Two-Dimensional Metallic SnB Monolayer as an Anode Material for Non-lithium-ion Batteries

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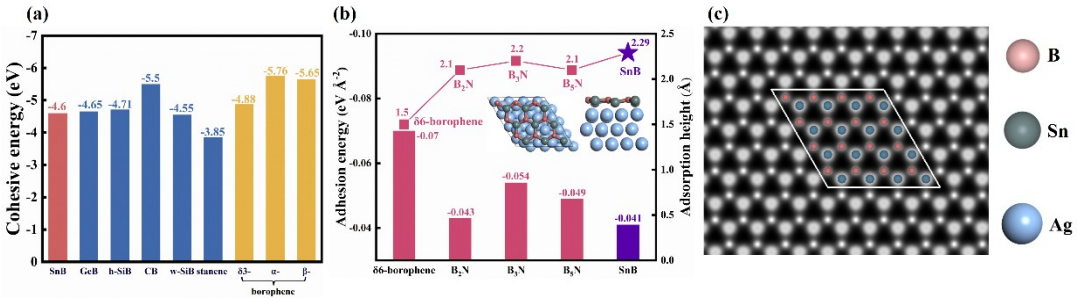

Fig. S1 (a) The comparison of cohesive energy between SnB monolayer and other two-dimensional material. (b) The adhesion energy and adsorption height between δ6-borophene, B_2N, B_3N, B_5N and the Ag (111) substrate. (c) Simulated STM image of SnB monolayer.

The volume expansions of Na_xSnB, K_xSnB and Mg_xSnB at equilibrium volumes were calculated and expressions is given by

$$\Delta V = \frac{V_n - V_0}{V_0} \times 100\% \quad (1)$$

where, $V_n$is the volume of Na_xSnB, K_xSnB and Mg_xSnB. V_0 is the volume of SnB monolayer.

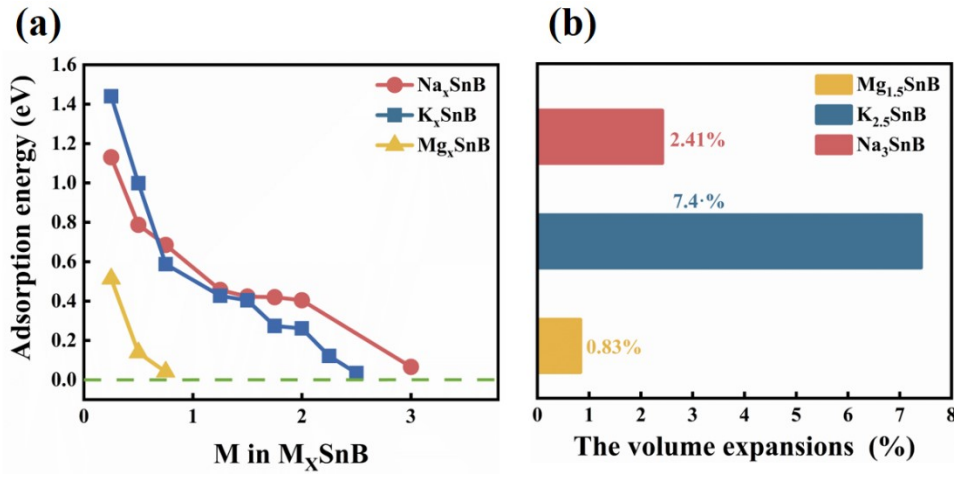

Fig. S2 (a) Adsorption energy in a Na, K, and Mg-ions adsorbed SnB monolayer as a function of Na, K, and Mg-ions concentration *x*. (b) Volume expansions of Na_3SnB, $K_{2.5}SnB$ and $Mg_{1.5}SnB$.