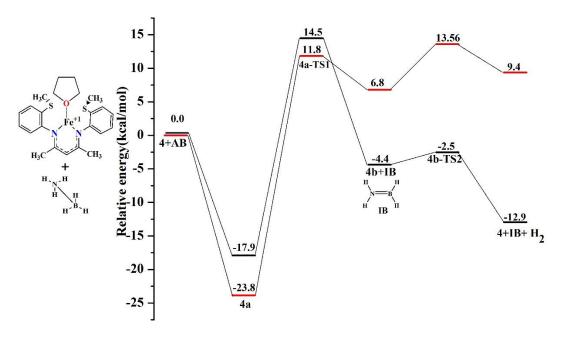
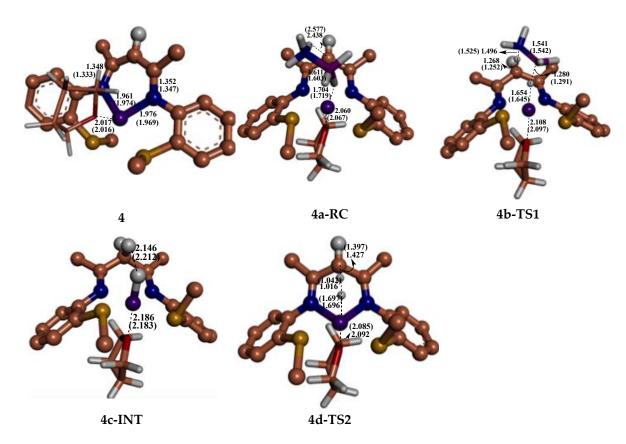
## Supplementary Materials: Title Exploring Promising Catalysts for Chemical Hydrogen Storage in Ammonia Borane: A Density Functional Theory Study

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**Figure S1.** (a) Reaction-coordinate profile of addition of catalyst "4" to "AB" via 4-TS1 to form "4b" and (b) H<sub>2</sub> release from the dihydrogenated product "4b." Gas-phase relative free energies (kcal/mol) and relative free energies in THF solvent are also indicated (by red bars).



**Figure S2.** Significant optimised geometries of important stationary points for the reaction coordinate of AB addition to Fe metal catalyst **4**. Important hydrogen atoms are shown for clarity.