Supporting Information

Synthesis and Electrocatalytic Properties of PtBi Nanoplatelets and PdBi Nanowires

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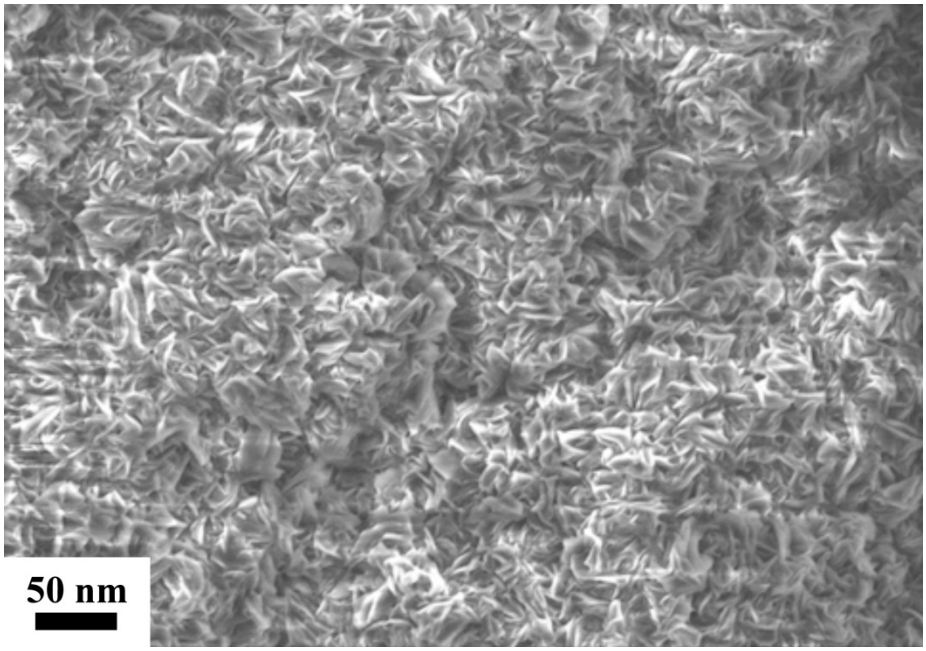

Fig. S1 SEM image of PtBi NPLs.

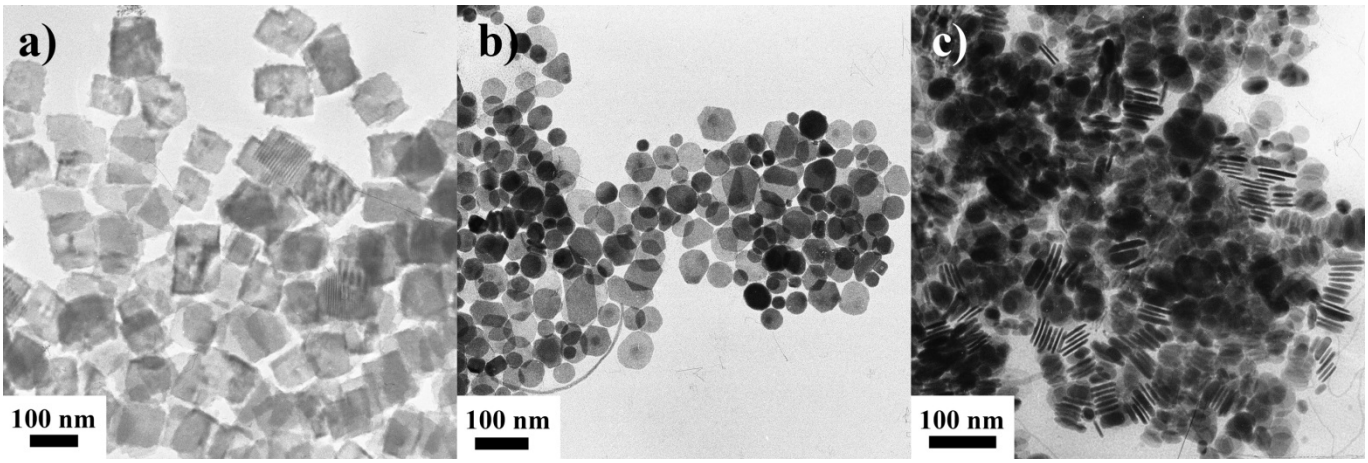

Fig. S2 (a) TEM image of the synthesized PtBi square nanoplates using bismuth octoate instead of $Bi(EC)_3$; **(b, c)** TEM images of the synthesized PtBi nanorods, using H_2PtCl_6 instead of $Pt(acac)_2$.

