

Electronic Supplementary Information

Polydopamine coated TiO₂ nanofibers filled polyethylene oxide hybrid electrolyte for efficient and durable all solid state lithium ion batteries

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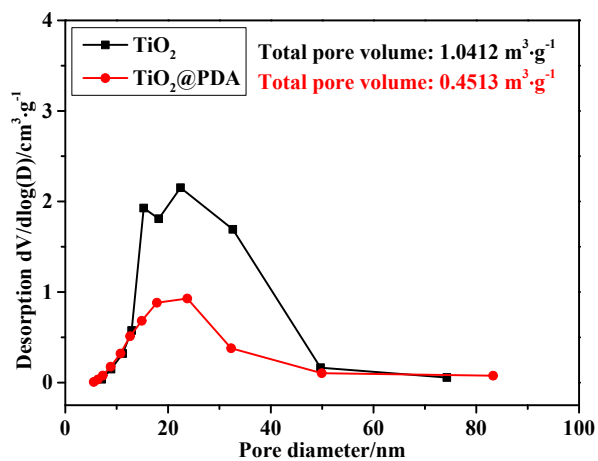


Fig.S1. The pore size distribution curves of TiO_2 and $\text{TiO}_2@PDA$ samples.

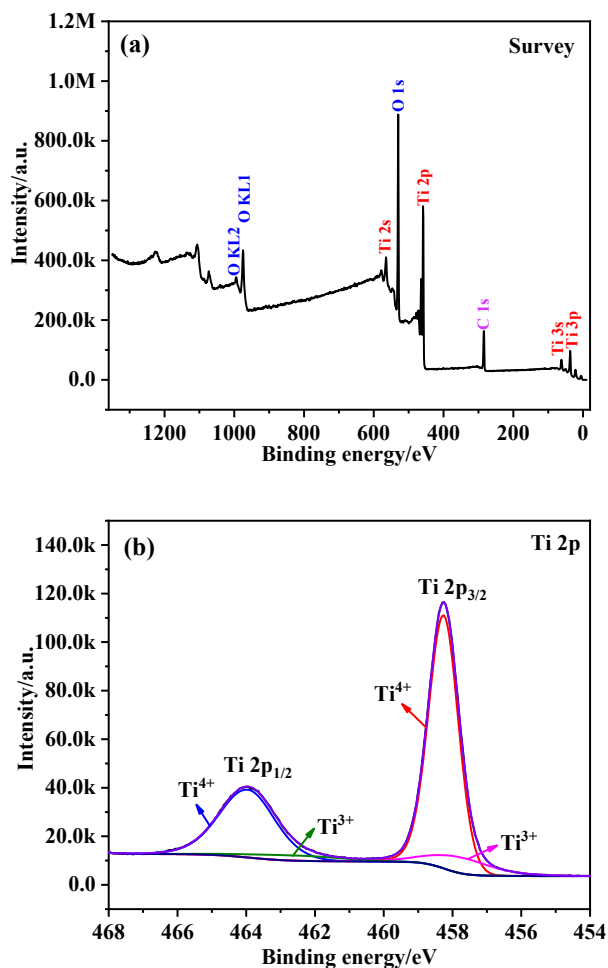


Fig. S2. (a) Survey and (b) Ti XPS patterns of TiO_2 materials.

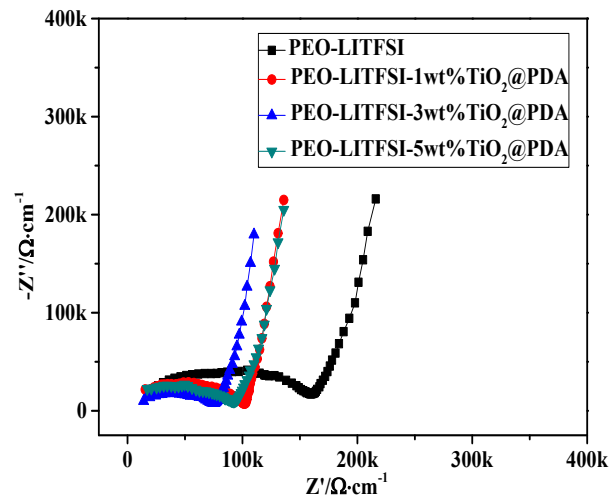


Fig. S3. The room temperature EIS spectrum of PEO-LITFSI of PEO-LITFSI-TiO₂@PDA solid polymer electrolyte.

