

Plasmonic Core-Shell Ionic Microgels for Photo-Tuning Catalytic Applications

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Supplementary Figures

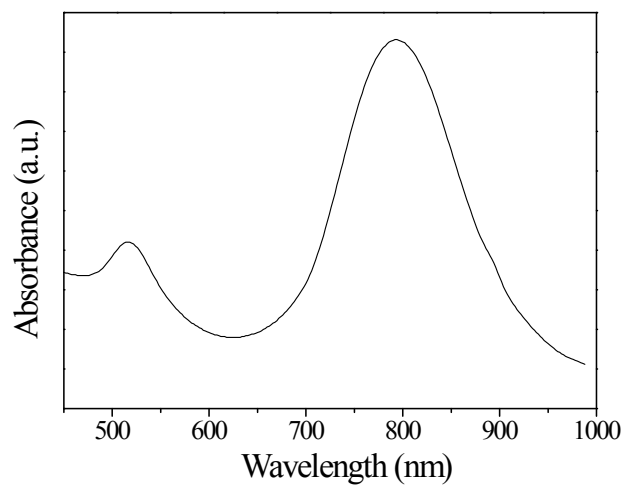


Figure S1. UV-Vis spectra of Au nanorods.

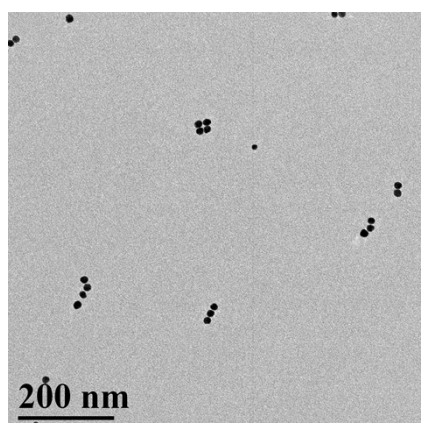


Figure S2. TEM image of Au nanoparticles.

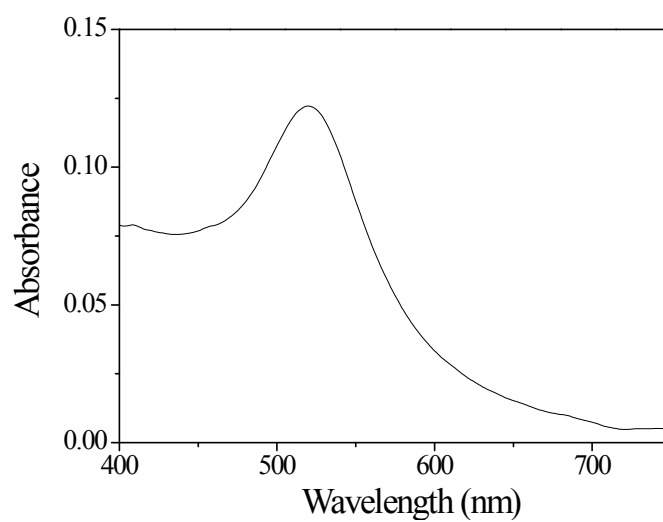


Figure S3. UV-Vis spectra of Au nanoparticles.

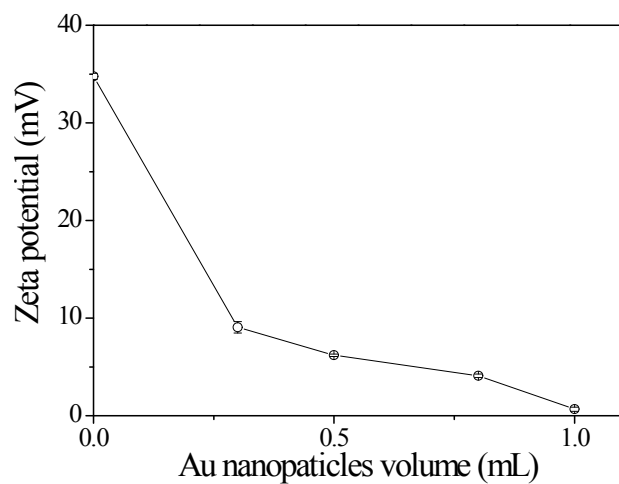


Figure S4. Zeta potential of Au NRs@PNV (200 μL) with the addition of Au nanoparticles.

