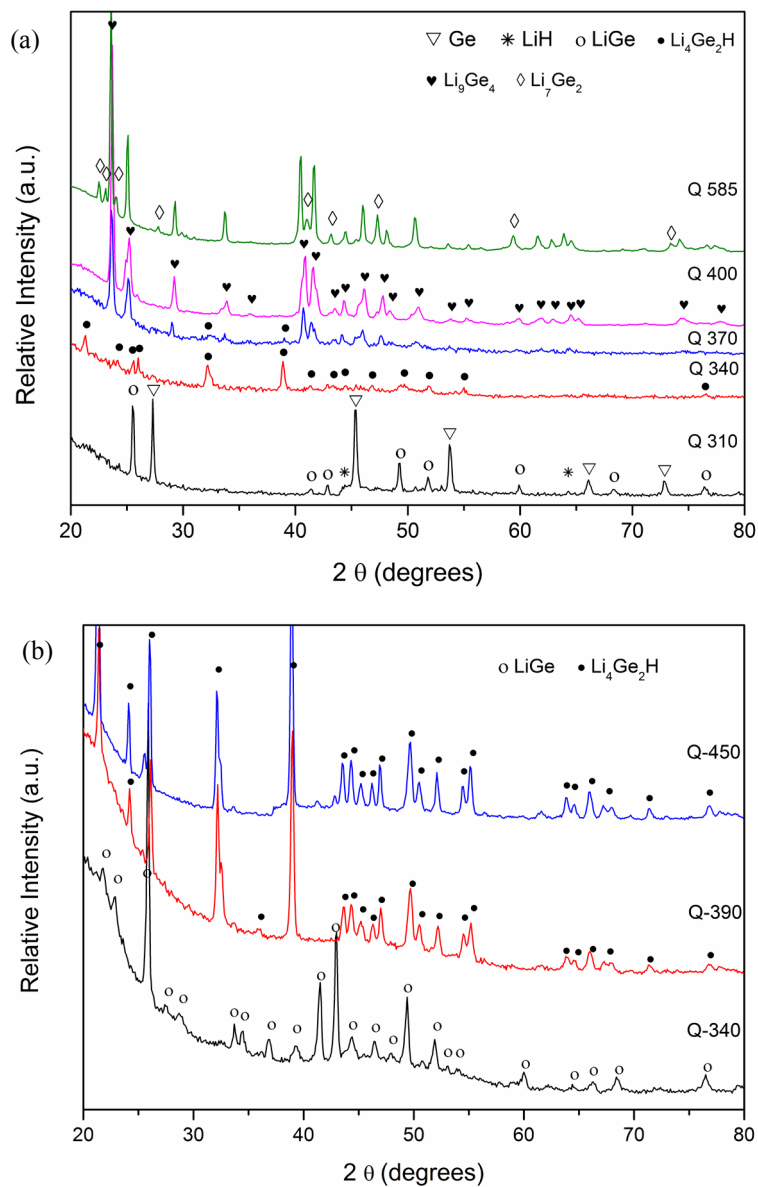
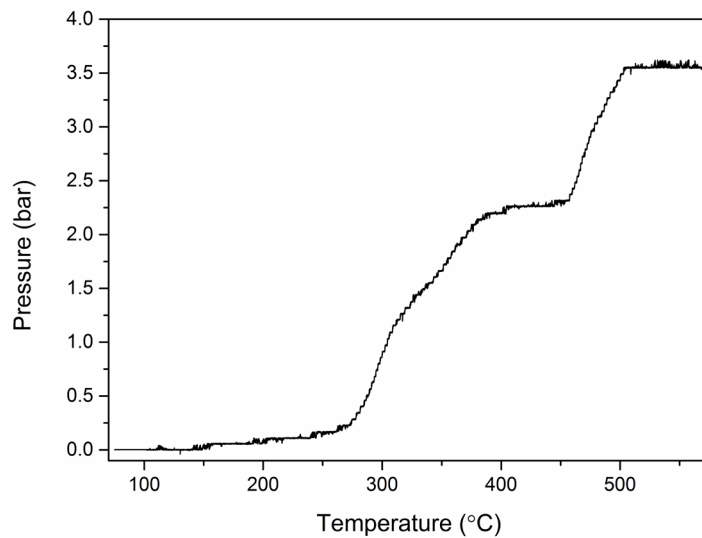


## Electronic Supplementary Information:



**Figure S1.** *Ex-situ* XRD of DSC products of 3LiH/Ge sample heated to (a) 310 °C, 340 °C, 370 °C, 400 °C, and 585 °C under Ar and (b) 340 °C, 390 °C, and 450 °C under H<sub>2</sub>.



**Figure S2.** Pressure profile of self-generated deuterium gas of 3LiD/Ge sample during heating up to 600 °C carried under static vacuum PND experiment.