Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supporting information

Kinetic analysis of the reduction of 4-nitrophenol catalyzed by Au/Pd nanoalloys immobilized in spherical polyelectrolyte brushes

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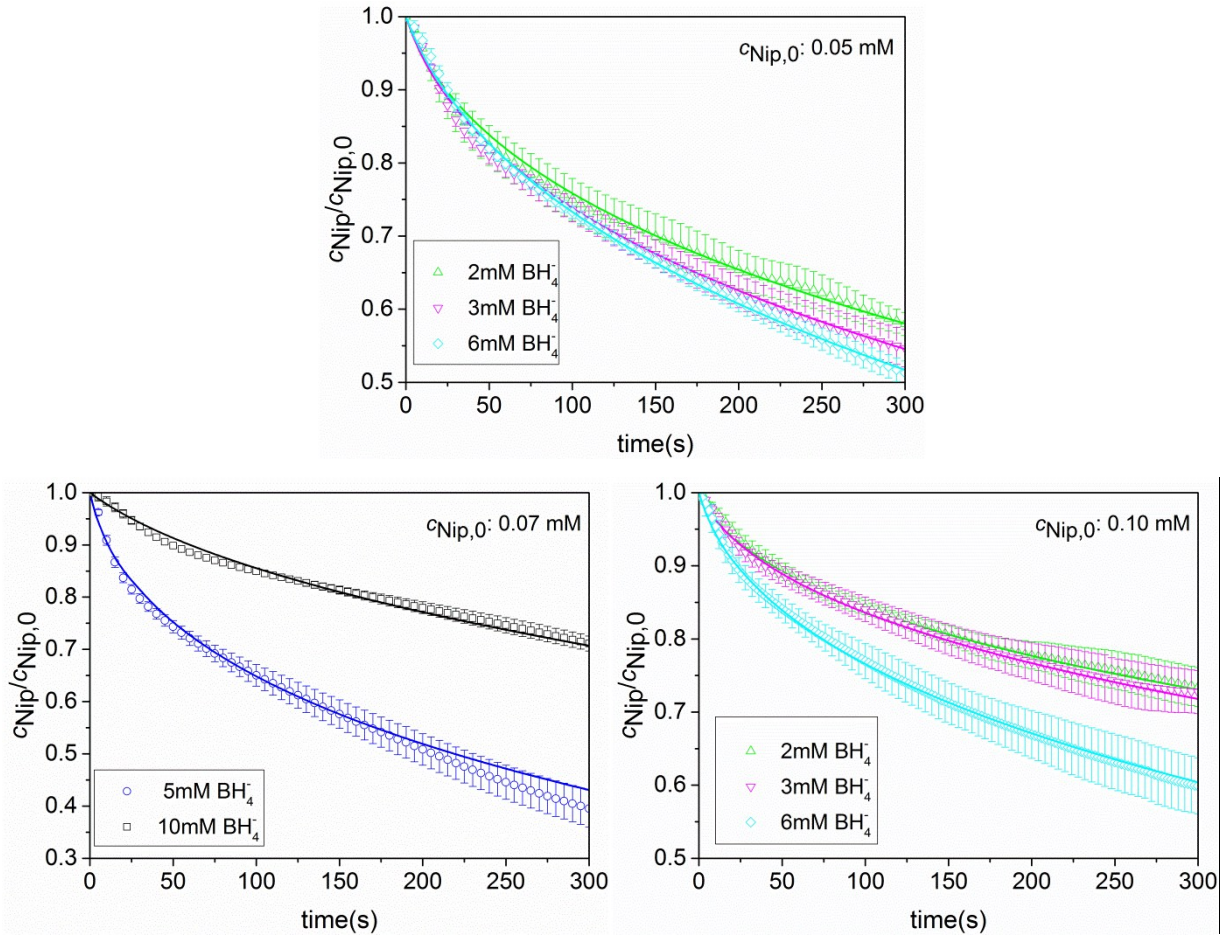

Fig. 1 Fit of the concentration of Nip as the function of time, **catalyzed by SPB-$Au_{75}Pd_{25}$** nanoalloys. The induction period of the reaction was subtracted. The concentration of Nip was normalized to the respective starting concentration $c_{Nip,0}$. The solid lines are fitting lines.