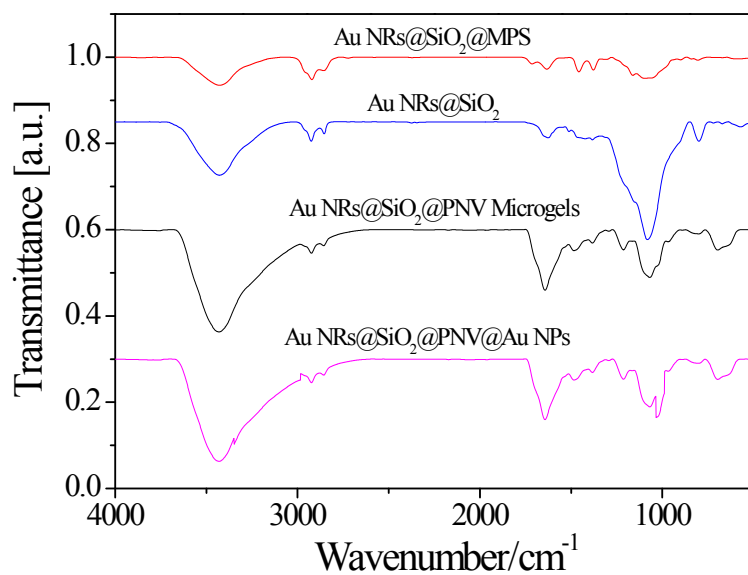


Figure S5. FTIR spectra of AuNRs@SiO₂, AuNRs@SiO₂@MPS, AuNRs@SiO₂@PNV microgels and AuNRs@SiO₂@PNV@Au NPs.

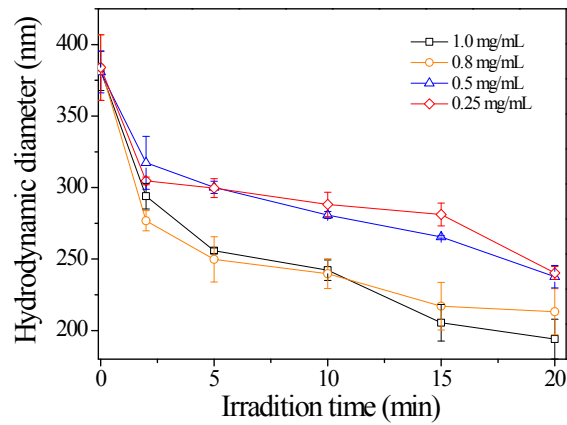


Figure S6. Variation of hydrodynamic diameter of Au NRs@PNV microgels with different concentrations as a function of NIR laser.

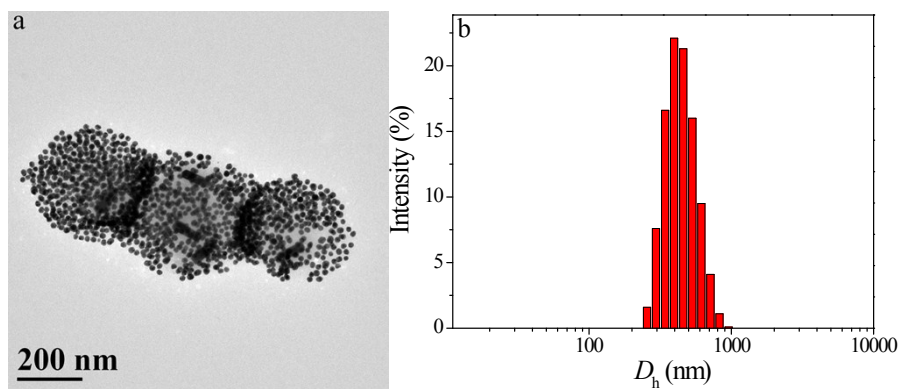


Figure S7. TEM image (a) and hydrodynamic diameter (b) of the nanocomposites after being irradiated.

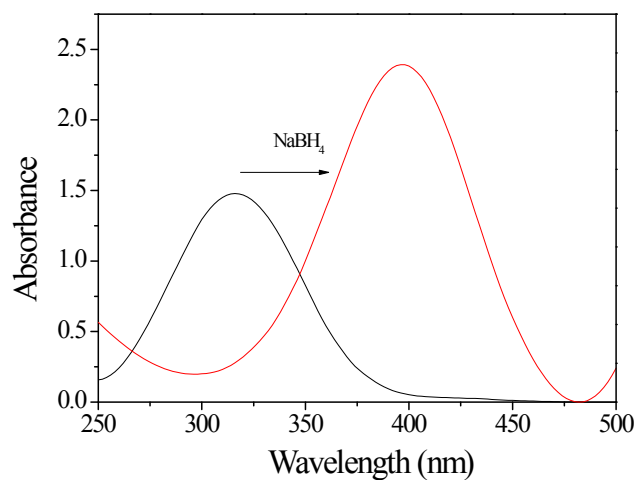


Figure S8. UV-Vis spectra of 4-NP before and after adding NaBH_4 aqueous solution.