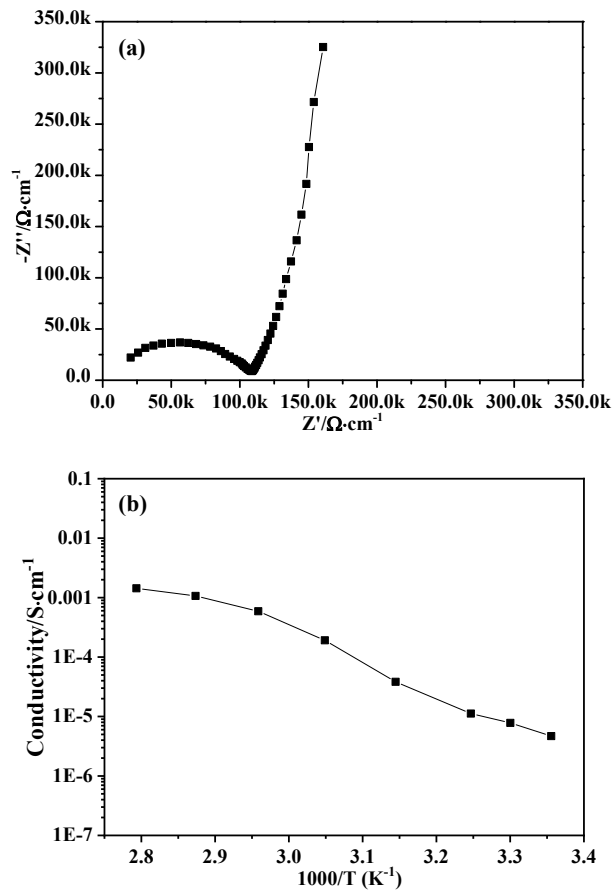


Fig. S4. The room temperature EIS spectrum (a) and ionic conductivity curve (b) of PEO-LITFSI-3wt% TiO₂ solid polymer electrolyte.

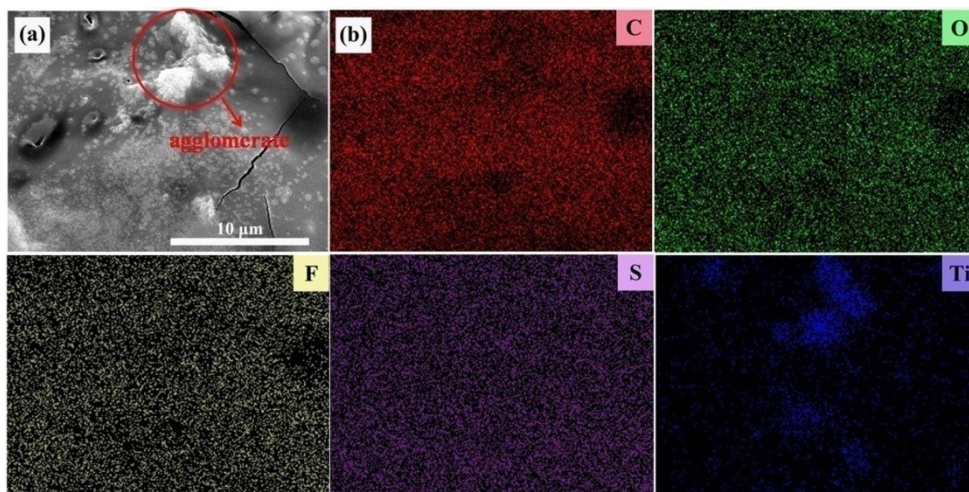


Fig. S5. (a) Surface SEM image and (b) surface ESD mapping of PEO-LITFSI-3wt% TiO₂ solid electrolytes.

