

Supplementary Information

Te/C nanocomposites for Li-Te Secondary Batteries

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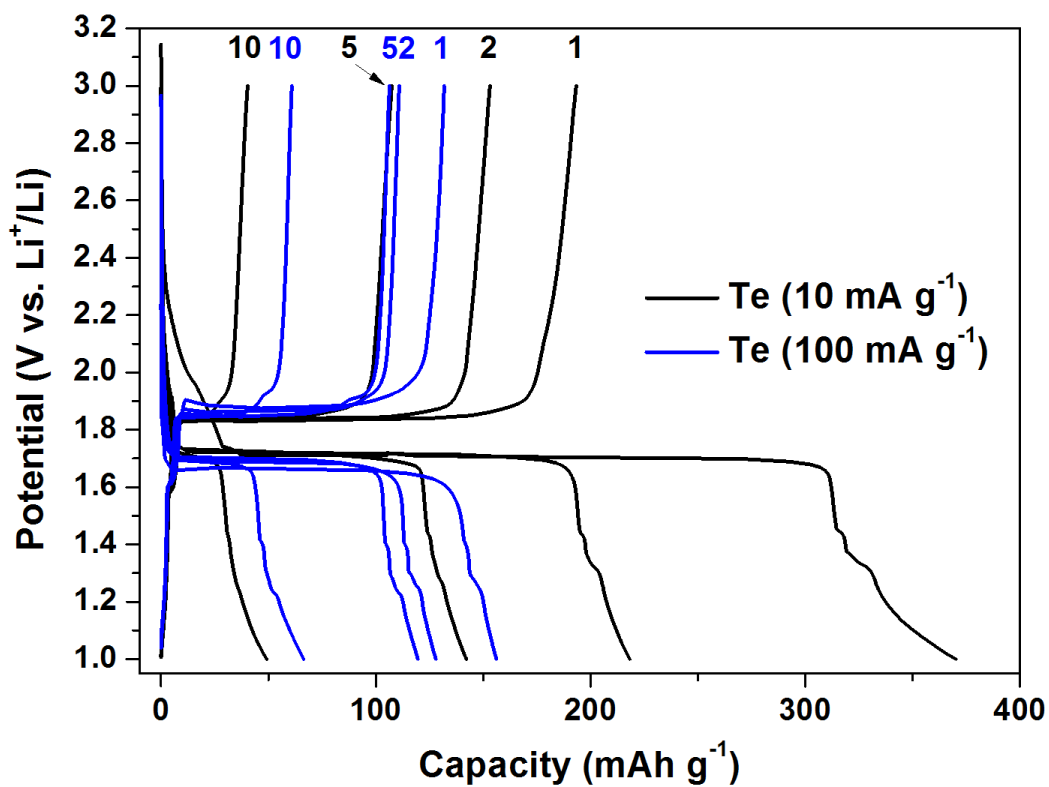


Figure S1. Voltage profiles (potential vs. gravimetric capacity) of Te electrode at various current densities of 10 and 100 mA g^{-1} .

