Supporting Information

SU-75: A Disordered Ge_{10} Germanate with the pcu Topology

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Contents

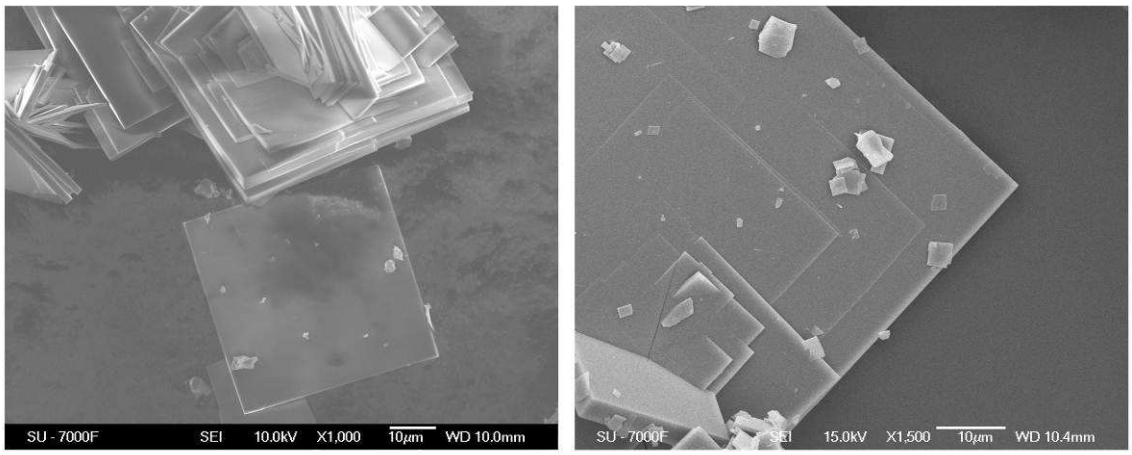

Figure S1 SEM images of SU-75. (a) The crystals synthesized with diethylenetriamine (dien) as the structure directing agent; (b) The crystals synthesized with diaminebutane (dab) as the structure directing agent.

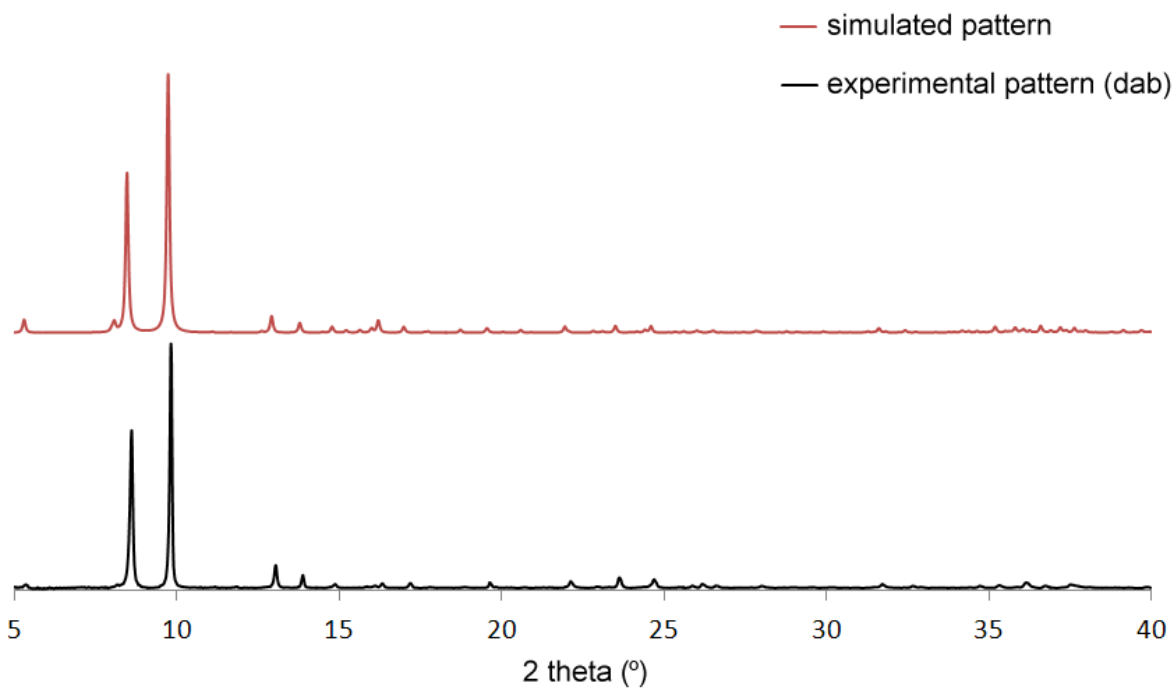

Figure S2 The experimental powder XRD pattern of SU-75(dab) compared to the simulated powder XRD pattern.