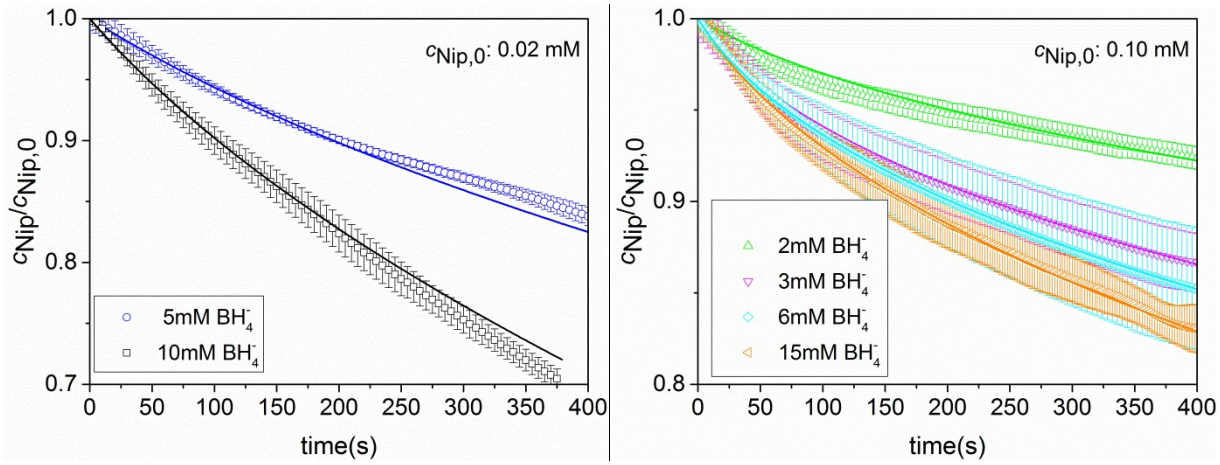

Fig. 2 Fit of the concentration of Nip as the function of time **catalyzed by SPB-Pd nanparticles**. The induction period of the reaction was subtracted. The concentration of Nip was normalized to the respective starting concentration $c_{Nip,0}$. The solid lines are fitting lines.

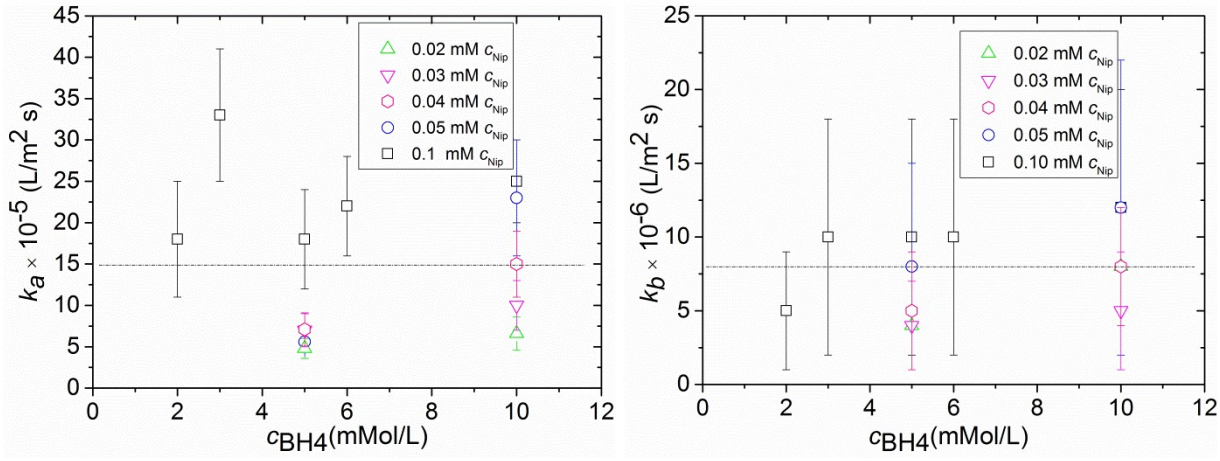

Fig. 3 Kinetic constants k_a and k_b derived from fitting, for the reaction catalyzed by SPB-Pd nanoalloys. The dash lines indicate the average value.

Table 1: Optimized k_a and k_b values from fitting the data of SPB-Au75Pd25.

c_{Nip} [mmol/L]	**c_{BH4} [mmol/L]**	**k_a** [10^{-3}mol/m^2 s]	**error k_a** [10^{-3}mol/m^2 s]	**k_b** [10^{-5}mol/m^2 s]	**error k_b** [10^{-5}mol/m^2 s]
0.1	2	12.0	3.0	18	10
0.1	3	9.5	2.7	15	5
0.1	5	19.0	6.0	15	8
0.1	6	12.0	4.0	22	10
0.1	10	8.0	2.0	10	5
0.05	2	9.5	1.5	20	10
0.05	3	8.2	2.0	18	12
0.05	5	7.5	2.0	10	8
0.05	6	5.7	1.8	18	12
0.05	10	6.3	1.7	5	4
0.03	5	6.0	2.0	6	5

0.03	10	2.2	0.6	8	4
0.04	5	7.5	2.5	10	5
0.04	10	2.6	0.6	5	3
0.07	5	18	4	20	10
0.07	10	2.7	0.7	15	10

Table 2: Optimized k_a and k_b values form fitting the data for SPB-Pd.

c_{Nip} [mmol/L]	**c_{BH4} [mmol/L]**	***k_a*** [10^{-5}mol/m^2 s]	**error *k_a*** [10^{-5}mol/m^2 s]	***k_b*** [10^{-6}mol/m^2 s]	**error *k_b*** [10^{-6}mol/m^2 s]
0.1	2	18.0	7.0	5	4
0.1	3	33.0	8.0	10	8
0.1	5	18.0	6.0	10	8
0.1	6	22.0	6.0	10	8
0.1	10	25.0	5.0	12	8
0.05	5	5.6	2.0	8	7
0.05	10	23.0	7.0	12	10
0.02	5	4.8	1.2	4	3
0.02	10	6.6	2.0	8	4
0.03	5	7.0	2.0	4	3
0.03	10	10.0	3.0	5	4
0.04	5	7.1	2.0	5	4
0.04	10	15.0	4.0	8	4