Centrifugal microfluidic device for high-throughput synthesis of Pd@AuPt core-shell nanoparticles to evaluate the performance of hydrogen peroxide generation

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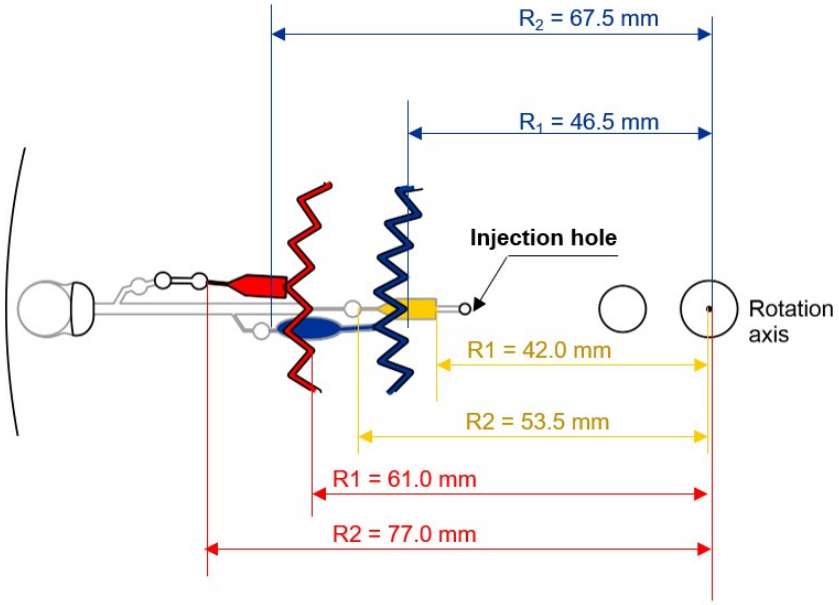

Figure S1. R_1, and R_2 value of the three solutions. R_2–R_1 is the length of liquid plug.

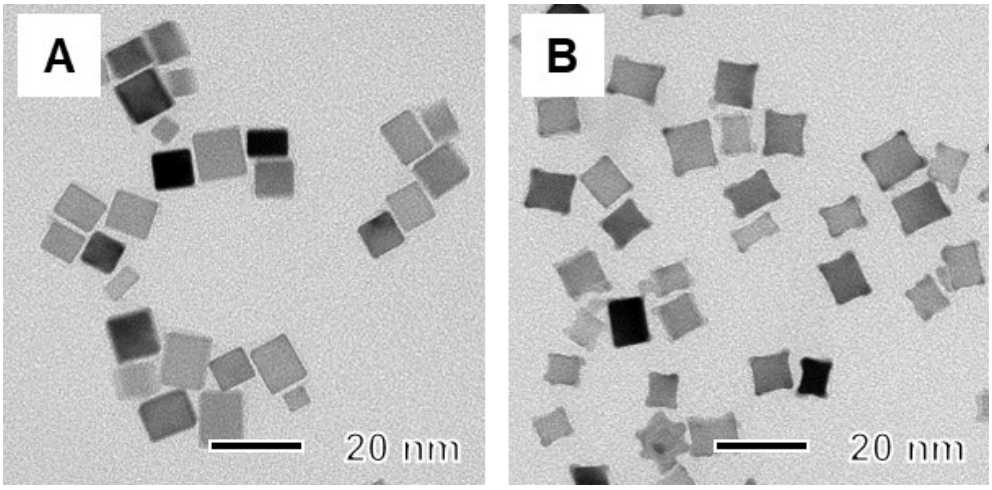

Figure S2. TEM images for (A) Pd cube NPs and (B) Pd@Pt core-shell NPs synthesized by using a batch reactor (vial).

