Unravelling The Role of ALD Al_2O_3 and TiO_2 Protective Coatings on Lithium-Ion Battery Electrodes (Supplementary information)

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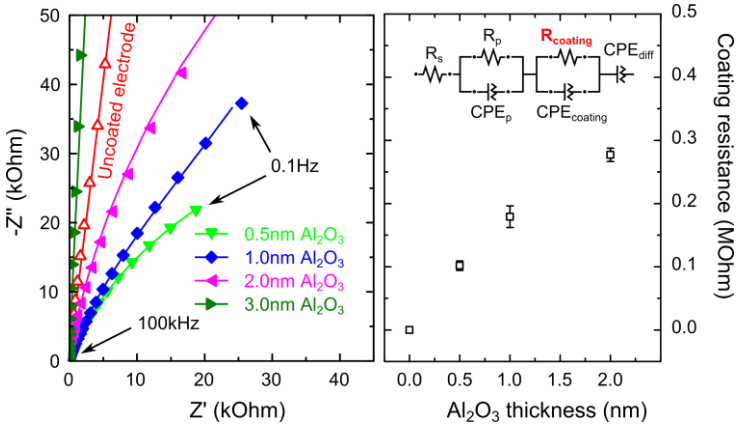

Figure 1: (left) Electrochemical impedance of ultrathin ALD Al_2O_3 coatings on a thin-film rutile TiO_2 electrode (markers), with the equivalent circuit shown resulting in a good fit (lines). **(right)** The fitted coating impedance.

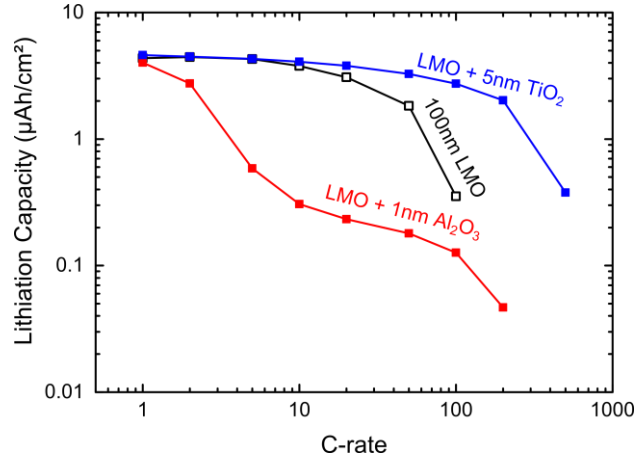

Figure 2: Rate capability of uncoated and ALD coated 100nm $LiMn_2O_4$ thin-film electrode in the 3.5-4.5V vs Li^+/Li potential range.

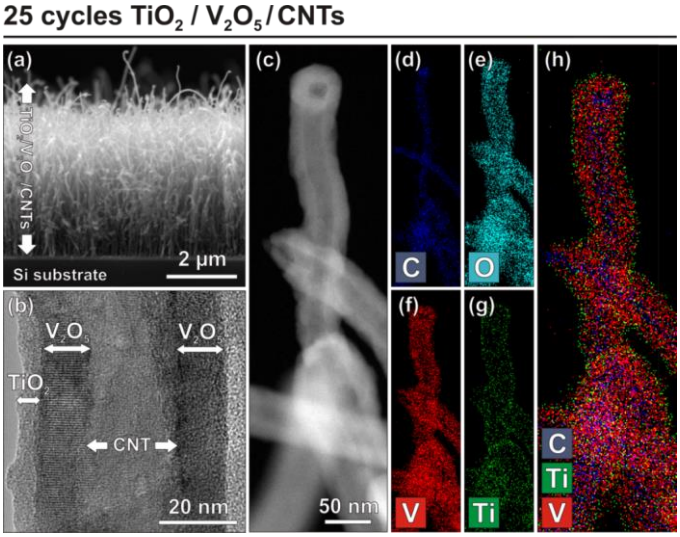

Figure 3: (a) SEM image of 25 ALD cycles TiO_2 coated V_2O_5/CNTs cross-sectional view. HRTEM (b) and HAADF-STEM (c) image of a 25 ALD cycles TiO_2 coated V_2O_5/CNTs. (d-h) EDX elemental mapping reveals the conformality.

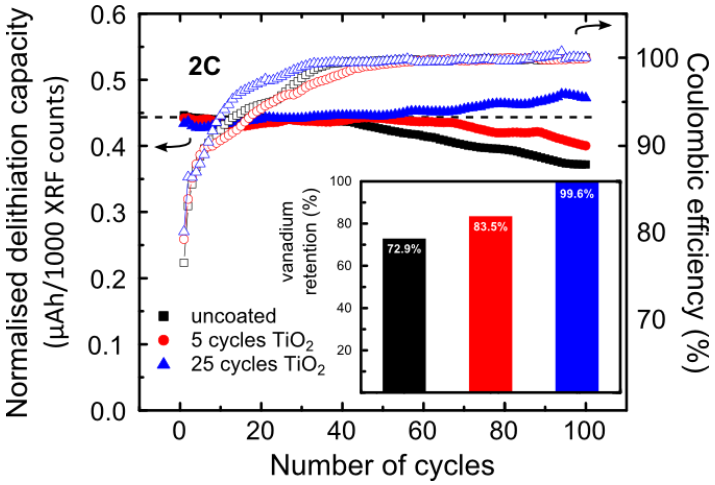

Figure 4: Capacity evolution and coulombic efficiency of the uncoated and coated V_2O_5/CNTs over cycling at a C-rate of 2C. The inset demonstrates the extent of the vanadium dissolution.