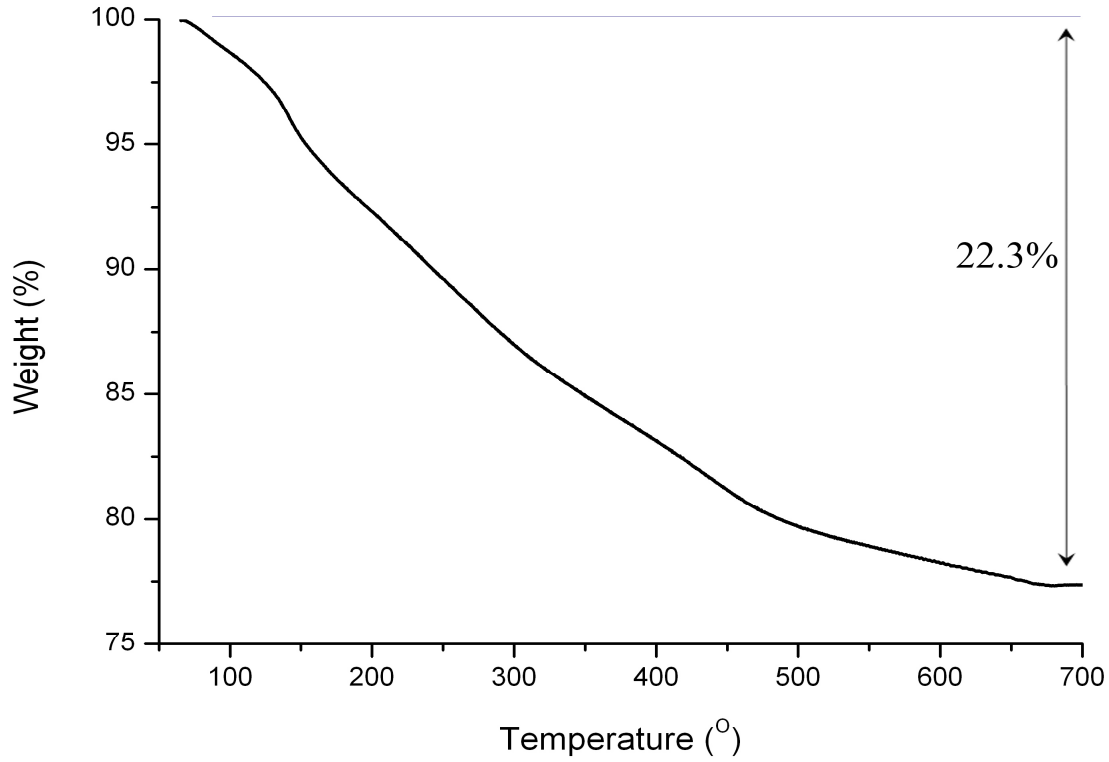

Figure S3 Thermogravimetric curve of SU-75(dien) performed in N_2 flow from 50 to 700 °C at a heating rate of 5 °C/min. The total weight loss of 22.3% between 50°C and 700°C was attributed to the loss of water and the dien molecules. The content of water and dien molecules calculated from the chemical formula 21.6 w.t% (n=5) or 22.8 w.t% (n=6), which is consistent with the TGA result.

