Supporting Information

Reversible Storage of Lithium in Three-Dimensional Macro-porous Germanium

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Figure S1. a) and b) SEM images of the intermediate product after the magnesiothermic reduction process.

Figure S2. Mercury intrusion porosimetry data of commercial Ge and p-Ge.

Figure S3. a) and b) SEM images of commercial Ge.

Figure S4. XRD patterns of GeO_2 and Ge (Ar/H_2) (reduced in Ar/H_2 (95/5 vol.%) atmosphere).

Figure S5. SEM images of Ge (Ar/H₂), reduced in Ar/H₂ (95/5 vol.%) atmosphere.

Figure S6. SEM images of Ge (comm-GeO₂), prepared by magnesiothermic reduction of commercial GeO₂.

Figure S7. Ge 3p and C 1s XPS spectra of p-Ge.

Figure S8. Representative voltage vs. specific capacity profiles of the constant current charge/discharge cycling of (a) commercial Ge, (b) Ge (Ar/H₂) and (c) Ge (comm-GeO₂) at a charge/discharge rate of 0.1C (1st cycle) and 1C (2nd and 50th cycle).

Figure S9. a) Representative voltage vs. specific capacity profiles of p-Ge at a charge/discharge rate of 0.2C, 1C and 5C; b) Representative voltage vs. specific capacity profiles of commercial Ge at a charge/discharge rate of 0.2C, 1C and 5C.

Figure S10. EDX mapping of the p-Ge composite electrode after 200 charge/discharge cycles at 1C.