

Supporting Information

Europium modified TiO₂ as a high-rate long-cycle life anode material for lithium-ion batteries

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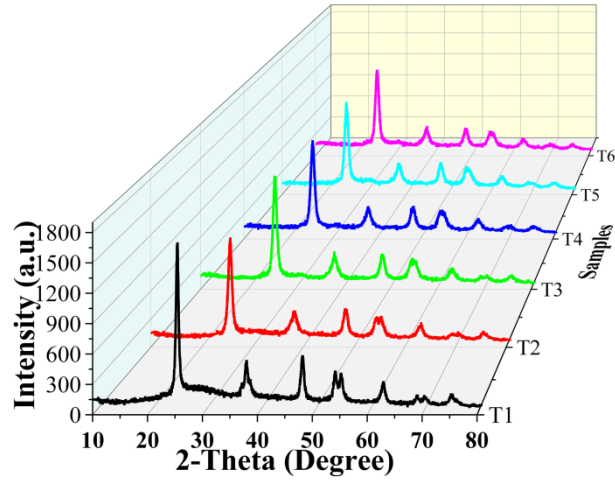
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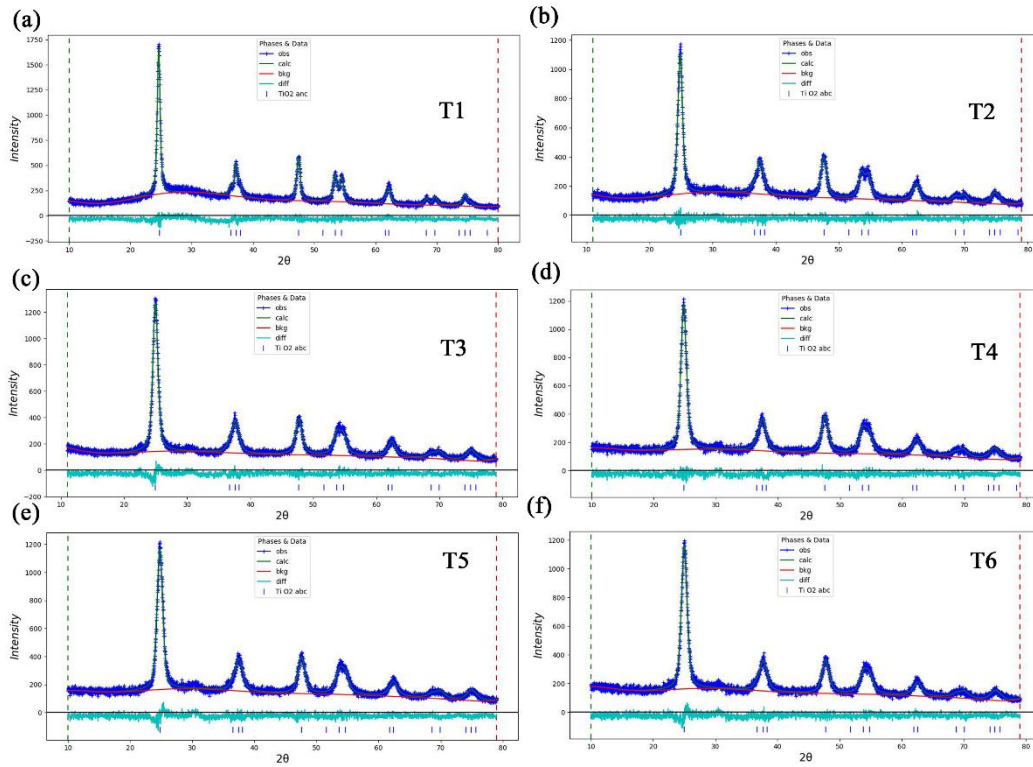
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FigS1. XRD patterns of the as-prepared T1 to T6 with different europium doping contents.



FigS2. (a-f) Rietveld refined fits using XRD data of $Ti_{1-x}Eu_xO_2$ ($x=0, 0.02, 0.04, 0.06, 0.08, \text{ and } 0.01$).

T1: $R_{wp} = 8.60\%$ and $GOF = 1.23$, T2: $R_{wp} = 8.18\%$ and $GOF = 1.04$, T3: $R_{wp} = 8.11\%$ and $GOF = 1.06$,

T4: $R_{wp} = 8.04\%$ and $GOF = 1.07$, T5: $R_{wp} = 7.81\%$ and $GOF = 1.07$, T6: $R_{wp} = 8.04\%$ and $GOF = 1.09$. GSAS-II

was employed to perform refinement.

Table S1 Impedance parameters of the T1-T6 electrodes

Sample	R_s/Ω	R_{ct}/Ω	W_o/Ω	$D_{Li^+}/cm^2 s^{-1/2}$
T1	3.12	216.50	169.70	2.15×10^{-13}
T2	3.33	169.50	105.80	7.05×10^{-12}
T3	4.20	121.60	83.60	1.39×10^{-11}
T4	3.43	185.90	128.30	3.11×10^{-12}
T5	3.10	221.40	233.50	8.77×10^{-12}
T6	2.60	233.90	240.60	2.88×10^{-12}

R_s : solution impedance, R_{ct} : charge transfer impedance, W_s : Warburg impedance, CPE: constant phase angle element.