

Supplementary data

Evolution of the structures and stabilities of boron-doped lithium cluster cations: *ab initio* and DFT studies

Ying Li^{a)}, Yong-Jun Liu^{b)}, Di Wu^{a)},* Zhi-Ru Li^{a)}

a) State Key Laboratory of Theoretical and Computational Chemistry, Institute of Theoretical Chemistry, Jilin University, Changchun, 130023, China Email: wud@mail.jlu.edu.cn

b) Lanzhou Petrochemical Research Center, Petrochina Petrochemical Research Institute, Lanzhou, China

Figure S1. Molecular orbitals (isovalue = 0.02 au) of BeLi_n , BLi_n^+ and BLi_n ($n = 5-7$). The superscripts indicate spin multiplicity. The continuous lines represent doubly and singly occupied orbitals for close-shell and open-shell systems, respectively, the dotted lines correspond to unfilled states, the degenerate orbitals are arrayed parallel to each other, and the arrows indicate the α (up) and β (down) spin states.

