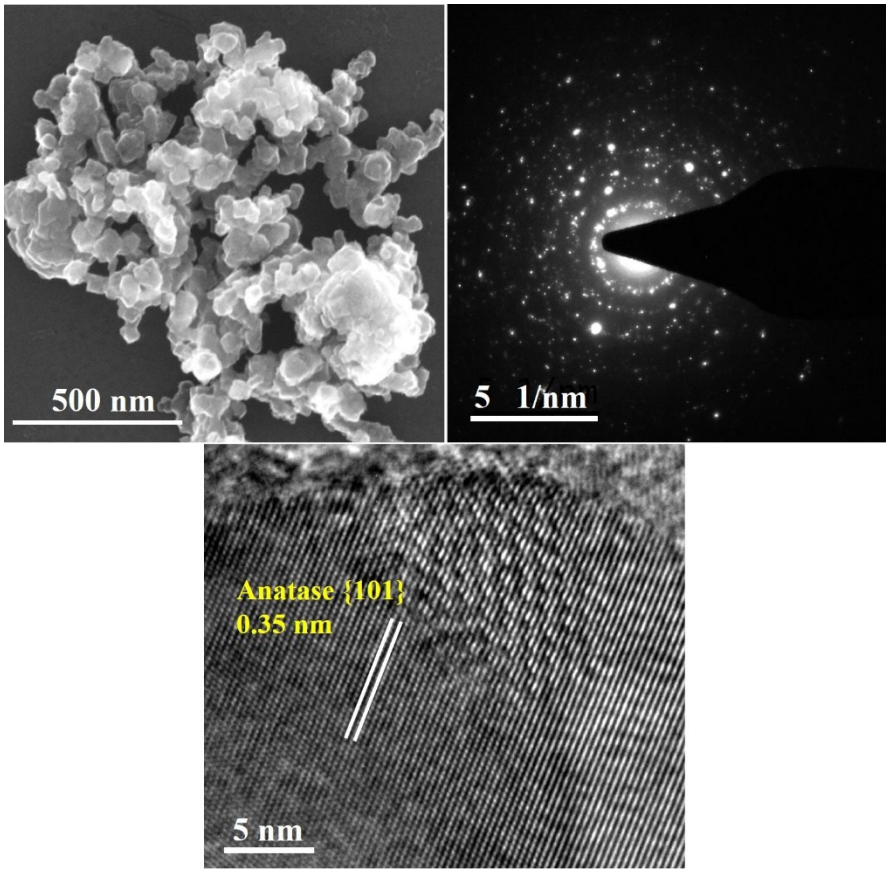

Fig. S1 (a) SEM, (b) SAED patterns and (c) HRTEM of unreduced TiO_2

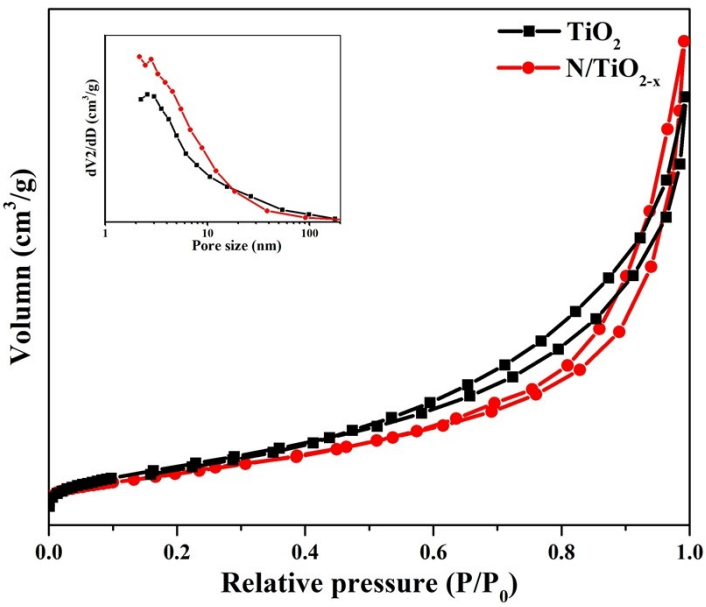

Fig. S2 N_2 adsorption-desorption curve and the corresponding pore size distribution (insert) of TiO_2 and N/TiO_{2-x}.

