## **Electronic Supporting Information**

## Uniform Ni/SiO<sub>2</sub>@Au magnetic hollow microspheres: rational design and excellent catalytic performance in 4-nitrophenol reduction

Shenghuan Zhang,<sup>a</sup> Shili Gai,<sup>a</sup> Fei He,<sup>a</sup> Yunlu Dai,<sup>b</sup> Peng Gao\*<sup>a</sup>, Lei Li,<sup>a</sup> Yujin Chen\*<sup>c</sup>, and Piaoping Yang\*<sup>a</sup>



Fig. S1 a) Low-, b) high-magnification TEM images of  $SiO_2@Au$ .



Fig. S2 UV-vis absorption spectra of successive reduction of 4-NP using SiO<sub>2</sub>@Au as catalysts.



**Fig. S3** C/C<sub>0</sub> verse reaction time for the reduction of 4-NP at the peak position of 4-NP (400 nm) using Ni/SiO<sub>2</sub>@Au with the size of 250 nm (purple line), 350 nm (blue line), 600 nm (red line) and 700 nm (black line) as catalysts

	Au (mol %)	Ni (mol%)
before reaction	1.16	10.37
after reaction for 8 cycles	0.79	7.31

Table 1. The ICP data of Ni/SiO<sub>2</sub>@Au before catalytic reaction and after catalytic reaction for 8 cycles