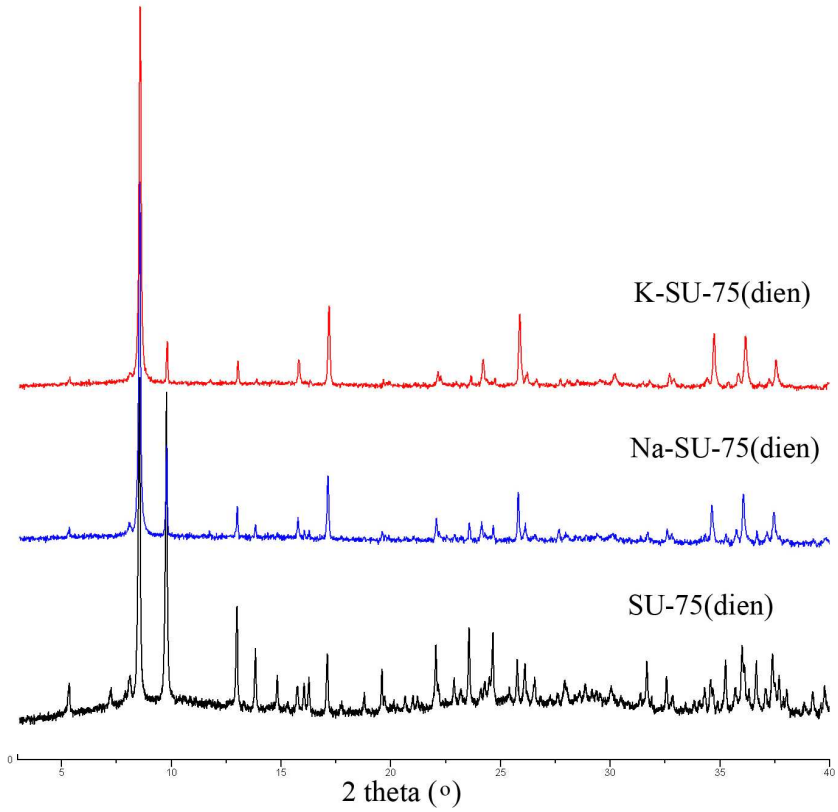

Figure S4 Powder XRD patterns of SU-75(dien) before and after ion-exchanging. The framework was kept after 50% of SDAs were exchanged by Na^+ or K^+.

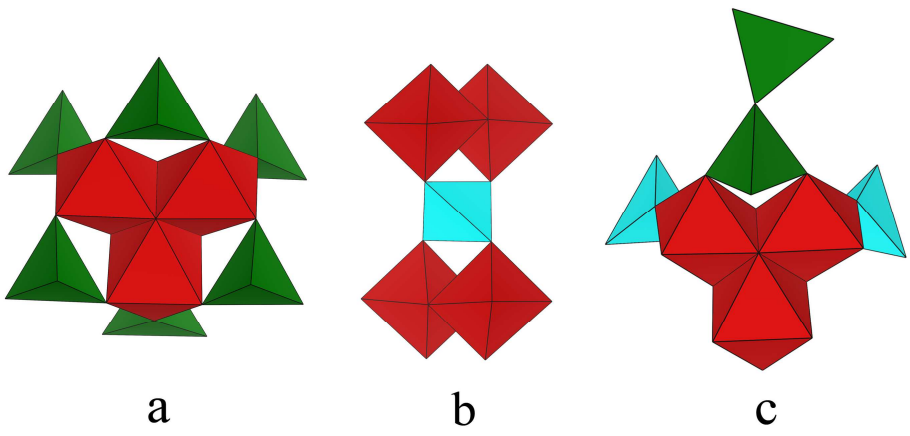

Figure S5 Different secondary building units (SBUs) used for describing the Ge_{10} germanates. (**a**) The Ge_{10} cluster in SU-75, (**b**) a Ge_5 building unit in LNM-1 and (**c**) a Ge_8 building unit in IM-14.

