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Supplementary Information

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Hedgehog-like polycrystalline Si as anode material for high performance Li-ion battery

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Figure 1s shows the columbic efficiency (CE) and specific capacity of the cell with hedgehog-like Si particle as anode at different charge/discharge rate. The CE decrease a little bit at higher rate but can keeps above 96.5%.

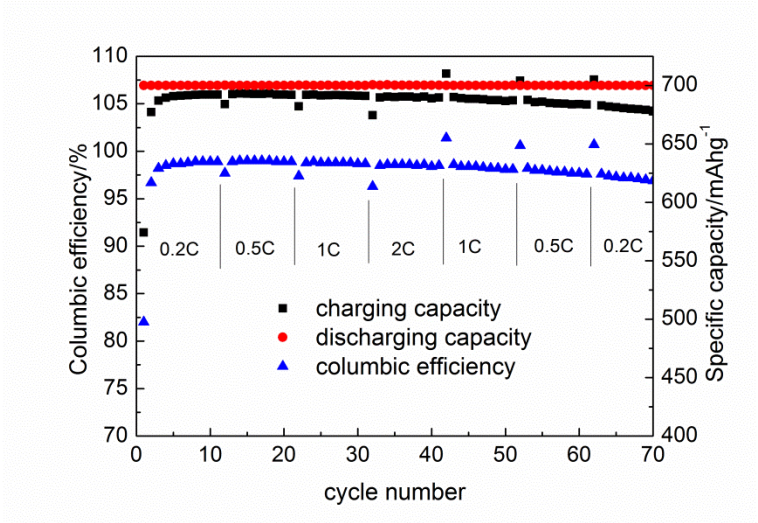

Figure 1s. The charge/discharge capacity and columbic efficiency at different rate.

Figure 2s has given the columbic efficiency and specific capacity of the cell with hedgehog-like Si particle as anode with a fixed discharging capacity of 1100 mAh g^{-1}. It can be seen that the CE reaches 79.4% in the 1st cycle, and has the comparable columbic efficiency in the followed cycles compared to that cycled at a discharging capacity of 700 mAh/g.

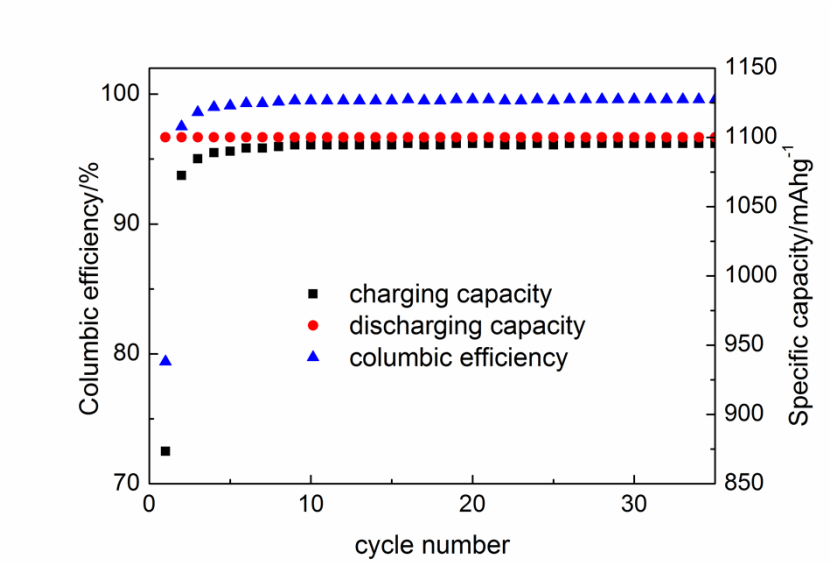

Figure 2s. The charging/discharging capacity and columbic efficiency at discharging capacity of 1100 mAh/g.

Figure 3s shows the charging/discharging capacity and columbic efficiency with a high active mass loading. The performance of battery can keep well.

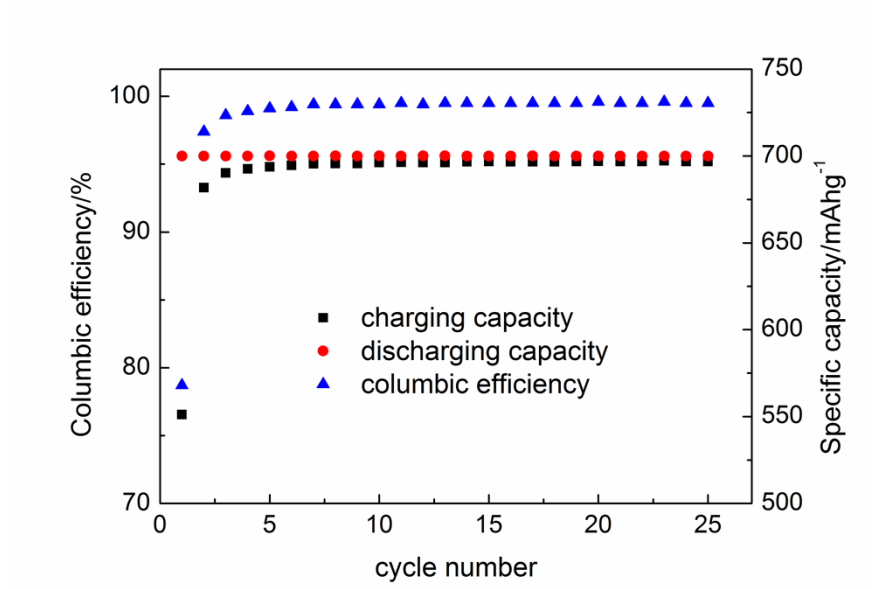

Figure 3s The charging/discharging capacity and columbic efficiency with a high active mass loading