

Red Phosphorus Embedded in TiO₂/C Nanofibers to Enhance Potassium-Ion Storage Performance

Die Su ^a, Jing Dai ^a, Min Yang ^a, Jiaying Wen ^a, Jianpin Yang ^a, Wen Liu ^a, Hai Hu ^a,

Li Liu ^{a, b*}, Yan Feng ^{c*}

^a National Base for International Science & Technology Cooperation, National Local Joint Engineering Laboratory for Key materials of New Energy Storage Battery, Hunan Province Key Laboratory of Electrochemical Energy Storage and Conversion, School of Chemistry, Xiangtan University, Xiangtan 411105, China

^b Hunan Joint International Laboratory of Advanced Materials and Technology for Clean Energy, Changsha 410000, China

^c Tianjin Key Laboratory of Structure and Performance for Functional Molecules, College of Chemistry, Tianjin Normal University, Tianjin 300387, China

* *corresponding authors* : liulili1203@126.com (L. Liu) hxyfy@mail.tjnu.edu.cn (Yan Feng)

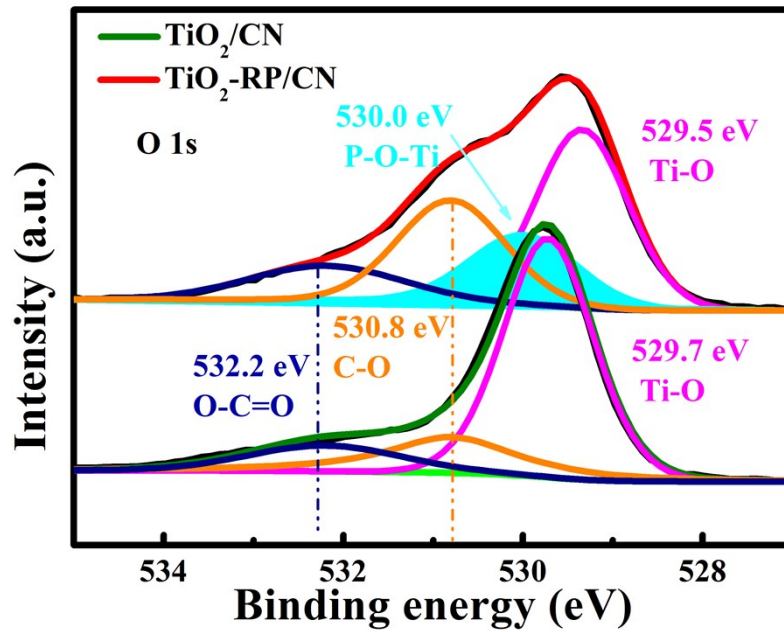


Figure S1 high resolution spectra of O 1s of TiO₂/CN and TiO₂-RP/CN.

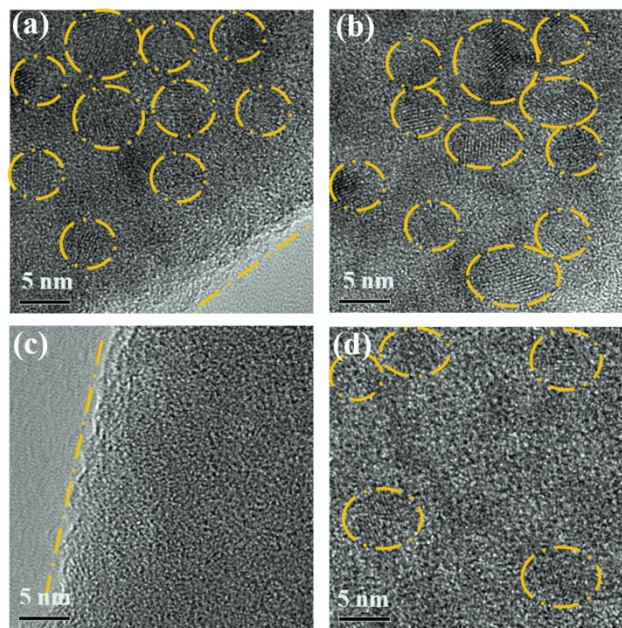


Figure S2 The HRTEM images of TiO₂/CN: (a) nanofiber outer edge, (b) nanofiber center section; The HRTEM images of TiO₂-RP/CN: (c) nanofiber outer edge, (d) nanofiber center section.

