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## Supplementary information

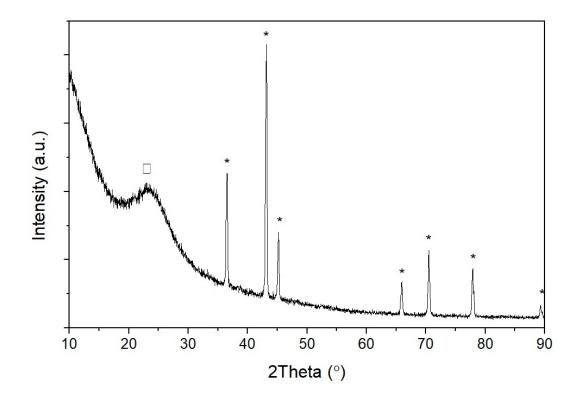
## Calcium hydride with aluminium for thermochemical energy storage applications

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**Figure S1.** XRD pattern of CaH<sub>2</sub>-Al<sub>2</sub> after PCI analysis (> 5 cycles) left in the desorbed state. Markers: \* CaAl<sub>2</sub>; • Amorphous hump due to poly(methylmethacrylate) (PMMA) airtight dome used to prevent oxygen/moisture contamination during data collection.  $\lambda = 1.79$  Å.