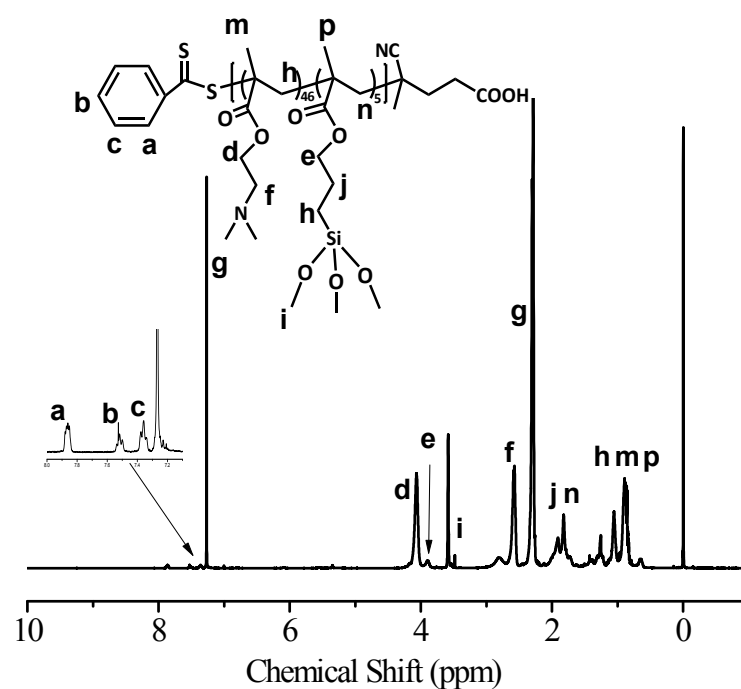


## Au-polymer hybrid microgels easily prepared by thermo-induced self-crosslinking and in situ reduction

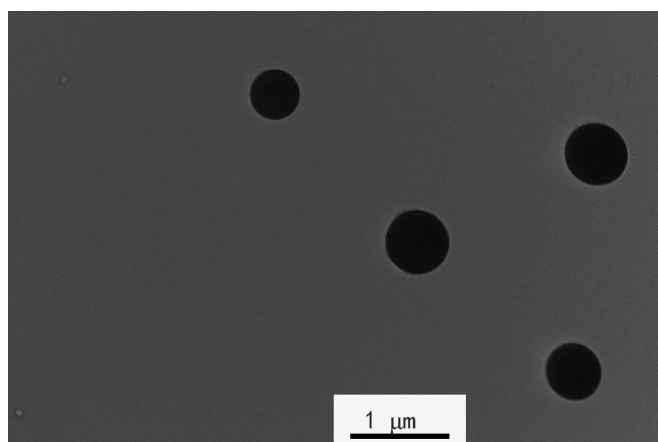
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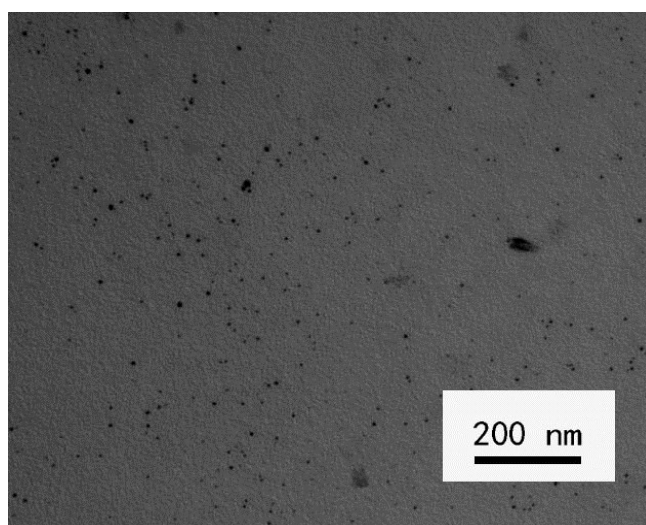
*E-mail: [hongcy@ustc.edu.cn](mailto:hongcy@ustc.edu.cn)*



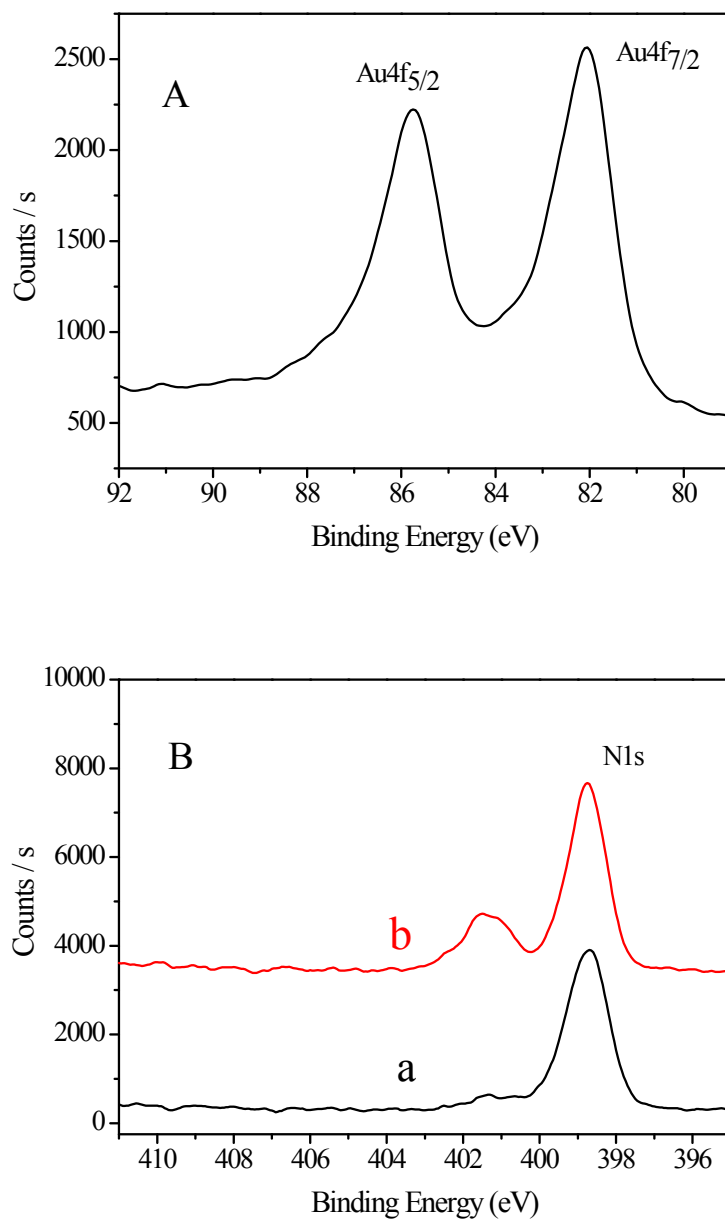
**Fig. S1** <sup>1</sup>H NMR spectrum of P(DMAEMA-co-TMSPMA) in CDCl<sub>3</sub>.