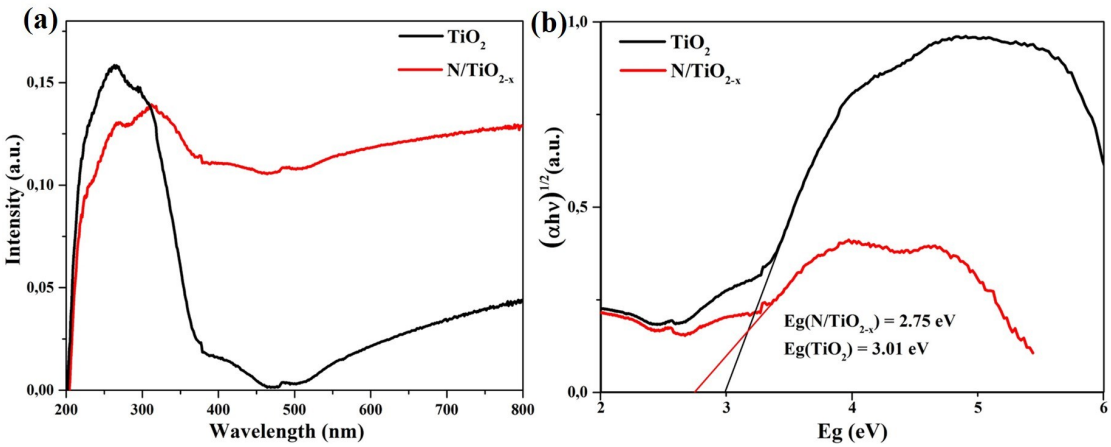

Fig. S3 (a) The UV-vis diffuses reflectance spectra and (b) Kubelka-Munk plot of the as-prepared samples.

