Supporting Information

Exploration of $K_2 Ti_8 O_{17}$ as the Anode Materials for Potassium-ion Batteries

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Fig. S1. (a) The XRD pattern of the bulk $K_2Ti_8O_{17}$ prepared by solid state method; (b) The SEM image of the bulk $K_2Ti_8O_{17}$.



Fig. S2. EDS analysis of the heat-treated $K_2Ti_8O_{17}$.



Fig. S3. (a) The 1st, 2nd, 3rd and 10th discharge/charge curves of the bulk $K_2Ti_8O_{17}$ at the current density of 20 mA g⁻¹ in the voltage range of 0.01 ~ 3 V versus K⁺/K; (b) Cycling performance at the current density of 20 mA g⁻¹.



Fig. S4. (a) XPS spectra of Ti 2p after 50 cycles when charged to 3.0 V; (b) XPS spectra of Ti 2p after 50 cycles when discharged to 0.01 V.



Fig. S5. EIS of the $K_2Ti_8O_{17}$ electrodes before cycle and after 3 cycles.