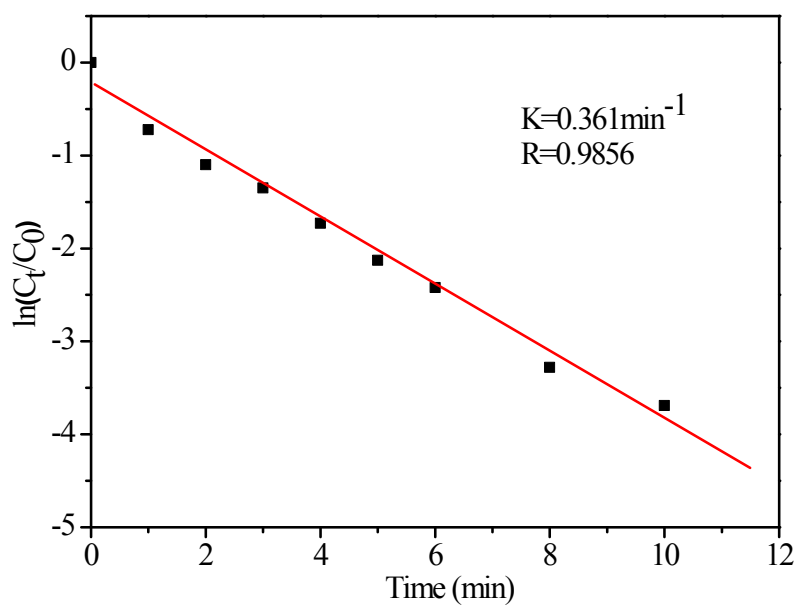
**Fig. S2** TEM image of microgels prepared from P(DMAEMA-co-TMSPMA) solution (2.0 mL, 4.0 mg mL<sup>-1</sup>) after being heated at 70 °C for 40 min.



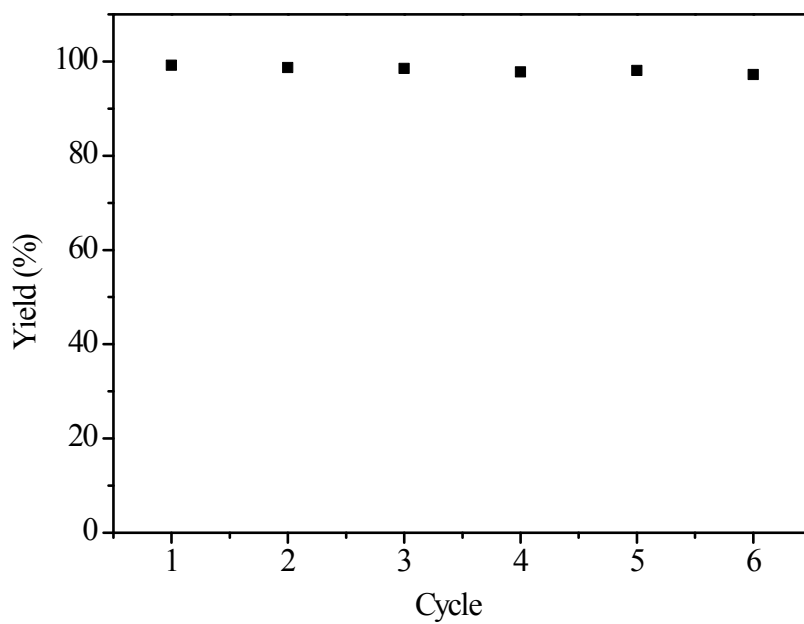
**Fig. S3** TEM image of the mixture of P(DMAEMA-co-TMSPMA) (2.0 mL, 4.0 mg mL<sup>-1</sup>) and HAuCl<sub>4</sub> (16.0 μL, 100 mg mL<sup>-1</sup>) after being heated at 70 °C for 30 min.



**Fig. S4** (A) XPS spectrum of Au4f for Au-polymer hybrid microgels, (B) XPS spectra of N1s: curve a is the spectrum of polymer microgels, curve b is the spectrum of Au-polymer hybrid microgels.



**Fig. S5** Plot of  $\ln(C_t/C_0)$  versus time for Au-polymer hybrid microgels.



**Fig. S6** The reusability of Au-polymer hybrid microgels as catalyst for the reduction of 4-nitrophenol (4-NP) by NaBH<sub>4</sub>.