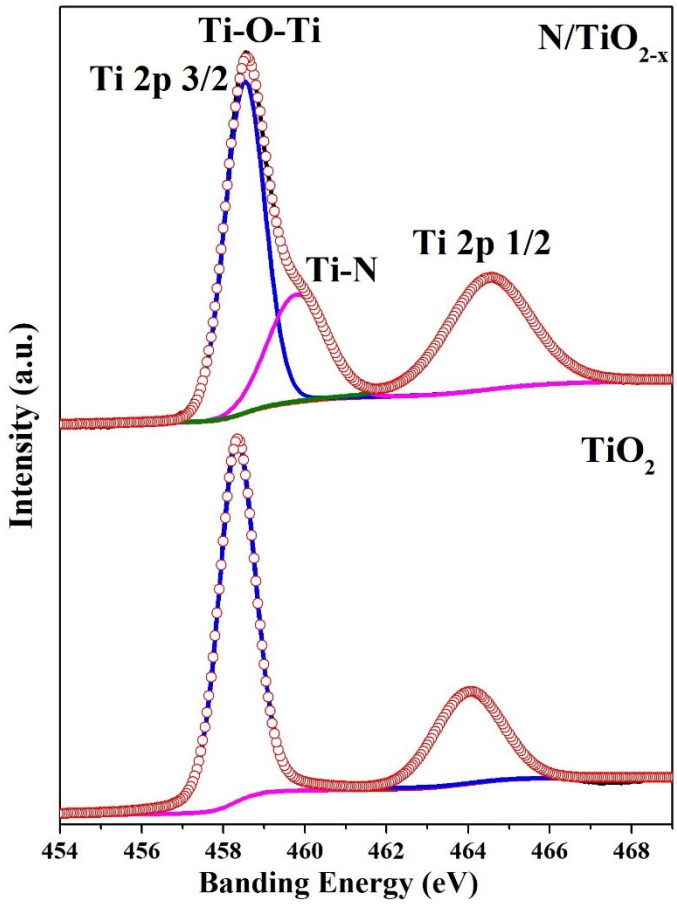

Fig. S4 Ti 2p XPS spectra and fitted data of the as-obtained samples

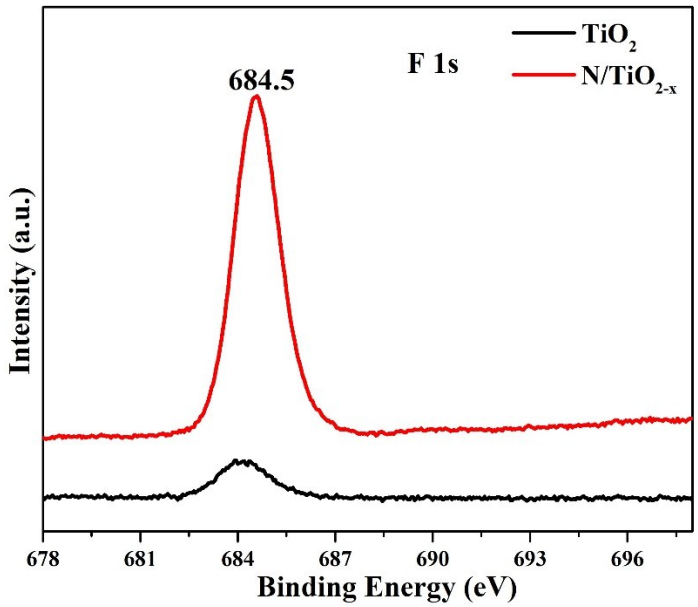

Fig. S5. F 1s XPS spectra and fitted data of the as-obtained samples

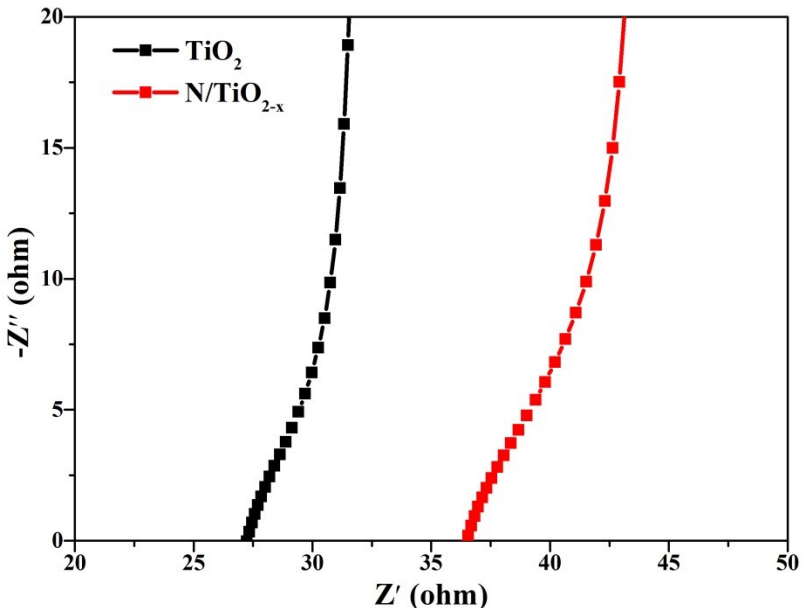

Fig. S6 The Nyquist plots of electrochemical impedance of N/TiO_{2-x} and unreduced TiO_2 samples under visible light illumination

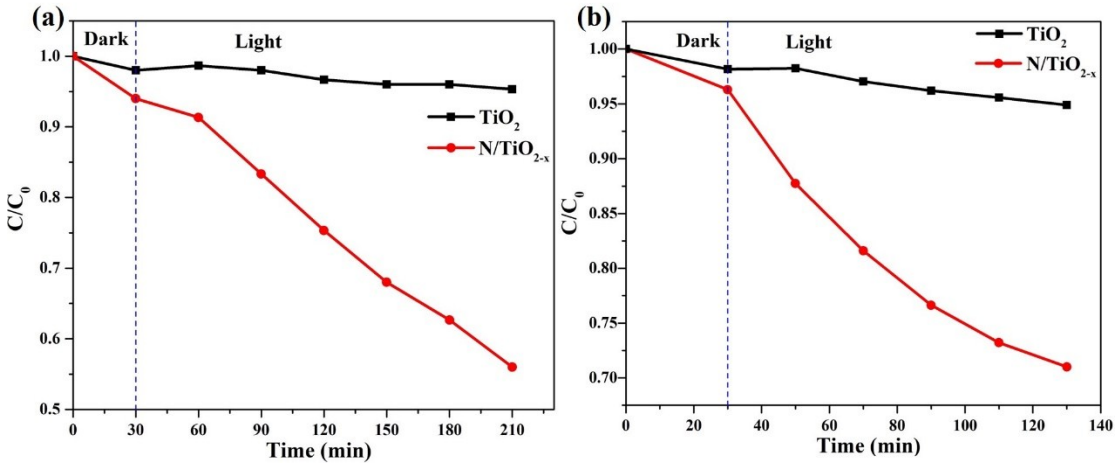

Fig. S7 (a) The photodegradation of Cr^{6+} and (b) phenol under visible light irradiation.

