(Supplementary information)

The ternary amide $KLi_3(NH_2)_4$: an important intermediate in the potassium compounds-added Li–N–H systems

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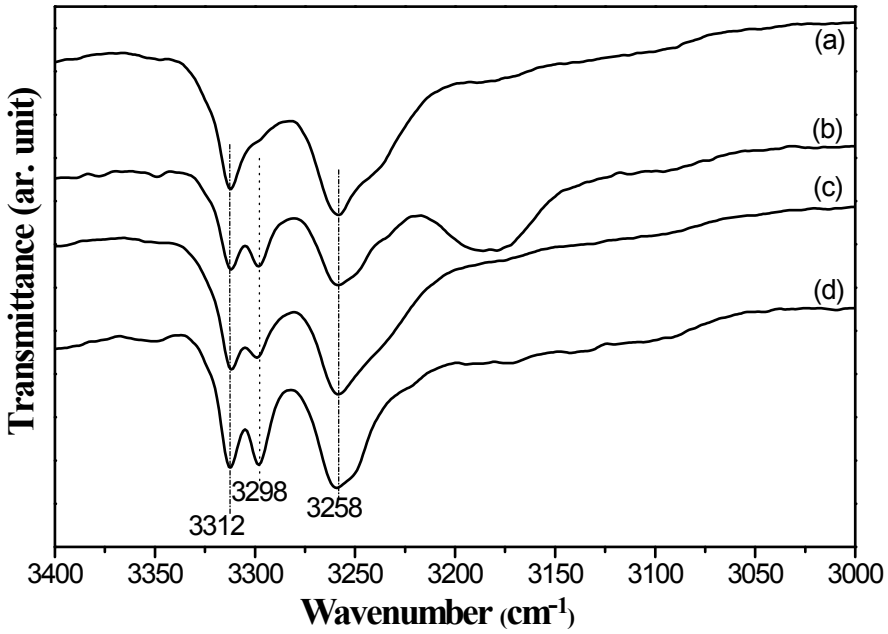

Fig. S1 FTIR of $KH/LiNH_2$ with molar ratio of 1/4 after ball milling (a) and treatment under Ar atmosphere at 200 °C for 48 hours (b); $KNH_2/LiNH_2$ with molar ratio of 1/3 after ball milling (c) and treatment under Ar atmosphere at 200 °C for 48 hours (d).

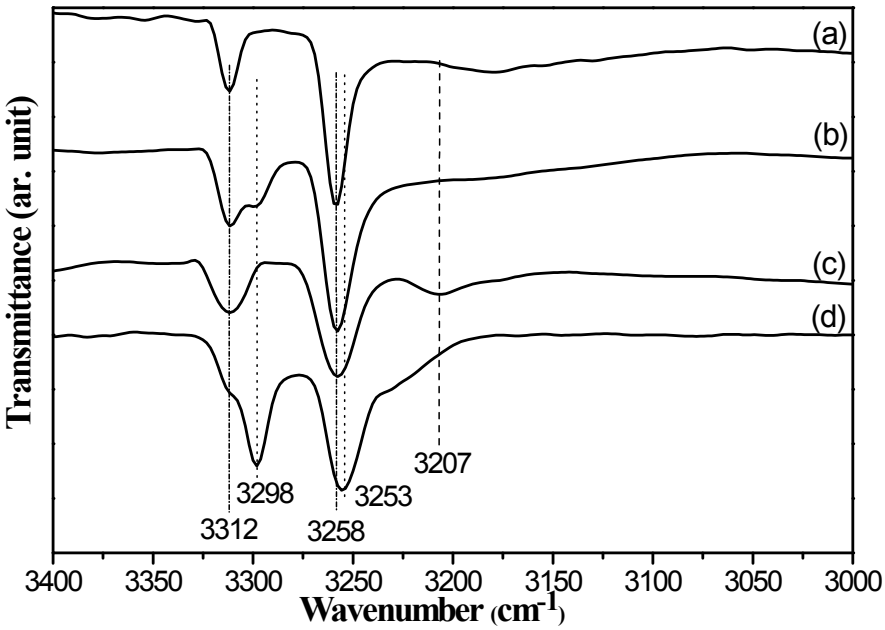

Fig. S2 FTIR of $KH/LiNH_2$ with molar ratio of 1/4 after hand milling (a) and treatment under Ar atmosphere at 200 °C for 48 hours (b); $KNH_2/LiNH_2$ with molar ratio of 1/3 after hand milling (c) and treatment under Ar atmosphere at 200 °C for 48 hours (d).

