Supporting Information

Preparation, characterization and responsive catalysis of novel thermoresponsive gold nanoparticles

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Fig. S1 Illustration of the thermoresponsive property of the aqueous solutions of AuNPs capped with HPEI-IBAm polymers

Fig. S2 TEM images of (A, B) citrate protected AuNPs; (C, D) composite of AuNPs with HPEI-IBAm polymers
Fig. S3 The kinetics of the reduction reaction of 4-nitrophenol by NaBH₄ catalyzed by the composites of AuNPs with different amount of HPEI10K-IBAm₀.₇₅ polymers at 20 °C (A) plots of Conversion versus Time; (B) plots of ln(Cₜ/C₀) versus Time. ([4-nitrophenol]=1.0×10⁻⁴M, [NaBH₄]=1.0×10⁻²M, [Au]=9.48×10⁻⁶M)
Fig. S4 The kinetics of the reduction reaction of 4-nitrophenol by NaBH₄ catalyzed by the composites of HPEI10K-IBAm₀.₈₀ polymers with different concentrations of AuNPs at 20 °C (A) plots of Conversion versus Time; (B) plots of ln(Cₜ/C₀) versus Time. ([4-nitrophenol]=1.0×10⁻⁴M, [NaBH₄]=1.0×10⁻²M, [HPEI10K-IBAm₀.₈₀]=6.84×10⁻⁶M)
Fig. S5 The kinetics of the reduction reaction of 4-nitrophenol by NaBH₄ catalyzed by the composites of HPEI10K-IBAm₀.₇₅ polymers with different concentrations of AuNPs at 20 °C (A) plots of Conversion versus Time; (B) plots of ln(Ct/C₀) versus Time. ([4-nitrophenol]=1.0×10⁻⁴M, [NaBH₄]=1.0×10⁻²M, [HPEI10K-IBAm₀.₇₅]=6.84×10⁻⁶M)
Fig. S6 The kinetics of the reduction reaction of 4-nitrophenol by NaBH₄ catalyzed by the composites of AuNPs with HPEI10K-IBAm₀.₈₀ polymers at different temperatures (A) plots of Conversion versus Time; (B) plots of \( \ln(C_t/C_0) \) versus Time. ([4-nitrophenol]=1.0×10⁻⁴M, [NaBH₄]=1.0×10⁻²M, [Au]=9.48×10⁻⁶M, [HPEI10K-IBAm₀.₈₀]=6.84×10⁻⁶M)
Fig. S7 The kinetics of the reduction reaction of 4-nitrophenol by NaBH₄ catalyzed by the composites of AuNPs with HPEI1.2K-IBAm₀.₉₅ polymers at different temperatures (A) plots of Conversion versus Time; (B) plots of ln(Cₜ/C₀) versus Time. ([4-nitrophenol]=1.0×10⁻⁴M, [NaBH₄]=1.0×10⁻²M, [Au]=9.48×10⁻⁶M, [HPEI1.2K-IBAm₀.₉₅]=6.84×10⁻⁶M)