## **Electronic Supplementary Information**

## The evolution of Ge nanostructures growth on silicon substrate by reduction of $\text{GeO}_2$

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Fig. S1 (a) TEM image of a Ge-particle/SiO<sub>2</sub>NW-tails assembled structure in Fig. 3b and (b) its corresponding room-temperature CL spectrum.



<sup>10</sup> Fig. S2 (a) TEM image of a Ge nanowire in Fig. 6a and inset is its fast Fourier transform; (b) TEM image of the drpolet-like end of a Ge nanowire in Fig. 6b, and (c) HR-TEM image form the indicated square.



Fig. S3 (a) TEM image of a Ge nanowire in Fig. 7c; (b) its corresponding SAED pattern from (a).