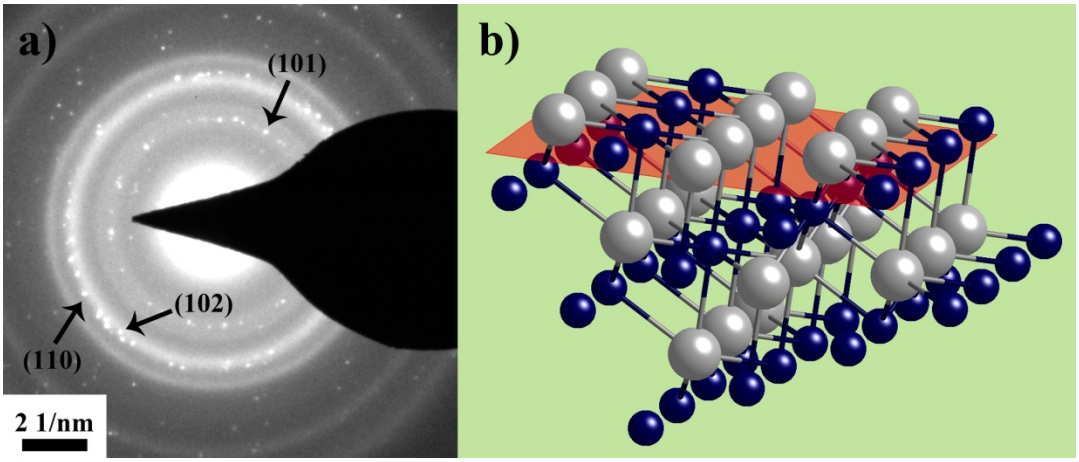

Fig. S3 (a) The electron diffraction pattern of PtBi NPLs. **(b)** The atom configuration of PtBi (101) lattice plane (Pt: smaller, Bi: Bigger).

