Supporting information

A Facile One-step Method to Synthesize SiO_2@Polydopamine Core-shell Nanospheres for Shear Thickening Fluid

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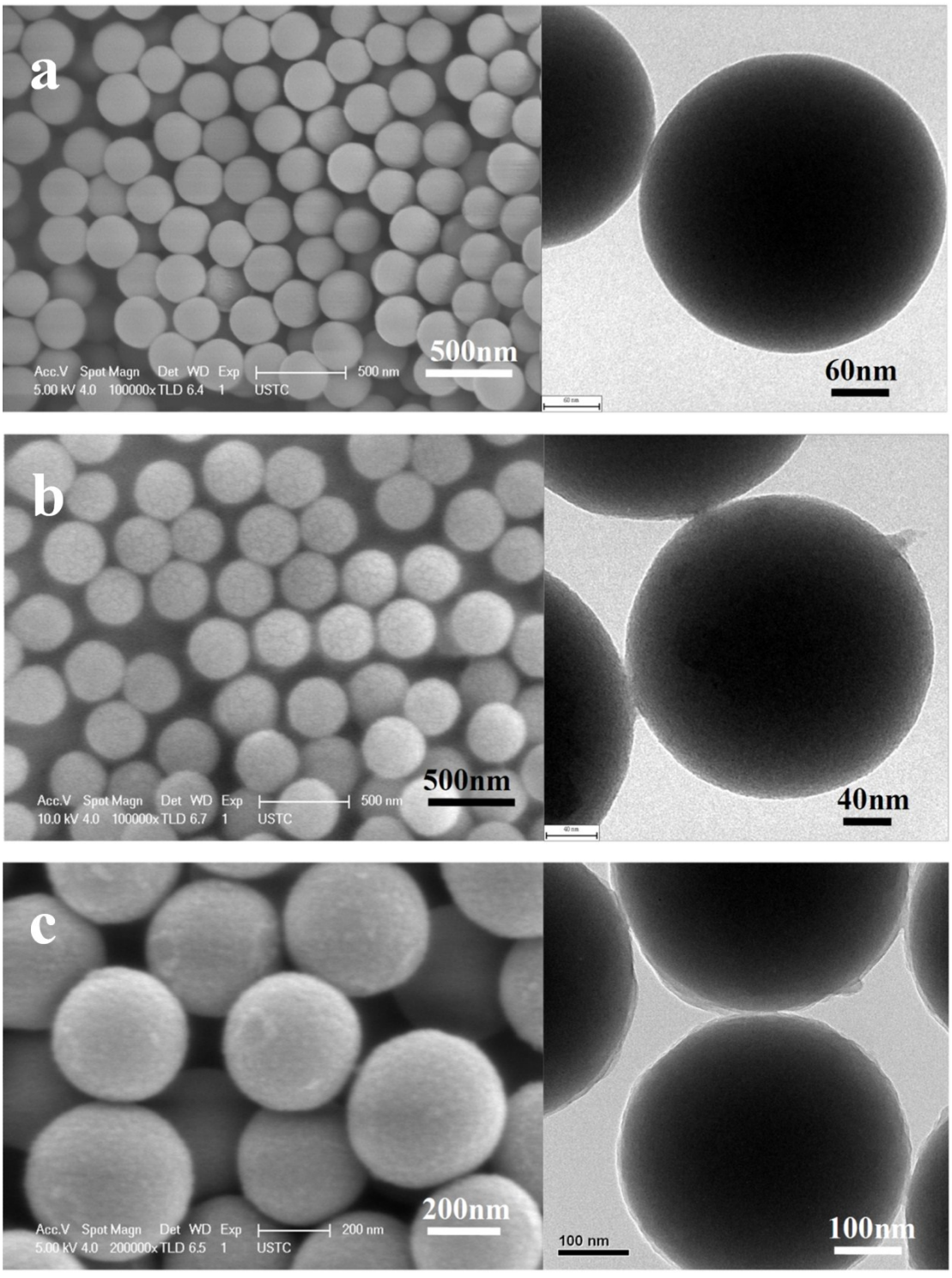

a
500nm
Acc.V Spot Magn Det WD Exp 500 nm
5.00 kV 4.0 100000x TLD 6.4 1 USTC
60nm
b
500nm
Acc.V Spot Magn Det WD Exp 500 nm
10.0 kV 4.0 100000x TLD 6.7 1 USTC
40nm
c
200nm
Acc.V Spot Magn Det WD Exp 200 nm
5.00 kV 4.0 200000x TLD 6.5 1 USTC
100 nm
100nm