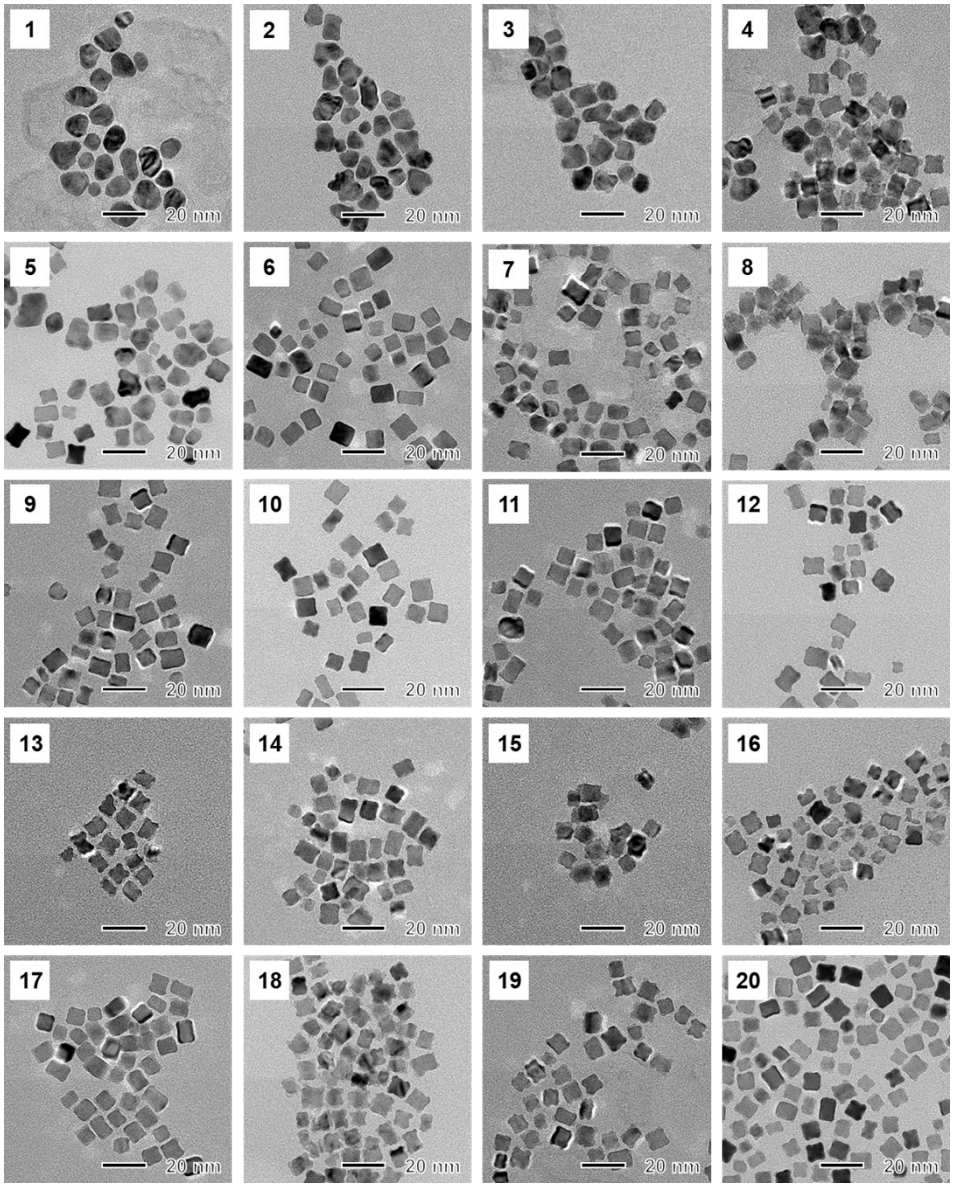

Figure S3. TEM image for Pd@AuPt NPs synthesized by using a centrifugal microreactor. The used Au/Pt ratio for the synthesis was (1) 12.0, (2) 10.2, (3) 8.4, (4) 6.66, (5) 5.14, (6) 3.88, (7) 2.86, (8) 2.06, (9) 1.48, (10) 1.04, (11) 0.74, (12) 0.52, (13) 0.36, (14) 0.26, (15) 0.18, (16) 0.12, (17) 0.084, (18) 0.06, (19) 0.04, and (20) 0.028, respectively

Table S1. Elemental composition of the synthesized Pd@AuPt NPs.

Injected Au/Pt atomic ratio	**12**	**8.4**	**5.2**	**2.8**	**1.4**	**0.8**	**0.4**	**0.2**	**0.08**
Total(g/L)	0.703	1.317	1.409	1.056	1.054	0.7862	0.8181	0.9275	1.189
Pd	0.3260	0.825	1.100	0.890	0.9550	0.7200	0.7600	0.8900	1.145
Au	0.3450	0.439	0.25	0.117	0.0595	0.0275	0.0105	0.015	0.0008
Pt	0.0320	0.0515	0.0565	0.0515	0.035	0.032	0.0455	0.0365	0.045
Au/Pt atomic ratio in the NPs	10.67	8.440	4.384	1.299	1.683	0.850	0.229	0.024	0.008

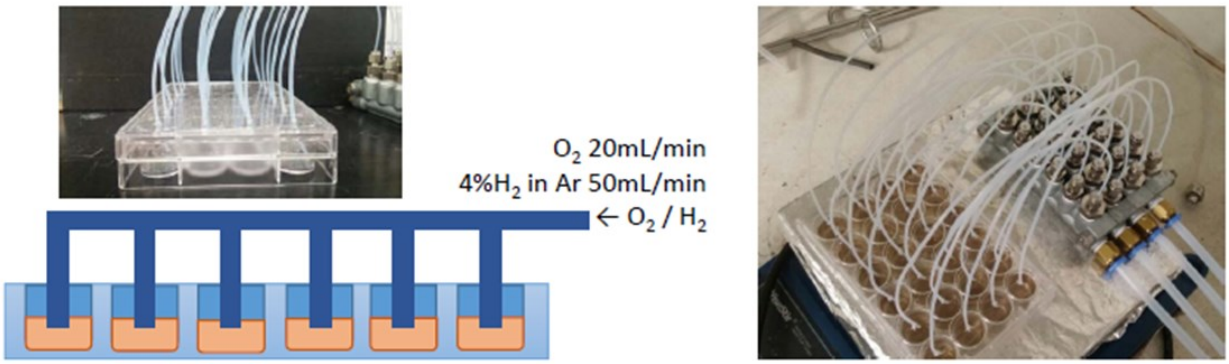

Figure S4. Photographs and illustration of the fast-screening reactor for H_2O_2 generation.