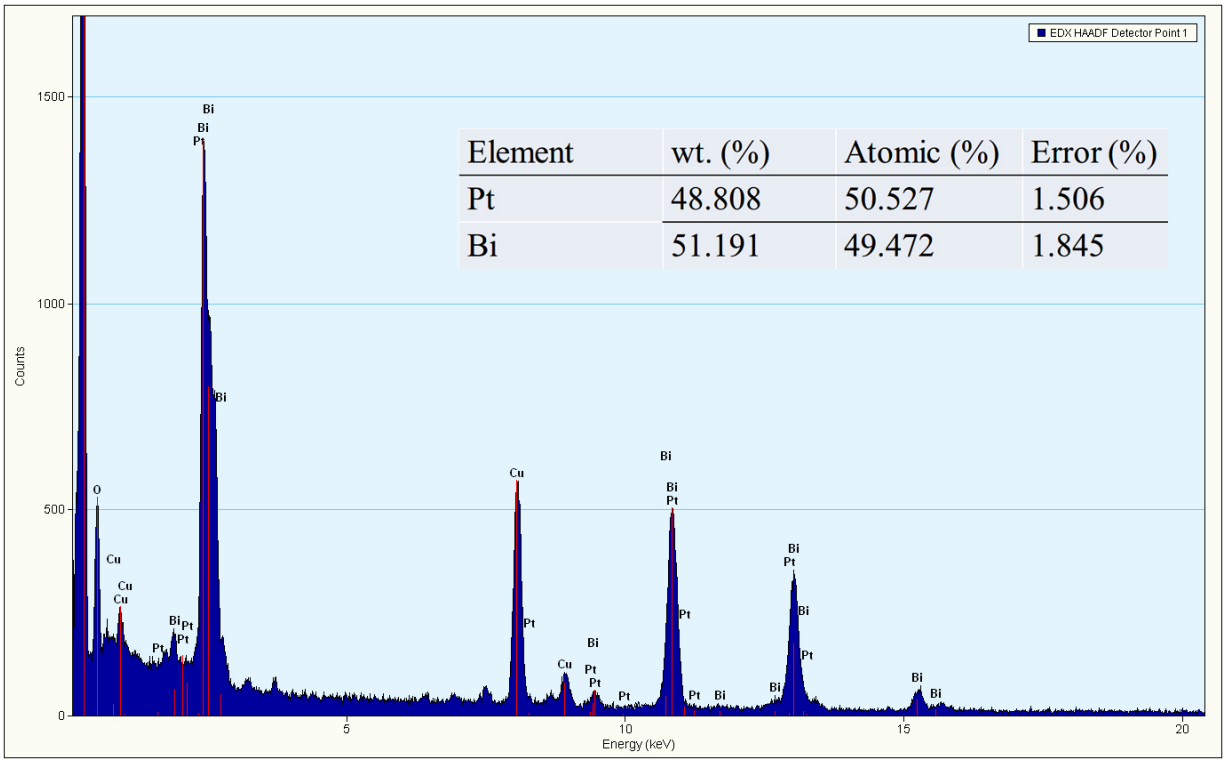

Fig. S4 EDS data of PtBi NPLs.

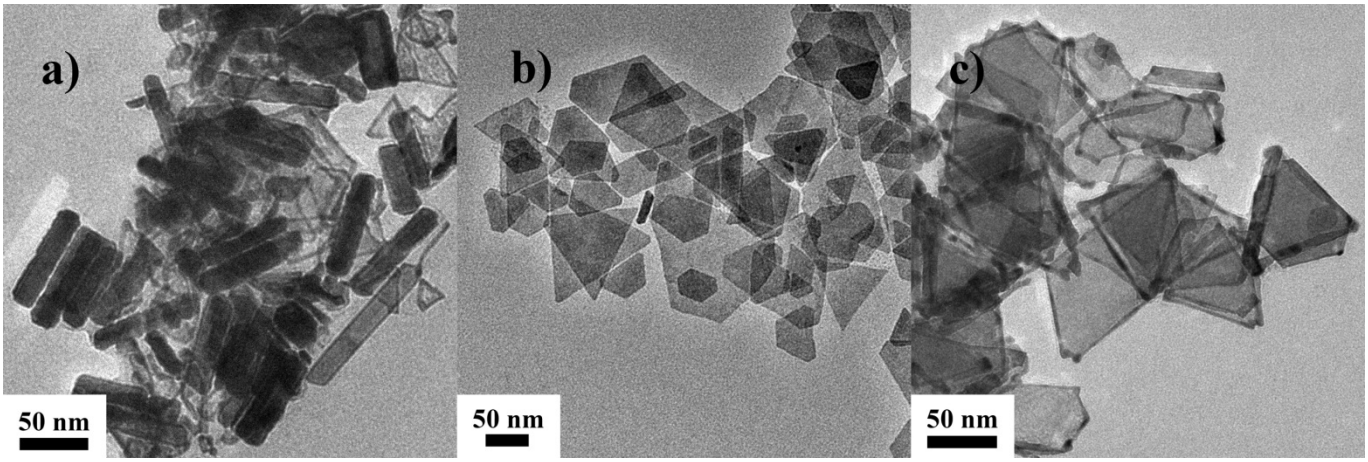

Fig. S5 TEM images of the synthesized PtBi NPLs using **(a)** NH_4F, **(b)** NH_4Cl and **(c)** NH_4I instead of NH_4Br.

