

Revealing the Synergy of Mono/Bimetallic PdPt/TiO₂ Heterostructure for Enhanced Photoresponse Performance

Jun Li^{†,¶}, Chang-Hai Liu^{‡,§,¶}, Mohammad Norouzi Banis[¶], Daniel Vaccarello[†], Zhi-Feng Ding[†],

Sui-Dong Wang^{,§} and Tsun-Kong Sham^{*,†,¶}*

[†]Department of Chemistry and [¶]Soochow University-Western University Joint Centre for
Synchrotron Radiation Research, University of Western Ontario, 1151 Richmond Street,
London, Ontario N6A 5B7, Canada

[‡]School of Material Science & Engineering, Jiangsu Collaborative Innovation Center of
Photovoltaic Science and Engineering, Changzhou University, Changzhou, Jiangsu 213164, PR
China

[§]Soochow University-Western University Joint Centre for Synchrotron Radiation Research,
Institute of Functional Nano & Soft Materials (FUNSOM), Soochow University, Suzhou, Jiangsu
215123, PR China

¶ J. Li and C. H. Liu contributed equally to this work

*Corresponding email: wangsd@suda.edu.cn; tsham@uwo.ca

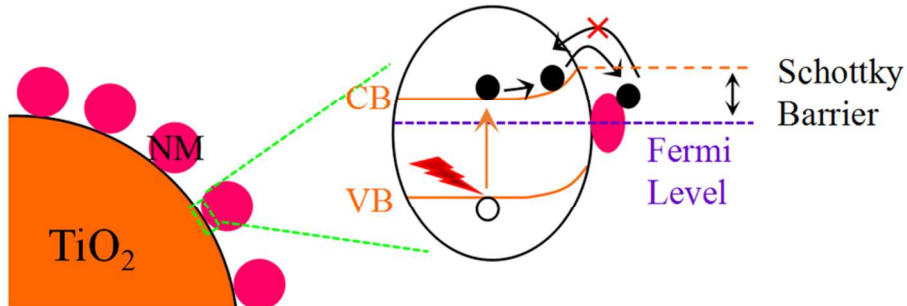


Figure S1. Schematic illustration of noble metal (NM)/TiO₂ heterojunction as well as the electron transfer upon excitation.

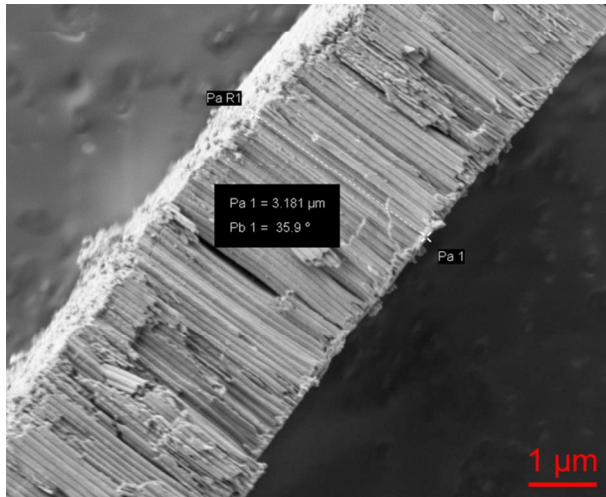


Figure S2. SEM cross section view of TiO₂ NTs.