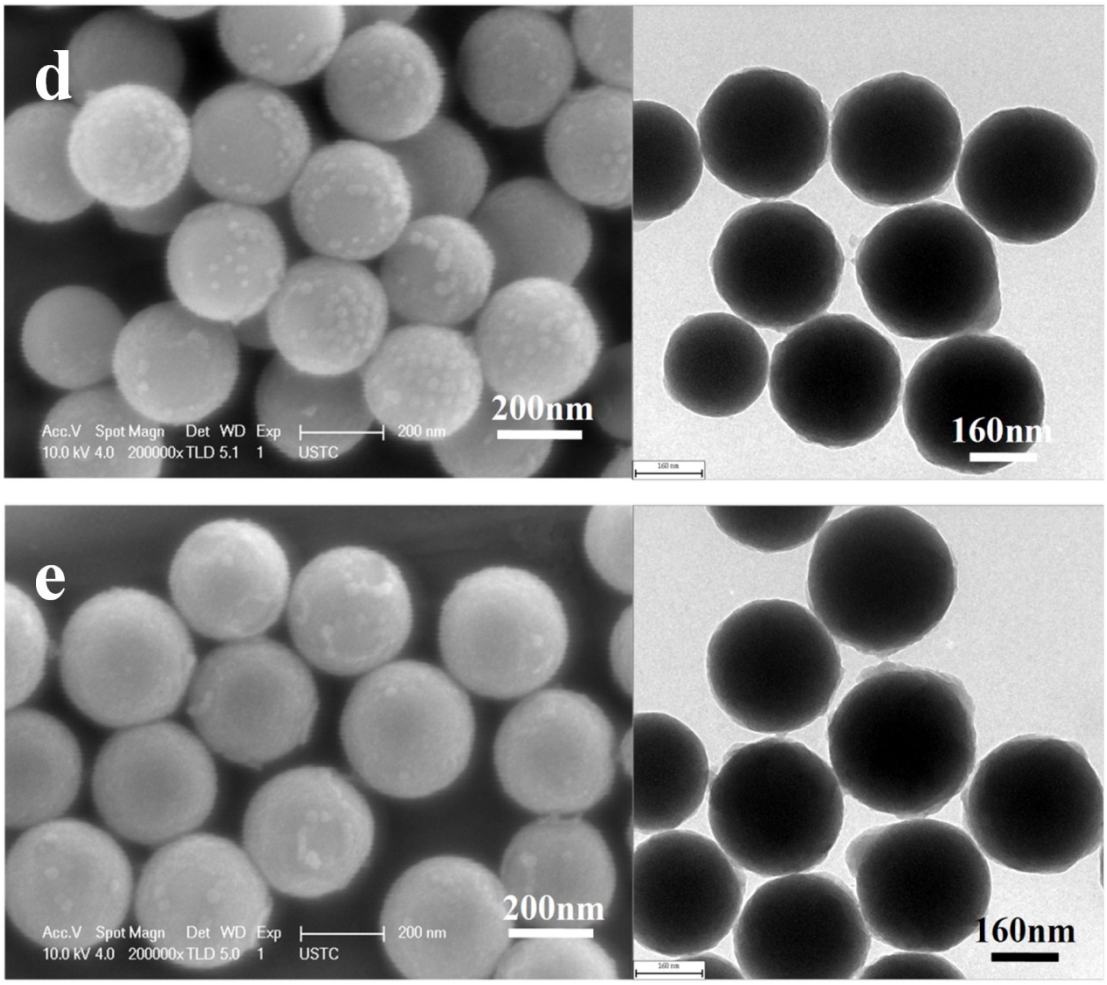
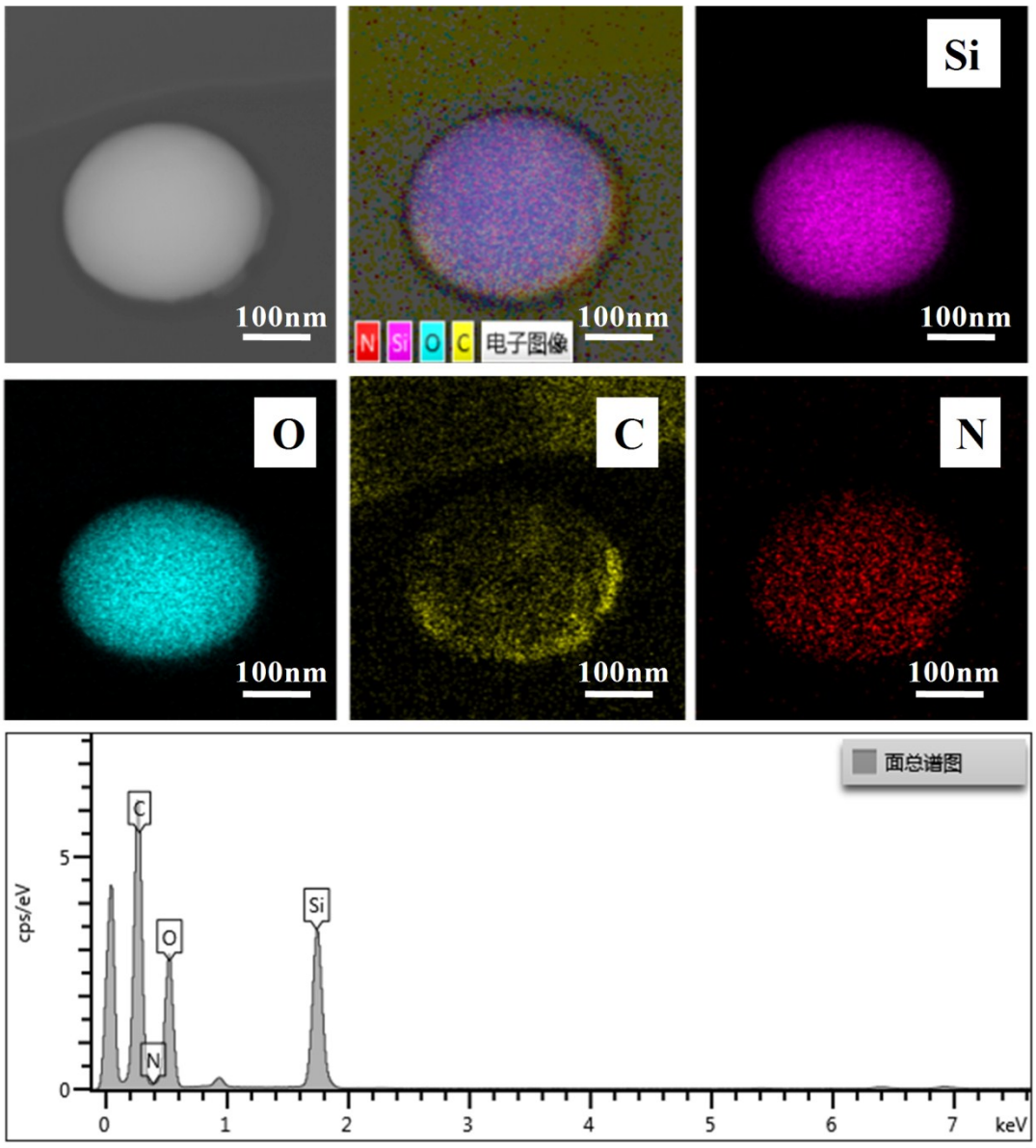


Figure S1. SEM and TEM images of the obtained raw SiO_2 particles (a), SiO_2@PDA nanoparticles synthesized with different dopamine concentrations: 1g/L (b), 2g/L (c), 3g/L (d) and 4g/L (e).



元素	线类型	wt%	原子百分比
C	K线系	61.37	72.14
N	K线系	0.07	0.07
O	K线系	22.13	19.53
Si	K线系	16.43	8.26
总量:		100.00	100.00

Figure S2. Energy dispersive spectrometer (EDS) mapping spectra of each element on the surface of the SiO_2@PDA core-shell nanoparticles and the element content distributions are shown in table.

From figure S2 we can clearly see the element of carbon and nitrogen on the

surface of core-shell nanoparticles. Carbon and nitrogen is the characteristic element of polydopamine. The element content of carbon, nitrogen, oxygen and silicon is 61.37, 0.07, 22.13, 16.43wt%. These indicate that the layer of polydopamine was encapsulated on the surface of SiO_2.