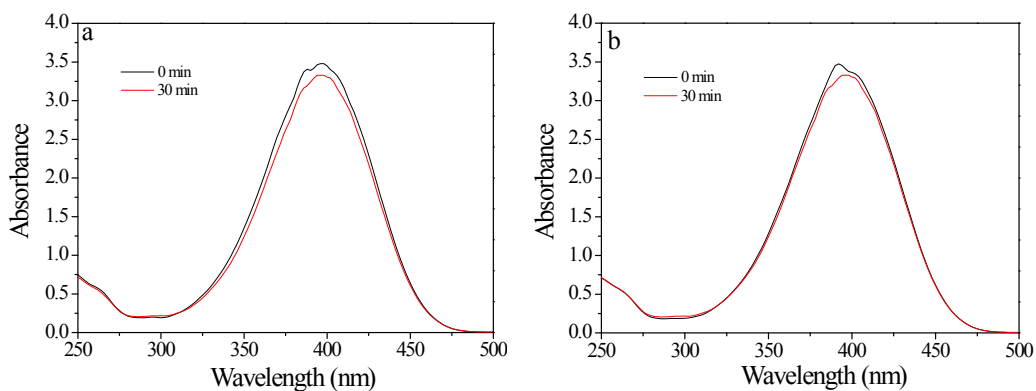


Figure S9. Time-dependent UV-Vis absorption spectra for the reduction of 4-NP with NaBH_4 in the presence of laser irradiation (a) and Au NRs (b).

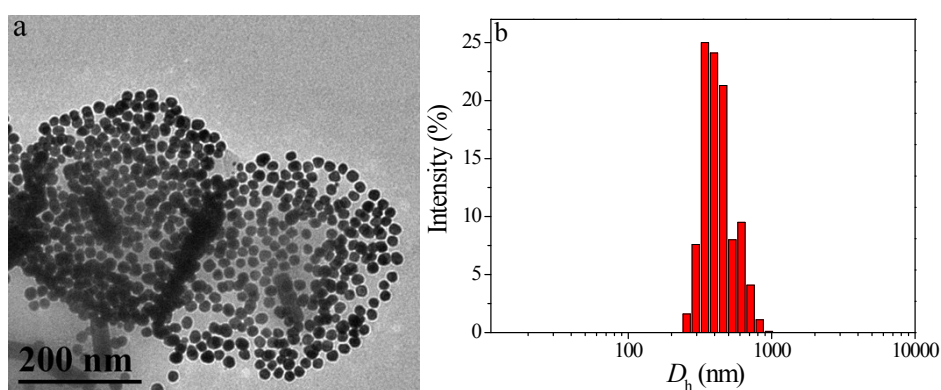


Figure S10. TEM image (a) and hydrodynamic diameter (b) of the nanocomposites after catalytic reaction.

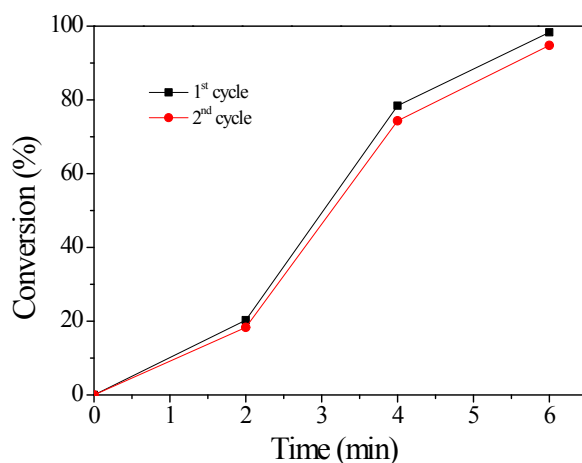


Figure S11. Catalytic activity of Au NRs @PNV microgel@Au NPs catalyst after two cycles.

Table S1. Summary of rate constants of other similar 4-nitrophenol reduction reactions catalyzed by previously reported Au-based catalysts.

No	Catalyst	Time (s)	Rate constant, κ , (s^{-1})	Reference
1	Au@SiO ₂	1800	14×10^{-3}	<i>Adv. Mater.</i> 2008 , <i>20</i> , 1523.
2	Au@CPF-1	720	5.05×10^{-3}	<i>Chem. Eur. J.</i> 2016 , <i>22</i> , 17029-17036.
3	Au ₍₀₎ @TpPa-1	780	5.35×10^{-3}	<i>Chem. Commun.</i> 2014 , <i>50</i> , 3169-3172.
4	Au@MgO	420	7.60×10^{-3}	<i>Green Chem.</i> 2012 , <i>14</i> , 3164-3174.
5	Au core/porous shell nanoparticles	286	3.65×10^{-3}	<i>Nanoscale</i> , 2016 , <i>8</i> , 11707-11717.
6	Au NRs@PNV@Au NPs	240	18×10^{-3}	This work