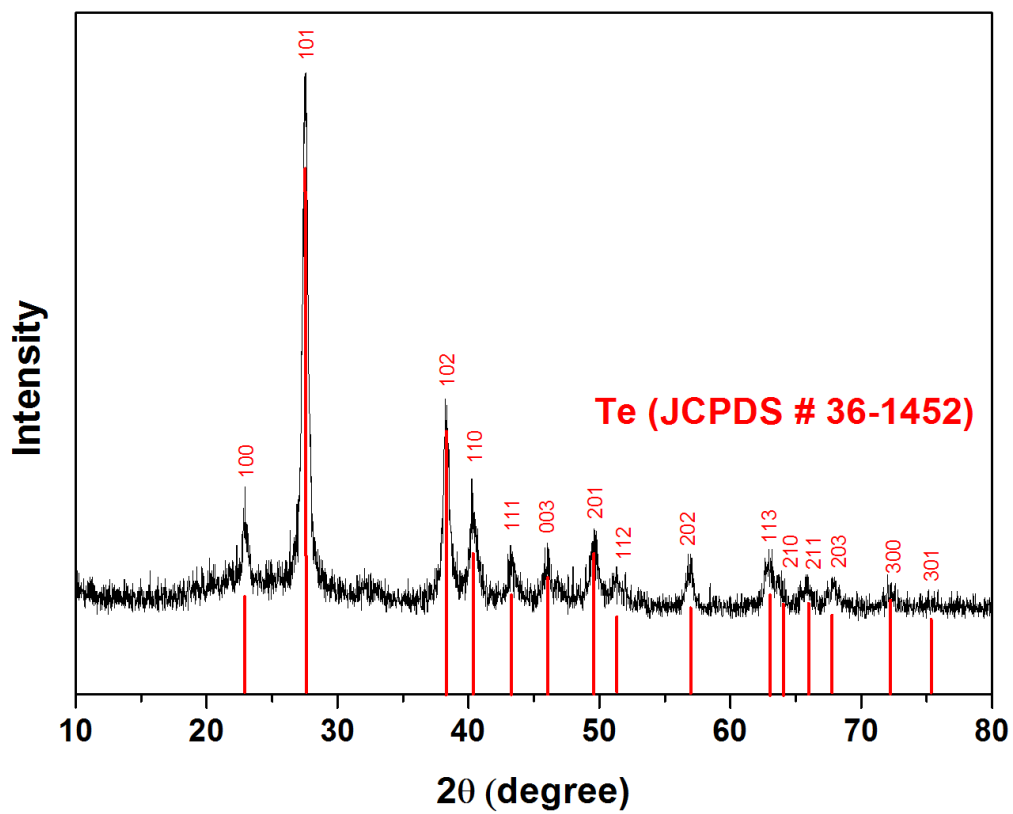


Figure S2. XRD pattern of the Te/C nanocomposite prepared by HEMM.

