



Figure S1. cyclic photometry data.

Table S1 for DLS data (measurements in triplicate (a,b,c) related to Fig. 2)

a) DLS measurement for particles formed in 100 ppm PDADMAC/ 0.2 mM ascorbic acid

Exp. No.	H <sub>2</sub> AuCl <sub>4</sub>	DLS-a [nm]	DLS-b [nm]	DLS-c [nm]	DLS-mean	PDI-a	PDI-b	PDI-c	PDI-mean
1	0.02 mM	156.9	154.5	151.7	154.4	0.132	0.096	0.126	0.118
2	0.03	144.6	141.7	156.3	147.5	0.243	0.245	0.273	0.254
3	0.05	110.7	103.9	103.3	106.0	0.278	0.274	0.268	0.273
4	0.1	92.51	93.68	95.80	94.0	0.376	0.293	0.303	0.324
5	0.15	98.71	97.66	96.97	97.78	0.256	0.251	0.236	0.248
6	0.2	160.8	161.2	163.7	161.9	0.24	0.232	0.230	0.234

b) DLS measurement for particles formed in 50 μM H<sub>2</sub>AuCl<sub>4</sub>/ 0.1 mM ascorbic acid

Exp. No.	PDADMAC	DLS-a	DLS-b	DLS-c	DLS-mean	PDI-a	PDI-b	PDI-c	PDI-mean
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		[nm]	[nm]	[nm]					
1	10 ppm	55.73	56.05	55.28	55.69	0.281	0.284	0.285	0.283
2	20	61.72	62.16	61.89	61.92	0.291	0.279	0.280	0.283
3	50	85.08	84.85	85.24	84.97	0.265	0.261	0.266	0.264
4	100	110.9	114.4	112.8	112.7	0.327	0.268	0.274	0.290
5	200	151.1	137.2	145	144.4	0.359	0.366	0.407	0.377
6	400	361.0	370.6	385.0	372.2	0.401	0.545	0.570	0.505