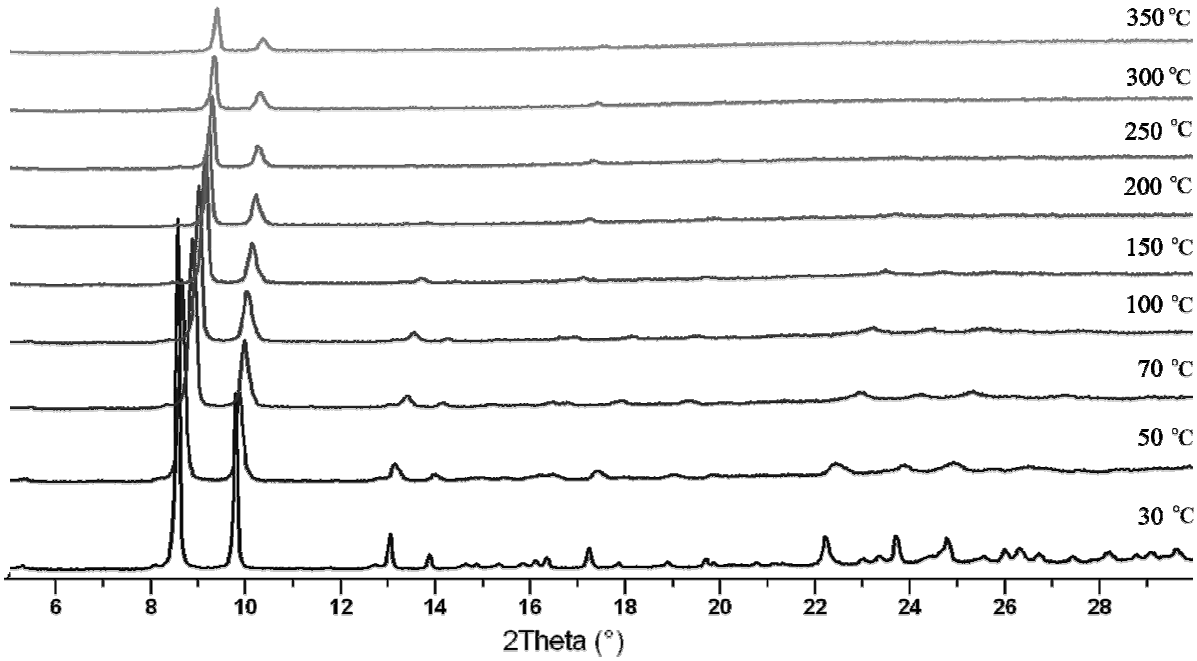

Figure S6 *In-situ* powder XRD patterns for SU-75. SU-75 was stable up to 50 ºC before the crystallinity started to degrade.

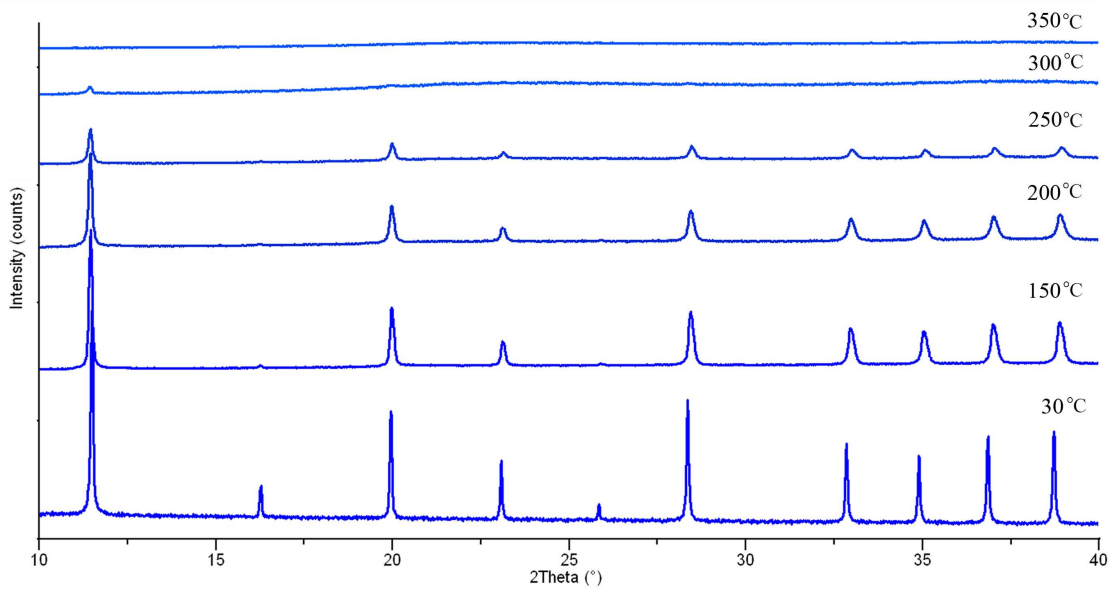

Figure S7 *In-situ* powder XRD patterns for LNM-1 (Ge-pharmacosiderite). LNM-1 was stable up to 250 ºC.