Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Supporting Information

Palladium Nanoparticles Encapsulated in Magnetically Separable Polymeric Nanoreactors

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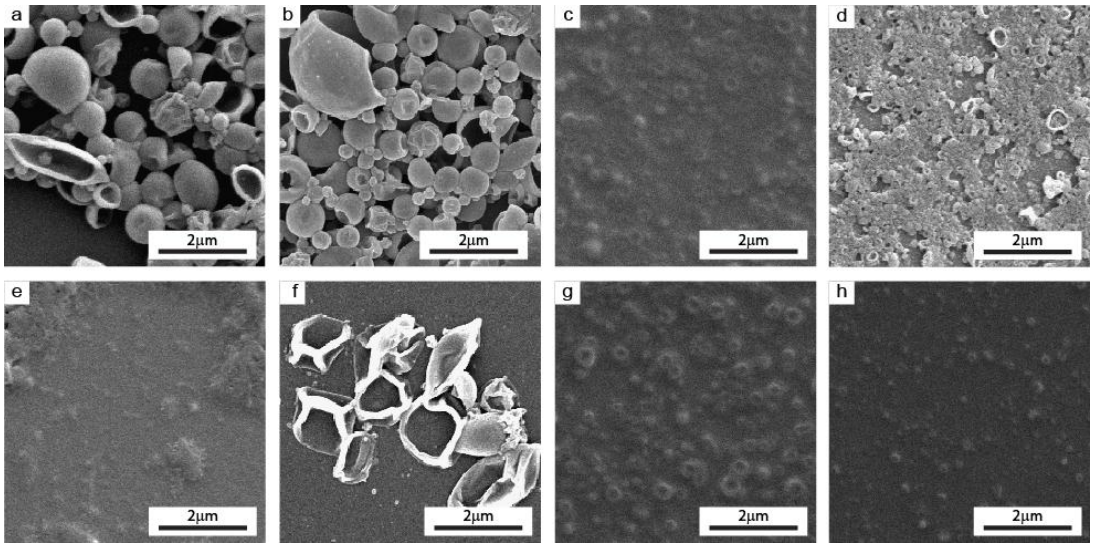

Figure S1. SEM images of polyurea nanocapsules prepared using different amine and isocyanate monomers. a. HDI/HMDA; b. TDI/HMDA; c. MBDI/HMDA; d. PAPI 27/HMDA; e. HDI/DETA; f. TDI/DETA; g MBDI/DETA; h. PAPI 27/DETA.

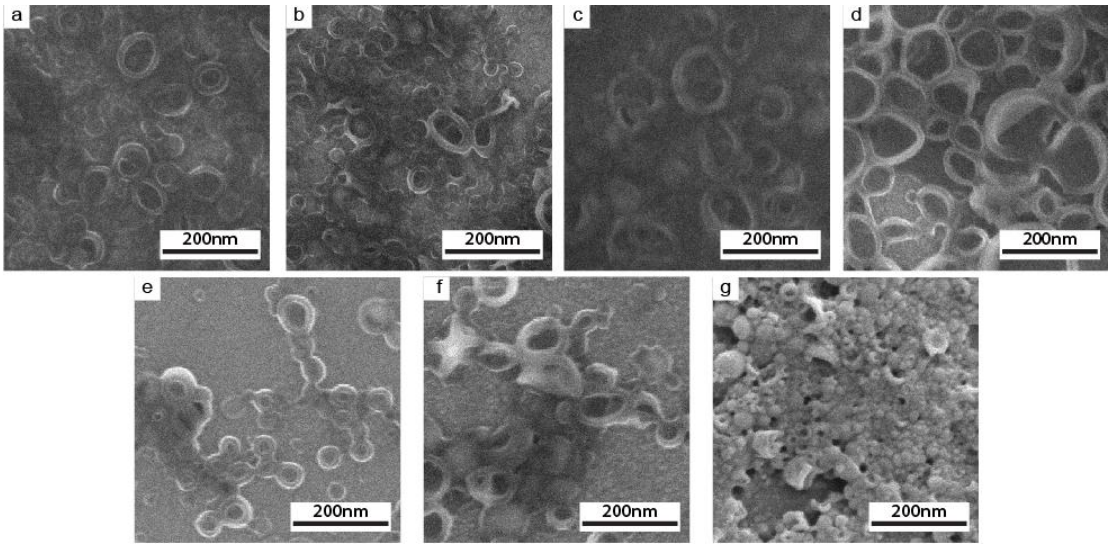

Figure S2. SEM images of polyurea nanocapsules prepared using different PAPI 27:HMDA molar ratio. a. 1:0.4; b.1:0.7; c. 1:0.9; d. 1:1.0; e. 1:1.25; f. 1:1.5; g.1:1.73.

Table S1. Average size distribution measurements of polyurea nanocapsules prepared from different isocyanate and amine monomers

Entry	amine/isocyanate monomer	average size distribution (nm)
1	HDI/HMDA	343
2	TDI/HMDA	389
3	MBDI/HMDA	195
4	PAPI 27/HMDA	121
5	HDI/DETA	183
6	TDI/DETA	396
7	MBDI/DETA	171
8	PAPI 27/DETA	106

Table S2. Average size distribution measurements of polyurea nanocapsules using different PAPI 27/HMDA molar ratio.