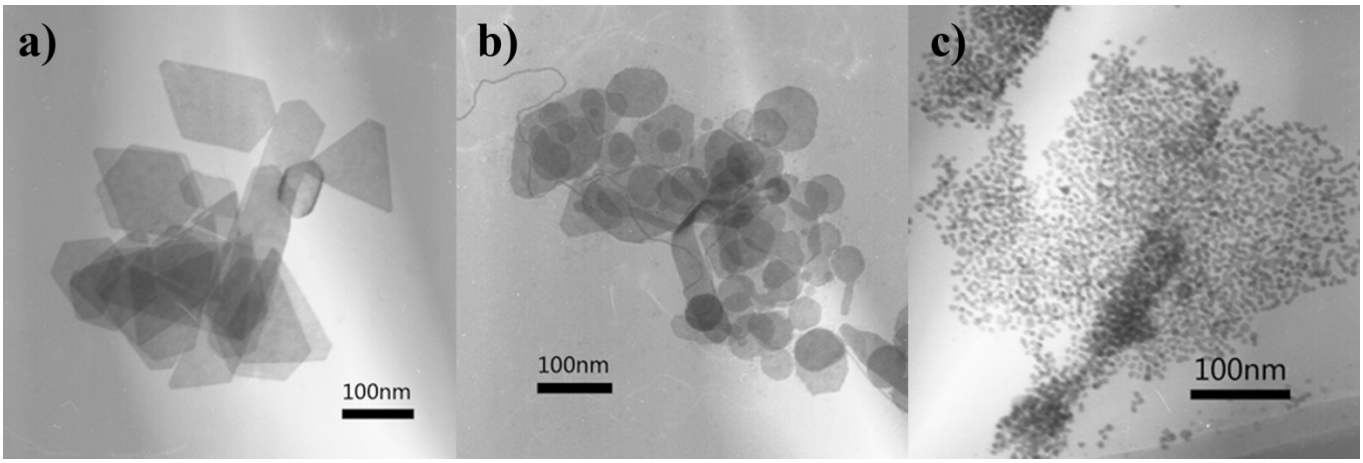

Fig. S6 TEM images of the synthesized PtBi NPs using **(a)** 1-bromododecane, **(b)** benzyl bromide and **(c)** N-bromosuccinimide instead of NH_4Br.

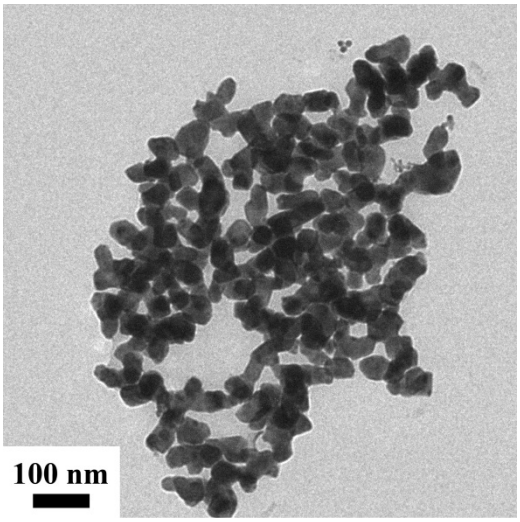

Fig. S7 TEM image of the synthesized PtBi NPs without NH_4Br.

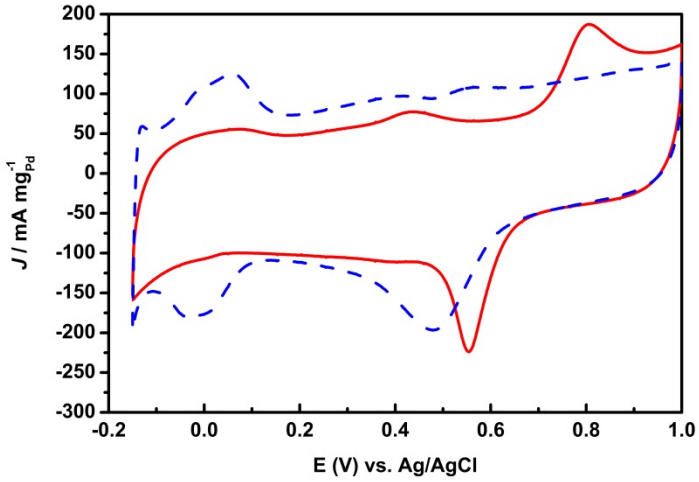

Fig. S8 CV curves of PdBi NWs/XC-72 (red solid) and commercial Pd/C (blue dash) in deaerated 0.5 M $HClO_4$.

