Supporting Information for

Solvothermal Synthesis of Pt-Pd Alloys with Selective Shapes and

Their Enhanced Electrocatalytic Activities

Zhi-Cheng Zhang^{1,2}, Jun-Feng Hui², Zhen-Guo Guo¹, Qi-Yu Yu², Biao Xu², Xin

Zhang^{1,*}, Zhi-Chang Liu¹, Chun-Ming Xu¹, Jin-Sen Gao¹, Xun Wang^{2,*}

¹State Key Laboratory of Heavy Oil Processing, Department of Chemical Engineering, China University of Petroleum, Beijing 102249, P. R. China ²Department of Chemistry, Tsinghua University, Beijing 100084, P. R. China

*e-mail: wangxun@mail.tsinghua.edu.cn; zhangxin@cup.edu.cn





Fig. S1 TEM images of Pt–Pd bimetallic alloys with different shapes. (a) nanocubes; (b) nanobars; (c) nanoflowers; (d) concave nanocubes; (e) nanodendrites.



Fig. S2 TEM (a), HRTEM (b), HAADF-STEM (c) images and corresponding EDS pattern (d) of Pt–Pd bimetallic nanocrystals collected from the reactions with the same conditions used in the synthesis of Pt–Pd alloy nanobars (Figure 1e) but further doubling the precursor amount of Pd and Pt respectively. The inset of right-top in c is corresponding EDS mapping of the inset of bottom-left (Pd, orange; Pt, yellow).



Fig. S3 TEM images of the product synthesized under the same conditions as Pt–Pd alloy nanocubes but without adding NaI.



Fig. S4 TEM image of the sample collected from the reaction with the same condition used in the synthesis of Pt–Pd alloy nanocubes but in the absence of EDTA-2Na.



Fig. S5 TEM images of the products synthesized with the same conditions used in the synthesis of Pt–Pd alloy concave cubes (a), dendrites (b), and flowers (c) but without adding NaI, respectively.



Fig. S6 TEM image of the sample collected from the reaction with the same condition used in the synthesis of Pt–Pd alloy concave nanocubes except without SDS.



Fig. S7 Representative TEM image of the commercial Pt black purchased from Alfa Aesar.



Fig. S8 Representative TEM image of the commercial Pt/C catalyst purchased from Alfa Aesar.