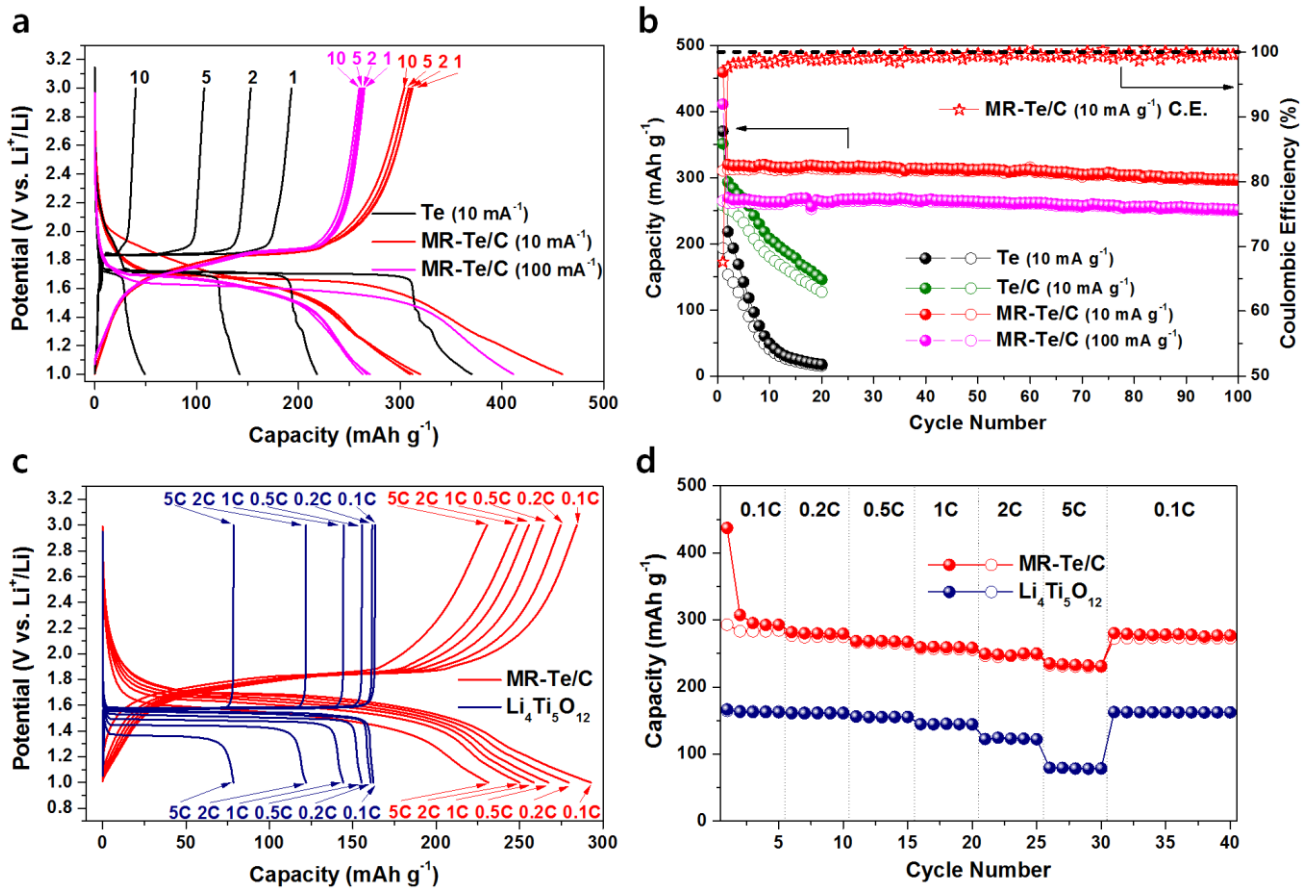


Figure S3. Electrochemical behaviors of MR-Te/C nanocomposite electrode on the basis of gravimetric capacity. (a) Voltage profiles of Te (current density: 10 mA g^{-1}) and MR-Te/C nanocomposite electrodes (current density: 10 and 100 mA g^{-1}). (b) Cycling performances of Te, Te/C nanocomposite, and MR-Te/C nanocomposite electrodes at cycling rates of 10 mA g^{-1} or 100 mA g^{-1} . (c) Voltage profiles at various C rates for $\text{Li}_4\text{Ti}_5\text{O}_{12}$ and MR-Te/C nanocomposite electrodes. (d) Plot of the discharge and charge capacity vs. cycle number for $\text{Li}_4\text{Ti}_5\text{O}_{12}$ and MR-Te/C nanocomposite electrodes at various C rates ($\text{Li}_4\text{Ti}_5\text{O}_{12}$ - 1C: 170 mA h g^{-1} , MR-Te/C nanocomposite - 1C: 300 mA h g^{-1}).