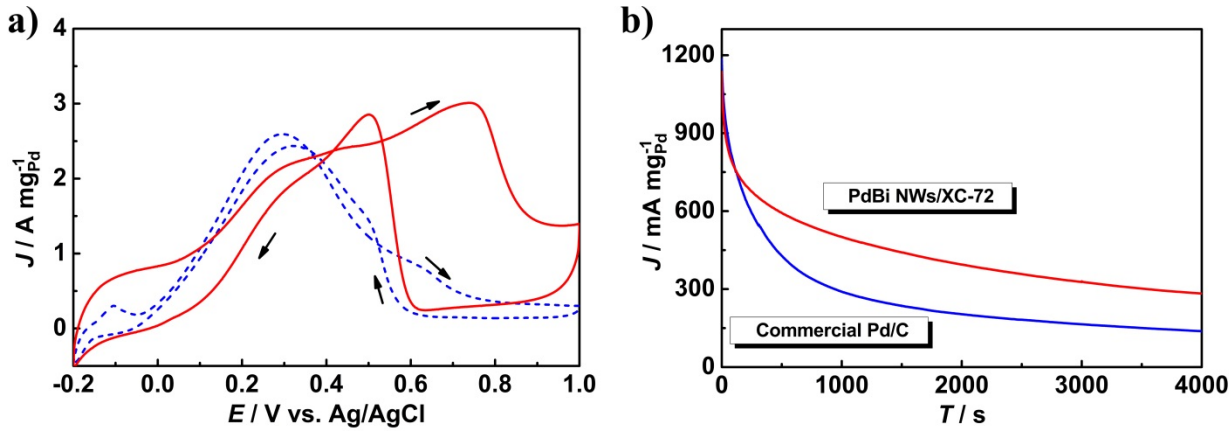

Fig. S9 (a) CVs of formic acid oxidation on PdBi NWs/XC-72 (red solid) and commercial Pd/C (blue dash). Arrows indicate the potential scan direction. **(b)** Current-time curves measured by chronoamperometry at 0.1V for PdBi NWs/XC-72 (red) and commercial Pd/C (blue).

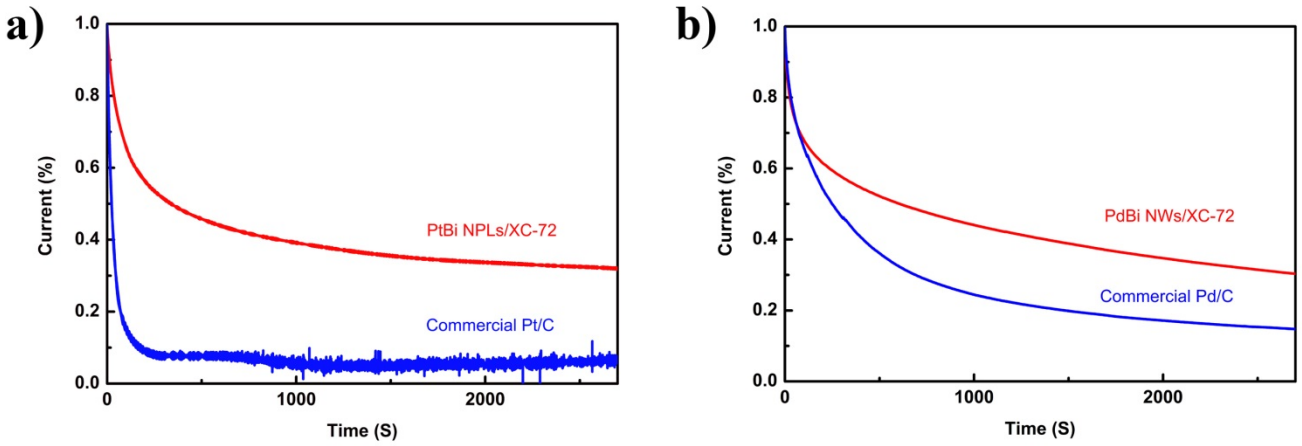

Fig. S10 Current-time curves measured by chronoamperometry at 0.1 V in 0.5 M $HClO_4$ containing 0.5 M HCOOH for PtBi NPLs/XC-72 and commercial Pt/C **(a)**, PdBi NWs/XC-72 and commercial Pd/C **(b)**, these measurements were normalized to the value relative to initial current in each catalyst.