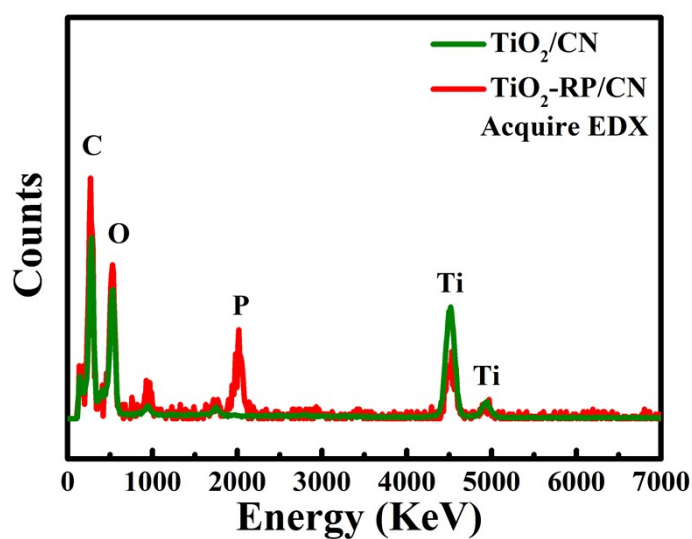


Figure S3 The EDX of TiO_2/CN and $\text{TiO}_2\text{-RP}/\text{CN}$ from TEM result, the insert section is the quantification results.

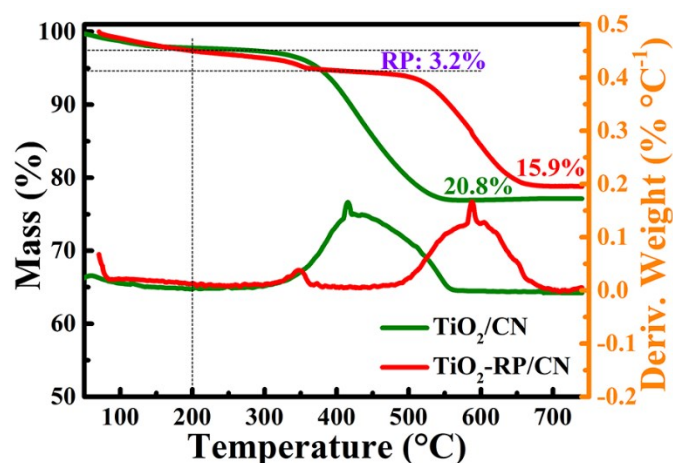


Figure S4 The TG curves of the TiO_2/CN and $\text{TiO}_2\text{-RP}/\text{CN}$ at $20\text{ }^\circ\text{C}/\text{min}$ in Air.

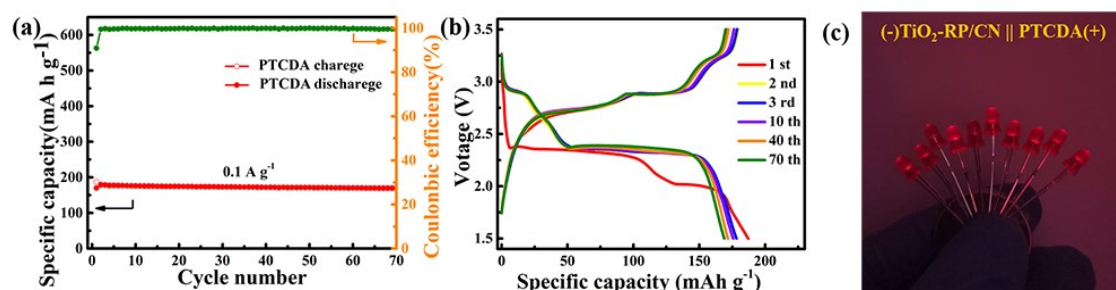


Figure S5 (a) The cycling performance and (b) corresponding charge/discharge curves of PTCDA electrode at 0.1 A g^{-1} in K-metal half-cell, (c) the (-) $\text{TiO}_2\text{-RP}/\text{CN} \parallel \text{PTCDA}$

(+) full cell: digital photo that sparkles 10 LEDs.