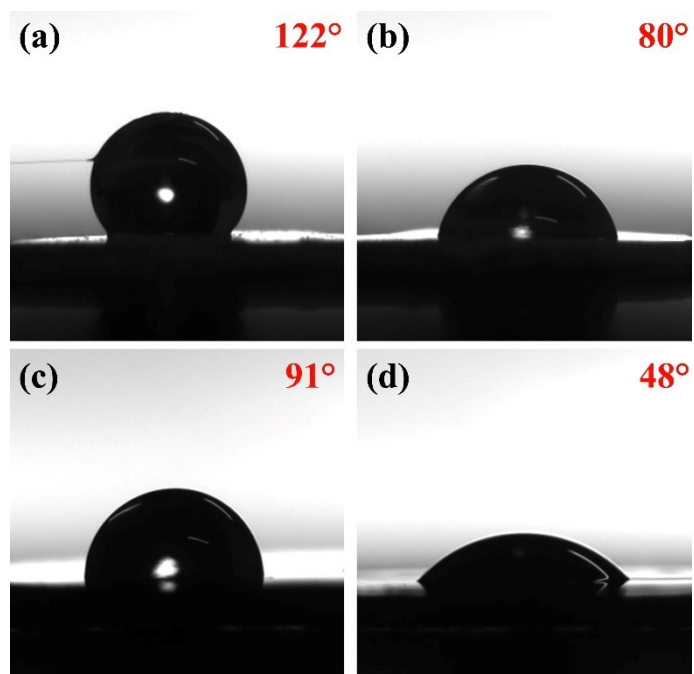


Fig. S6. Contact angles between PEO solutions and TiO₂ or TiO₂@PDA tablets: (a)-(c) 5 wt% PEO solution; (b)-(d) 2.5 wt% PEO solution.

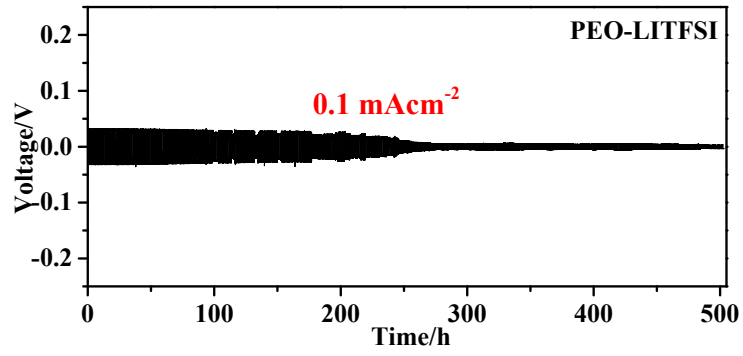


Fig. S7. The Li plating/stripping profiles of Li/PEO-LITFSI /Li symmetric cells measured at the current density of 0.1 mA cm^{-2} .

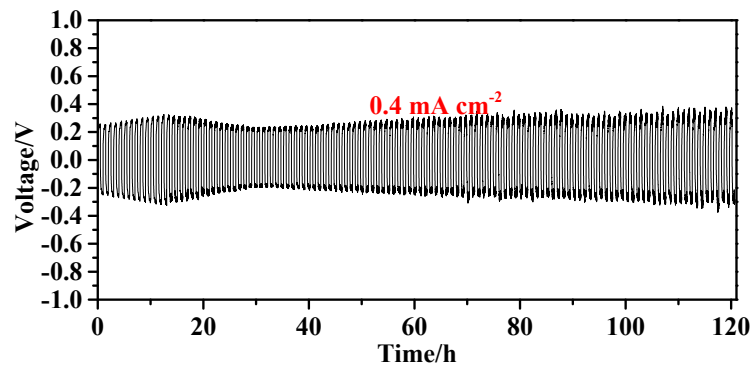


Fig. S8. The Li plating/stripping profiles of Li/SCE/Li symmetric cell measured at the current density of 0.4 mA cm^{-2} .