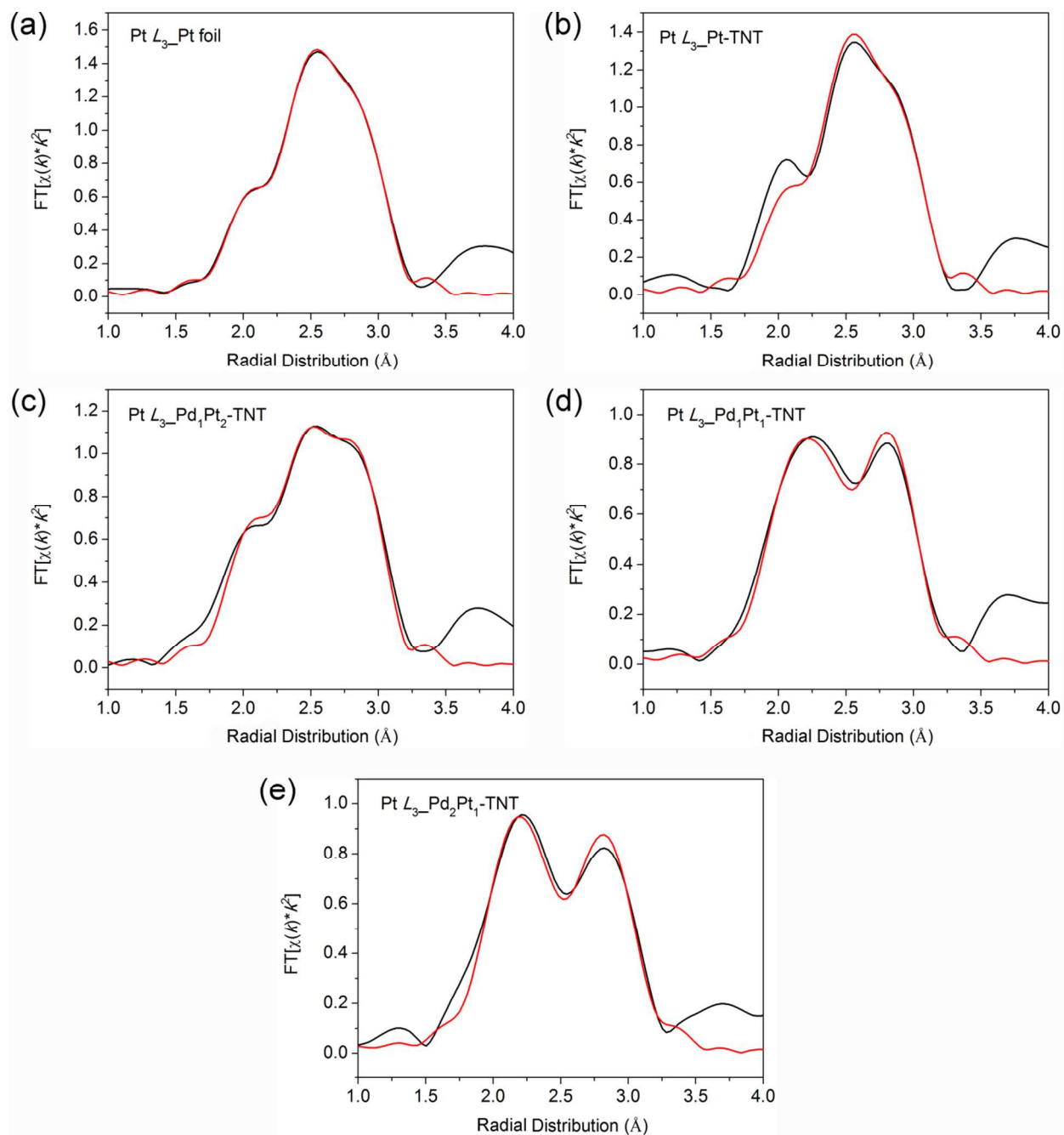


Figure S3. The first shell EXAFS fitting between 1.6 and 3.3 Å at the Pt L_3 -edge of (a) Pt foil, (b) Pt-TNT, (c) Pd₁Pt₂-TNT, (d) Pd₁Pt₁-TNT and (e) Pd₂Pt₁-TNT. Of which the black and red lines are experimental and associated fitting data, respectively.

