

Supporting information

**CdS nanoparticles assisting thermal oxidation of polythiols segments of PS-b-Polythiols to produce core cross-linking micellar clusters**

Peak	Position (eV)			
	CdS	OP <sub>Cds</sub> (0h)	OP <sub>Cds</sub> (16h)	PS-b-polythiol
I	161.14	161.57	161.58	
II	162.35	162.67	162.74	
III	163.44	163.44	163.76	163.9
IV	164.44	164.54	164.86	165.12
V	167.84	168.43	168.33	
VI	168.84	169.53	169.39	

Peak	Area (eV)			
	CdS	OP <sub>Cds</sub> (0h)	OP <sub>Cds</sub> (16h)	PS-b-polythiol
I	20434.1	6993.5	3731.9	
II	10217	3496.8	1866	
III	1082.5	2123.7	1054	2792.1
IV	538	1061.8	527	1384.6
V	2462.8	1487.9	814.4	
VI	1231.4	744	407.2	

Doublet	Area ratio			
	CdS	OP <sub>Cds</sub> (0h)	OP <sub>Cds</sub> (16h)	PS-b-polythiol
Area(II)/Area(I)	2	2	2	
Area(IV)/Area(III)	2	2	2	2
Area(VI)/Area(V)	2	2	2	

Doublet	Separation (eV)			
	CdS	OP <sub>Cds</sub> (0h)	OP <sub>Cds</sub> (16h)	PS-b-polythiol
BE(II)-BE(I)	1.21	1.1	1.16	
BE(IV)-BE(III)	1	1.1	1.1	1.22
BE(VI)-BE(V)	1	1.1	1.06	

Doublet	Area ratio			
	CdS	OP <sub>Cds</sub> (0h)	OP <sub>Cds</sub> (16h)	PS-b-polythiol
(Area(IV)+Area(III))/ ((Area(II)+Area(I)))	0.05	0.3	0.28	
(Area(IV)+Area(III))/ ((Area(II)+Area(I)))	0.12	0.21	0.22	

**Table.S1** Peaks' parameters of XPS of S2p fitted with a software called XPS peak (fitted with Lorentzian-Gaussian shaped peaks, L/G=20%), (peak I, II), (peak III, IV) and (peak V, VI) were assigned to S<sup>2-</sup>, -SH or -S-S-, -SO<sub>3</sub><sup>-</sup>, respectively.