Electronic Supplementary Information

Pd-Au heterostructured nanonecklaces with adjustable interval and size as superior catalyst in degradation of 4-nitrophenol

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Figure S1. TEM images of Te nanowires in different magnification.



Figure S2. EDS of Au-Pd heterostructured nanonecklaces.



Figure S3. XRD of Au-Pd heterostructured nanonecklaces.



Figure S4. UV-vis spectra of Au-Pd heterostructured nanonecklaces.



Figure S5. XPS of Au-Pd heterostructured nanonecklaces. (A) Au 4f region; (B) Pd 3d region.



Figure S6. TEM images of Au-Pd heterostructured nanonecklaces synthesized by different amount of AA. A-G: 20, 40, 60, 80, 100, 120 and 140 mM, 350 uL; HAuCl₄: 5 mM, 200 uL. (Scale bars: 100 nm)



Figure S7. TEM images of Au-Pd heterostructured nanonecklaces synthesized using AA (5 mM, 200 uL) and HAuCl₄ (5 mM, 50 uL) (A) and adding additional AA (5 mM, 200 uL) and HAuCl₄ (5 mM, 100 uL) in A sample (B). (Scale bars: 100 nm)



Figure S8. Plots of C_t/C_0 and $ln(C_t/C_0)$ versus reaction time for the reduction of 4-NP over APHNs (A-G), the mixture of Pd nanowires and Au nanoparticles (H).



Figure S9. TEM images of Pd nanowires (A) and Au nanoparticles (B). (Scale bars:

100 nm)