Supplementary Information

Complex PbTe hopper (skeletal) crystals with high hierarchy

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Fig. S1 XPS spectrum of PbTe hopper crystals.



Fig. S2 SEM image showing the coexistence of the tower-like PbTe crystals and hopper crystals at 160 °C for 9 hours in a dilute solution (the amount of reactants: $Pb(NO_3)_2 = 1.25$ mmol, $Na_2TeO_3 = 1$ mmol and $KBH_4 = 2$ mmol).



Fig. S3 SEM image of PbTe at 160 °C for 24 hours in dilute solution (the amount of reactants: $Pb(NO_3)_2 = 1.25$ mmol, $Na_2TeO_3 = 1.25$ mmol and $KBH_4 = 2.5$ mmol).



Fig. S4 SEM image of PbTe at 160 °C for 24 hours (the amount of reactants: $Pb(NO_3)_2 = 2.5$ mmol, $Na_2TeO_3 = 2$ mmol and $KBH_4 = 4$ mmol).



Fig. S5 SEM image of PbTe at 160 °C for 9 hours (the amount of reactants: $Pb(NO_3)_2 = 5$ mmol, $Na_2TeO_3 = 4$ mmol and $KBH_4 = 8$ mmol).



Fig. S6 SEM image of dendritic PbTe crystals at 160 °C for 9 hours in a dilute solution (the amount of reactants: $Pb(NO_3)_2 = 1.25 \text{ mmol}$, $Na_2TeO_3 = 1 \text{ mmol}$, $KBH_4 = 2 \text{ mmol}$ and SDBS = 0.05 mmol).