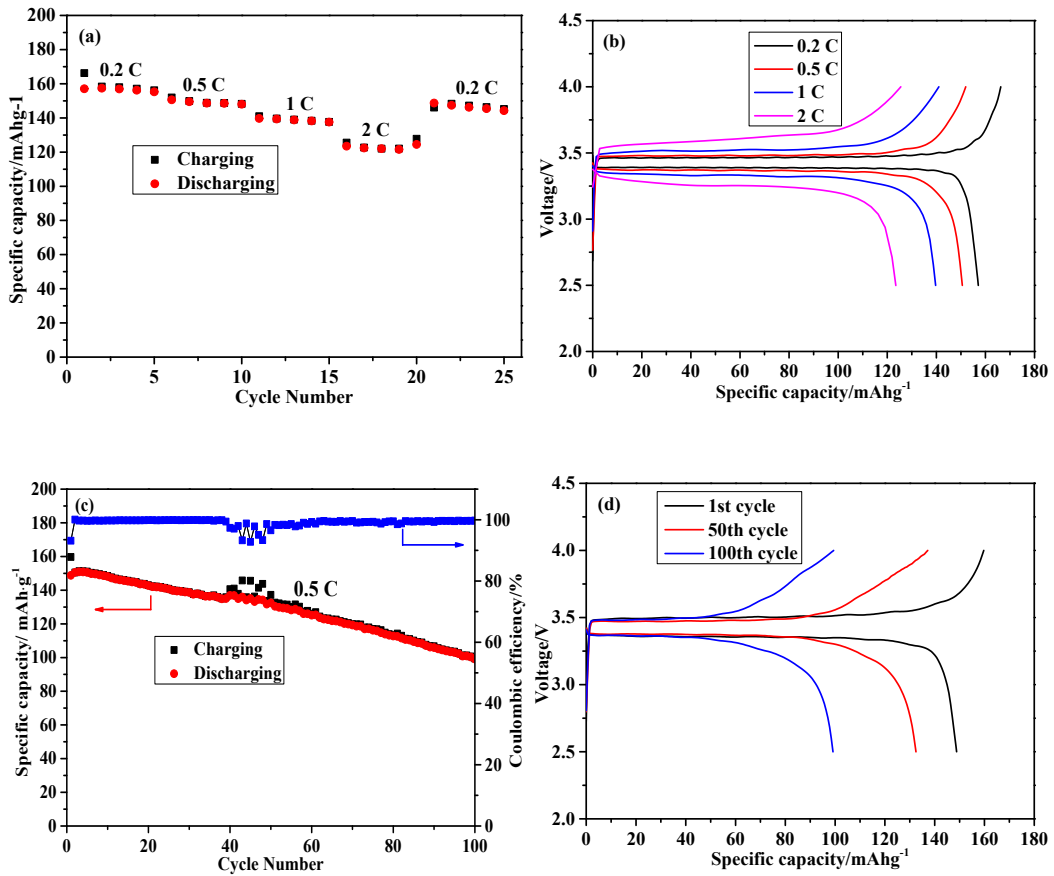


Fig. S9. (a) Rate performance and (b) charging-discharging curves of LiFePO₄/Li ASSLIB with PEO-LITFSI solid electrolyte; (c) Cycling performance and (d) charging-discharging profiles of LiFePO₄/Li ASSLIB measured at 0.5 C.

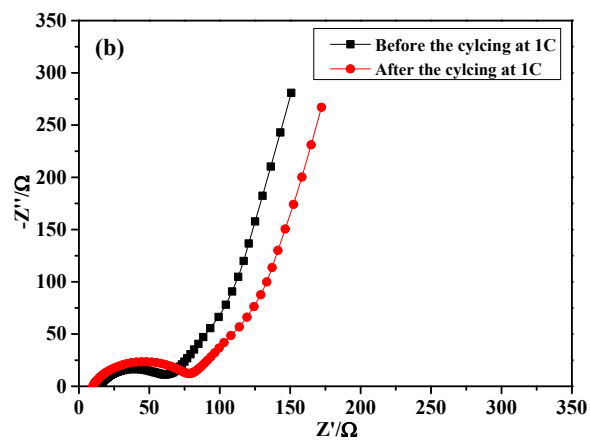
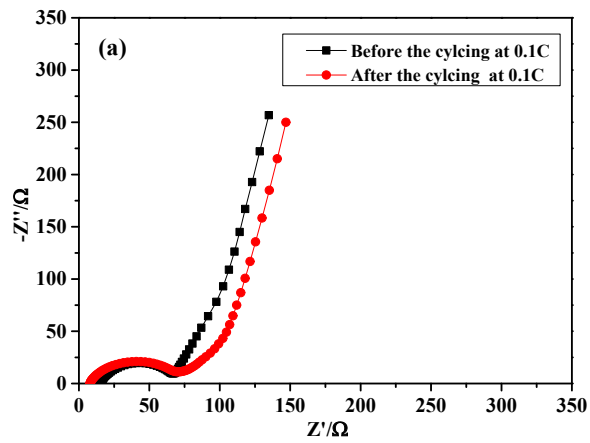


Fig. S10. AC impedance spectra of $\text{LiFePO}_4/\text{SPE}/\text{Li}$ cells measured before and after the charge-discharge cycling at different current densities.