Electronic Supplementary Information

Electrochemical Elaboration of Electrodes and Electrolytes for 3D Structured Batteries

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**S1 A** XRD diffractogram of Al nano-rods deposited with TiO$_2$ at 200°C of reaction temperature for 150 cycles. The peaks of TiO$_2$ (Anatase phase) are indexed.
S1 B XRD diffractogram of Al nano-rods deposited with TiO$_2$ at 300°C of reaction temperature for 75 cycles. The peaks of TiO$_2$ (Rutile phase) are indexed. * are the peaks position of TiO$_2$ anatase phase.
S2 A Evolution of capacity and rate capability as a function of cycle number and the cycling current. Two different range of cycling voltages, 1 V to 2.4 V and 1 V to 2.9 V were used. The electrode active material was deposited with ALD method at 200°C for 150 cycles.

S2 B Evolution of capacity and rate capability as a function of cycle number and the cycling current. Two different range of cycling voltages, 1 V to 3 V and 1.4 V to 2.4 V were used. The electrode active material was deposited with ALD method at 300°C for 75 cycles.