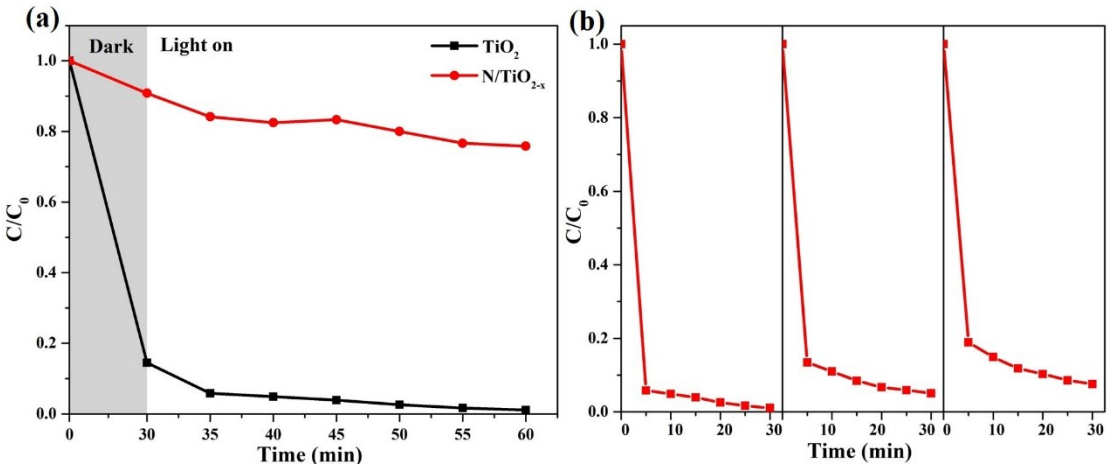

Fig. S8 (a) The photodegradation of RhB and (b) Recycling tests of N/TiO_{2-x} under visible light irradiation.

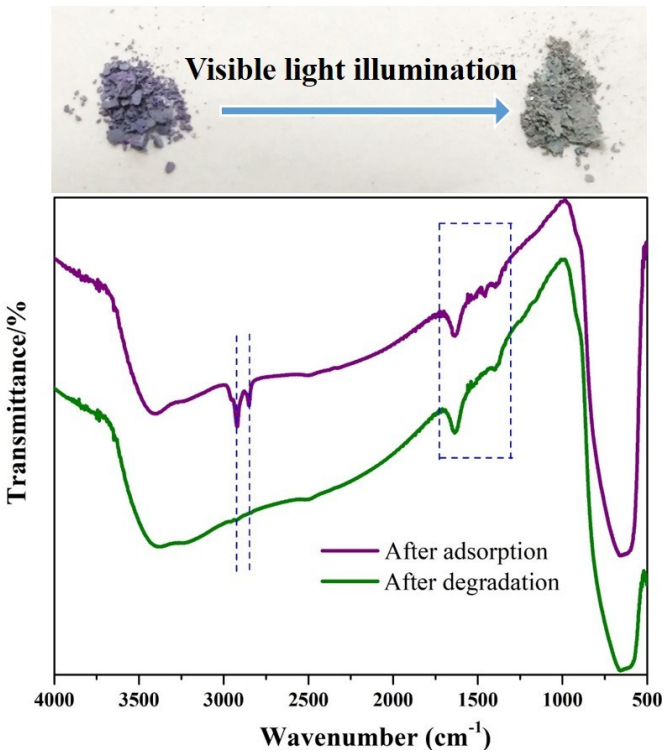

Fig. S9 FTIR spectra and the corresponding digital image of as prepared N/TiO_{2-x} sample after dark absorption for 30 min and reacting for 30 min under visible light.