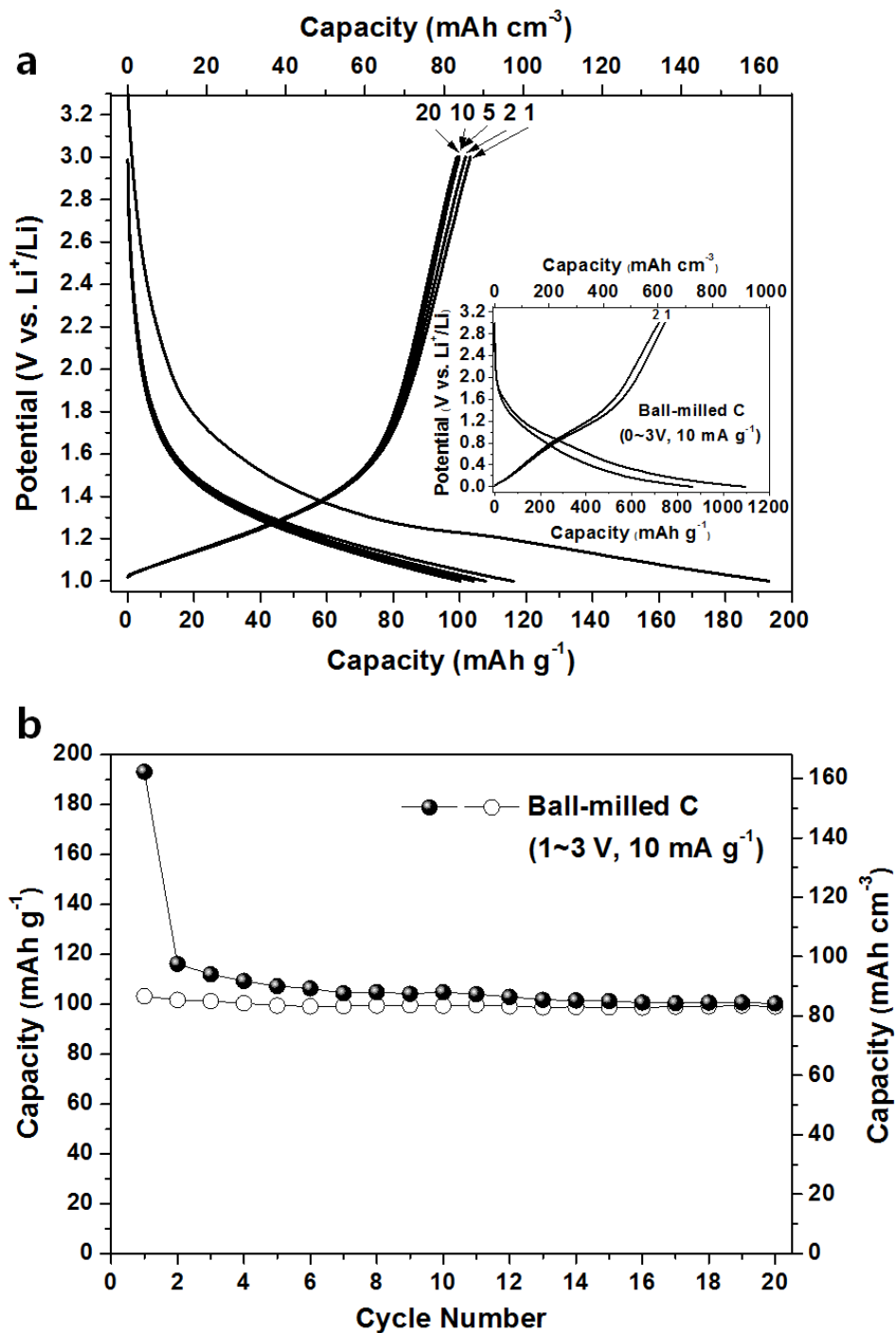


Figure S4. Electrochemical characteristics of ball-milled amorphous C (Super P®). (a) Plot of potential vs. gravimetric and volumetric capacities in the potential range between 1.0 and 3.0 V. (inset: voltage profile in the potential range between 0.0 and 3.0 V). (b) Cycling performance of ball-milled amorphous C electrode at cycling rate of 10 mA g⁻¹ in the potential range between 1.0 and 3.0 V.

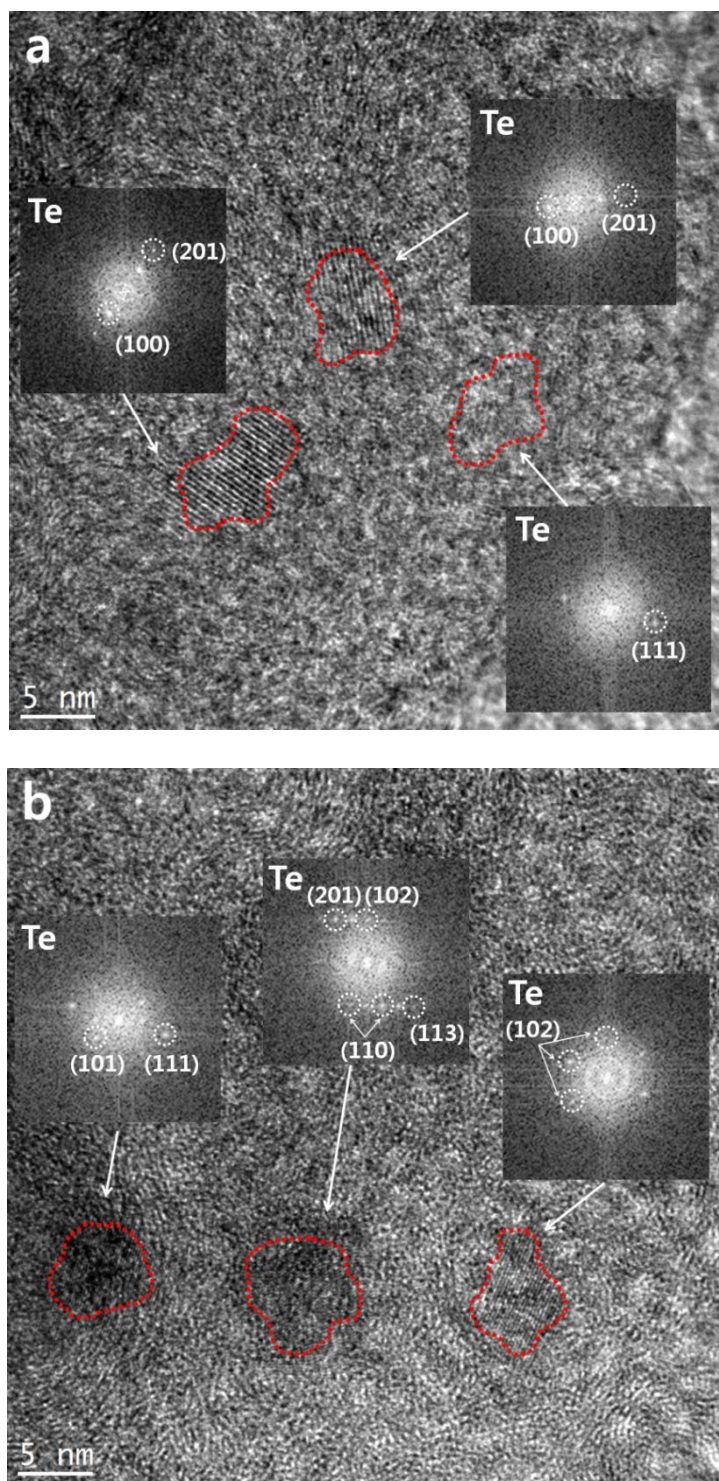


Figure S5. Characterization of Te nanocrystallites in MR-Te/C nanocomposite electrodes. (a) HRTEM image with FT patterns of the MR-Te/C nanocomposite electrode after the 10th cycle. (b) HRTEM image with FT patterns of the MR-Te/C nanocomposite electrode after the 50th cycle.