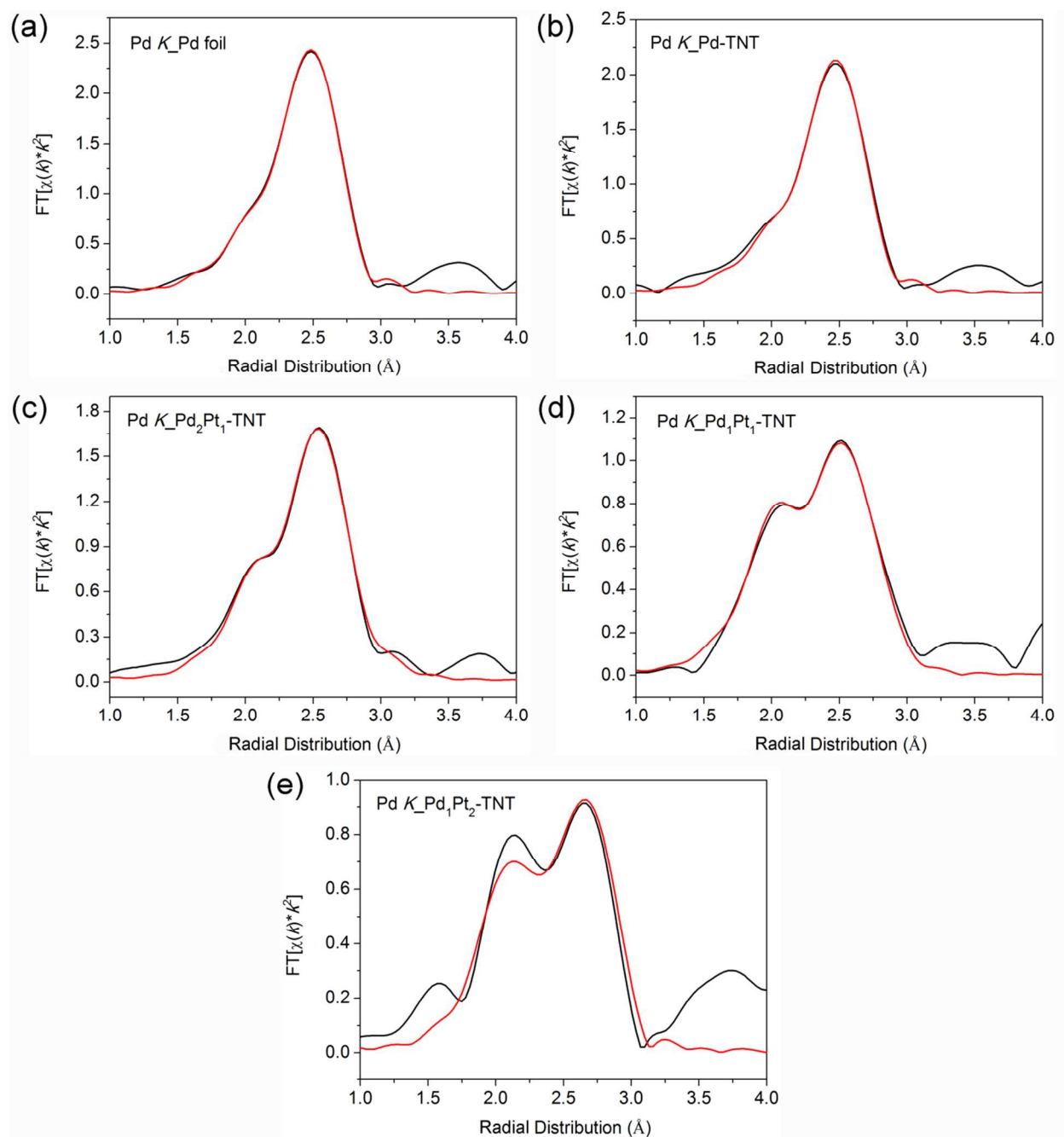


Figure S4. The first shell EXAFS fitting between 1.6 and 3.2 Å at the Pd K-edge of (a) Pd foil, (b) Pd-TNT, (c) Pd₂Pt₁-TNT, (d) Pd₁Pt₁-TNT and (e) Pd₁Pt₂-TNT. Of which the black and red lines are experimental and associated fitting data, respectively.