Entry	PAPI 27/HMDA molar ratio	Average size distribution (nm)
1	1:0.4	107
2	1:0.7	105
3	1:0.9	107
4	1:1.1	108
5	1:1.25	126
6	1:1. 5	125
7	1:1.73	111

Table S3. Average size distribution measurements of polyurea nanocapsules, Pd_{nano}@PU and Pd_{nano}/MNPs@PU.

Entry	Encapsulated element	Average size distribution (nm)
1	Polyurea nanocapsules	105.7
2	Pd_{nano}@PU	223.6
3	Pd_{nano}/MNPs@PU nanoreactors.	220.5

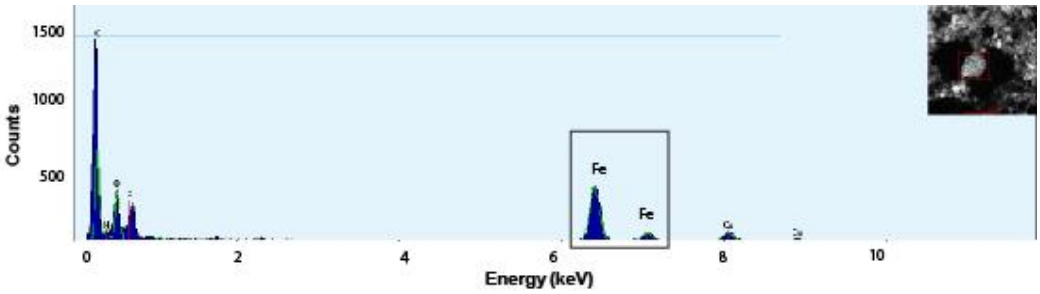

Figure S3. Energy dispersive X-ray spectroscopy (EDX) measurements of MNPs@PU nanocapsules.

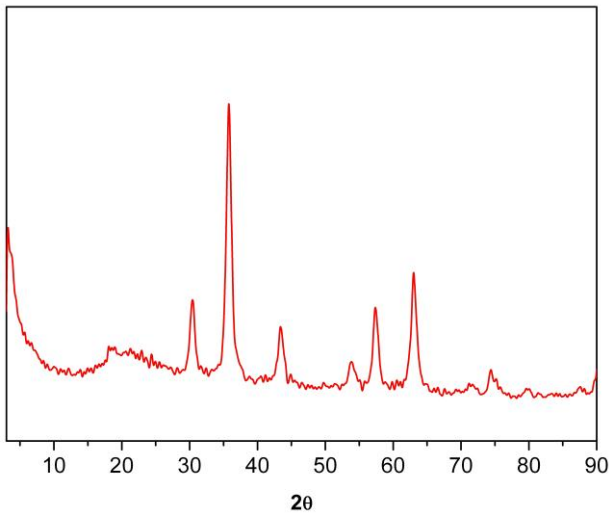

Figure S4. Powder XRD pattern of MNPs@PU nanocapsules.

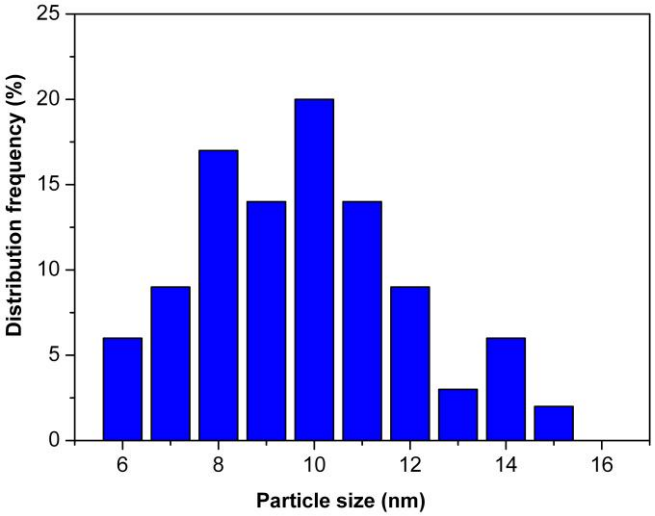

Figure S5. Particle size distribution of palladium nanoparticles in Pd_{nano} @PU nanocapsules.

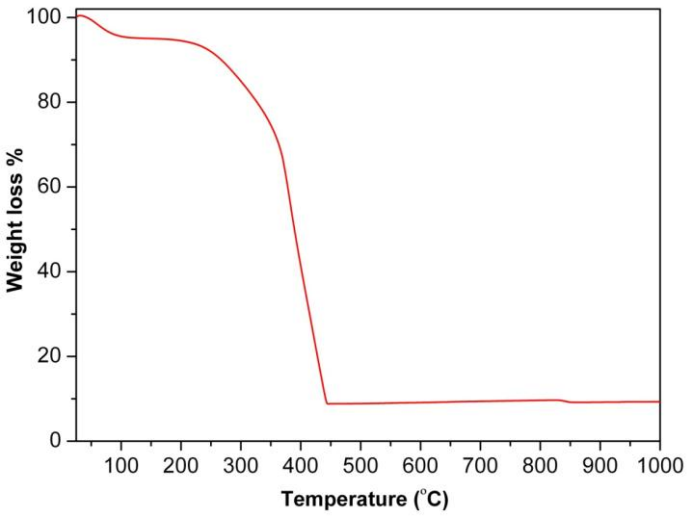

Figure S6. Thermal gravimetric analysis (TGA) curve of Pd_{nano}/MNPs@PU nanocapsules.