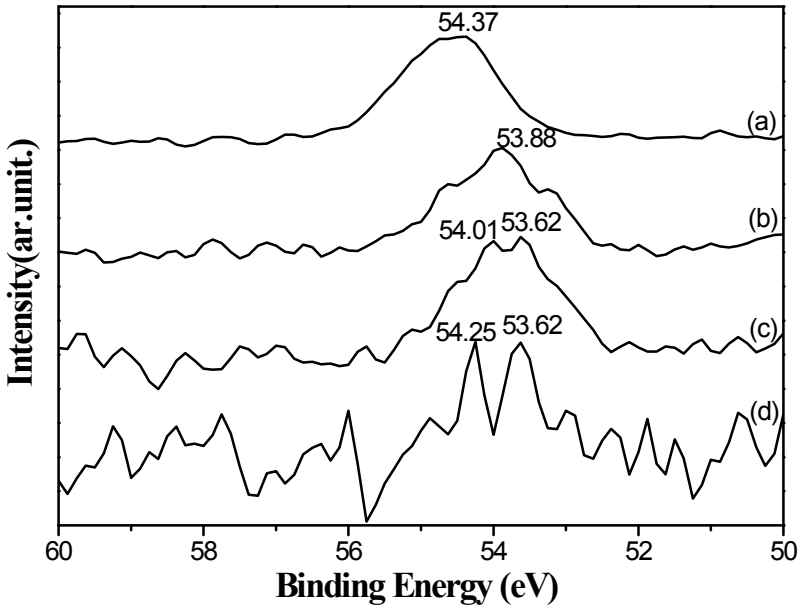

Fig. S3 XPS Li(1s) spectra of the raw $LiNH_2$ (a), the just synthesized $KLi_3(NH_2)_4$ single phase by ball milling (b), $KH/LiNH_2$ with molar ratio of 1/4 after hand milling and treatment under Ar atmosphere at 200 °C for 48 hours (c), $KNH_2/LiNH_2$ with molar ratio of 1/3 after hand milling and treatment under Ar atmosphere at 200 °C for 48 hours (d).

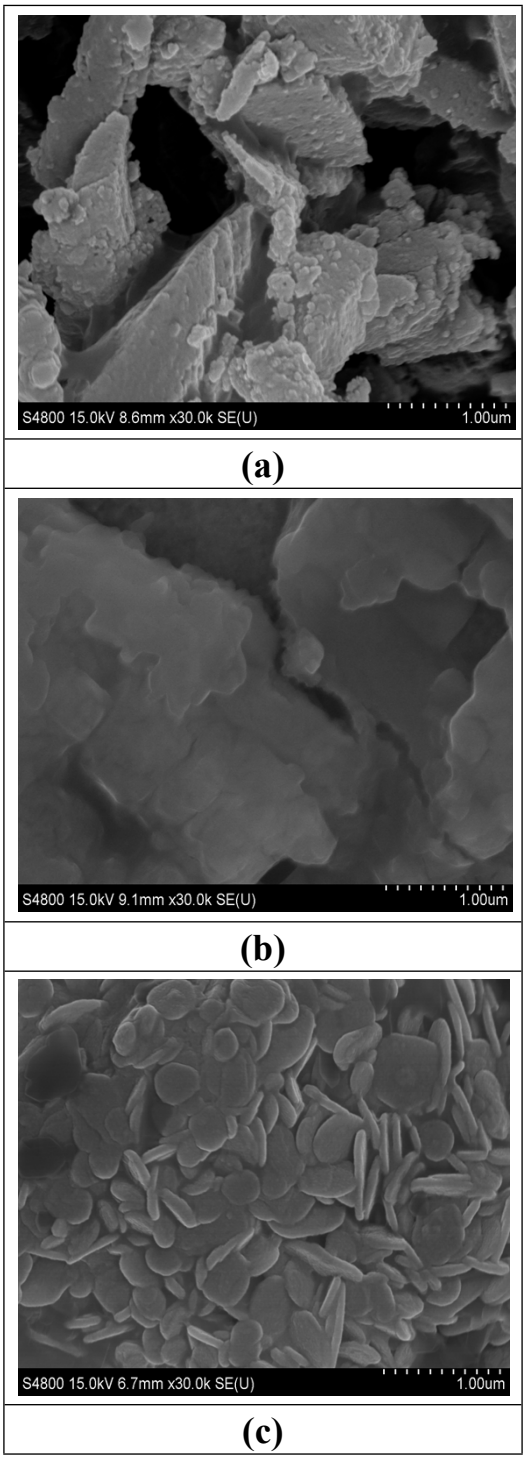

Fig. S4 SEM micrographs of the raw $LiNH_2$ (a)、raw KNH_2 (b) and the just synthesized $KLi_3(NH_2)_4$ by ball milling (c).