

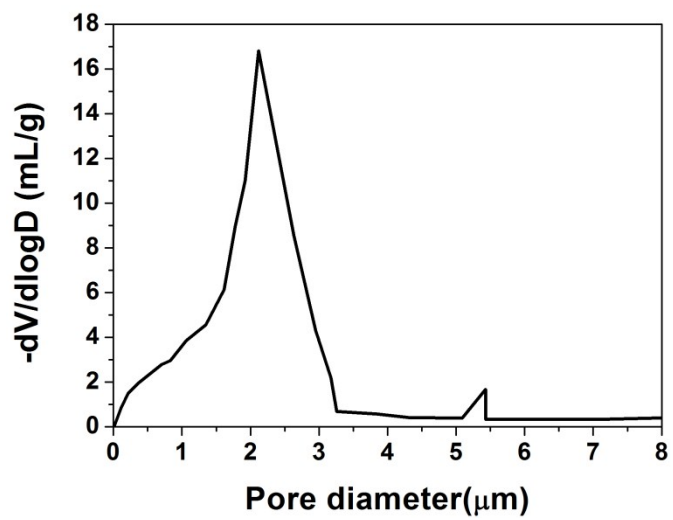
Electronic Supplementary Information for:

**Preparation and recyclable catalysis performance of functional  
macroporous polyHIPE immobilized with gold nanoparticles on its  
surface**

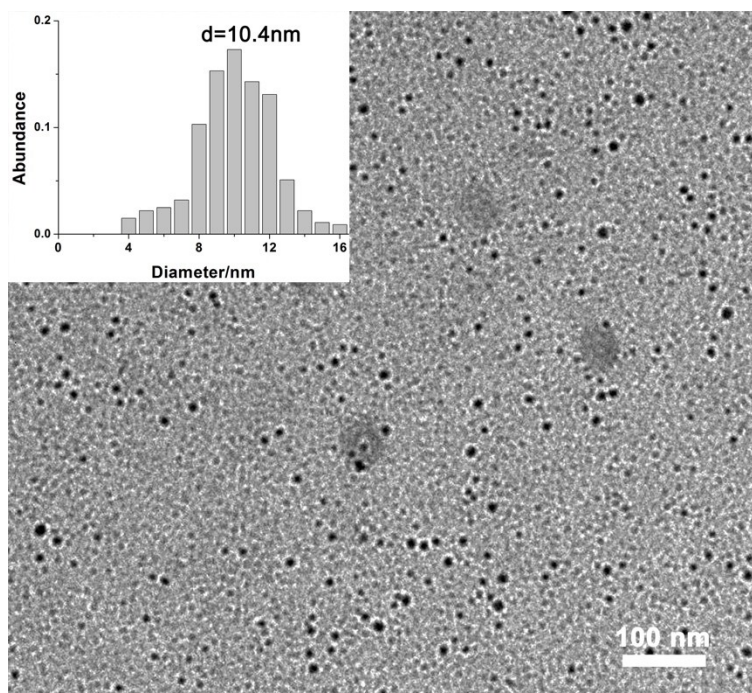
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**Fig. S1** Pore size distribution of PHIPE-PGMA-TETA/Au by MIP.



**Fig. S2** TEM micrograph of Au NPs.

Table S1. Densities and porosities of PolyHIPEs

	PHIPE-PGMA-TETA	PHIPE-PGMA-TETA/Au
$\rho^a$ , g cm <sup>-3</sup>	0.2401	0.2882
$\delta^b$ , m <sup>2</sup> g <sup>-1</sup>	43.2431	41.4738
$V_g^c$ , ml g <sup>-1</sup>	0.2496	0.2288
$D^d$ , nm	25.63	26.24
$d_v \pm \sigma^e$ , $\mu\text{m}$	$2.3 \pm 1.1$	$2.3 \pm 1.0$
$P^f$ , %	86.7	86.4

<sup>a</sup> Dry polyHIPE density.

<sup>b</sup> Specific surface area from BET treatment of N<sub>2</sub> adsorption data.

<sup>c</sup> Pore volume from BET treatment of N<sub>2</sub> adsorption data.

<sup>d</sup> Average pore size within the walls of the monoliths and obtained from BJH treatment of N<sub>2</sub> adsorption data.

<sup>e</sup> Void diameter determined from SEM pictures of broken samples.

<sup>f</sup> Porosity of polyHIPE void structure from BET treatment of N<sub>2</sub> adsorption data.

Table S2. Comparison of the properties of nano-Au catalytic polymers based on the reduction of 4-Nitrophenol

Support	TOF(h <sup>-1</sup> )	Recyclable performance	Separation of materials	Reference
P4VP-g-CNC	3124.8	Not mentioned	Centrifugation	Carbohydrate Polymers 182 (2018) 61–68
Ionic cellulose	900	97% (5 times)	filtration with the addition of acetone	RSC Adv., 2018, 8, 1758–1763
HPEI-IBAm	120	95% (6 times)	Centrifugation	J. Mater. Chem., 2010, 20, 360–368
PEI/PVA nanofibers	<1	97% (3 times)	filtration	J. Mater. Chem., 2011, 21, 4493
magnetic porous carbon	35.4	>97% (6 times)	magnetic separation	J. Mater. Chem. A, 2014, 2, 18775–18785
PHIPE-PGMA-TETA.	6.3	>96%(10 times)	Tweezers out	This work