

Supporting Information

Optimized atomic layer deposition of homogeneous, conductive Al₂O₃ coatings for high-nickel NCM containing ready-to-use electrodes

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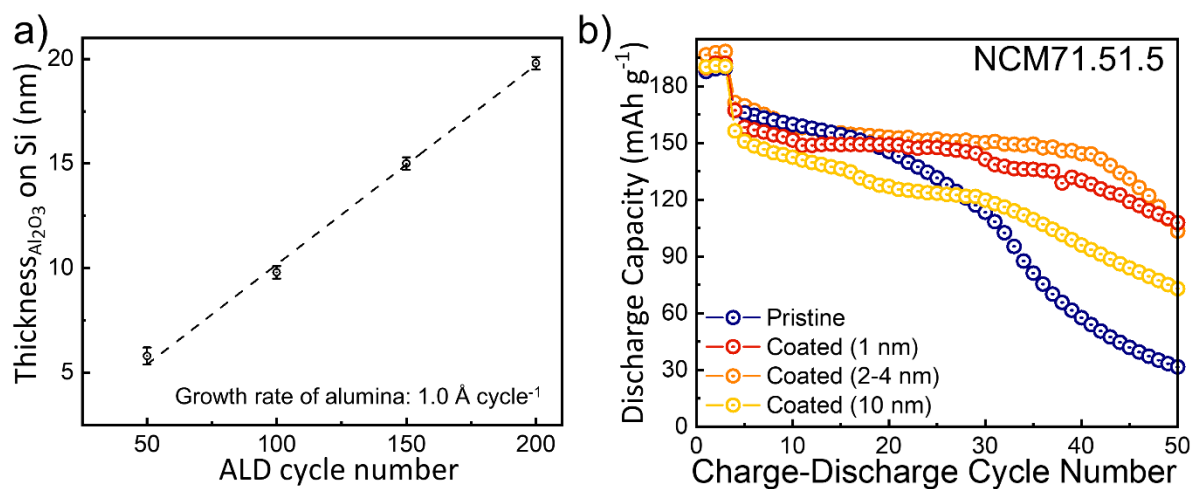


Fig. S1: (a) Thickness of the Al_2O_3 layer as a function of the number of ALD cycles deposited on Si substrates. The thickness was determined using XRR. The determined growth rate is about 1 \AA per cycle. (b) Comparison of the long-term cycling stability for pristine and coated samples (NCM71.51.5) with different coating thicknesses.

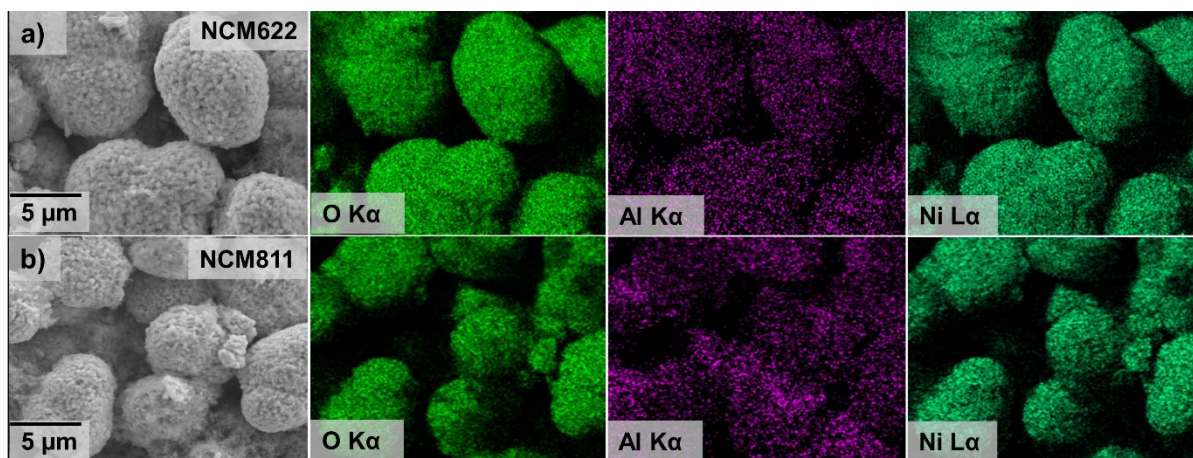


Fig. S2: SEM-EDX mapping of Al_2O_3 coated (a) NCM622, and (b) NCM811

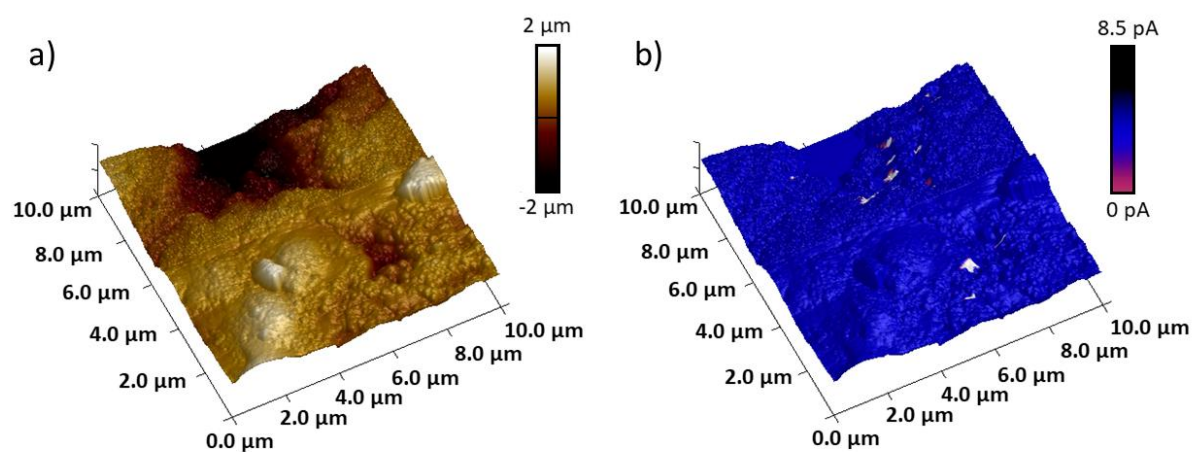


Fig. S3: a) AFM and b) C-AFM measurements of a NCM71.51.5 cathode coated with 20 nm Al_2O_3 revealing the insulating properties of the coating layer.

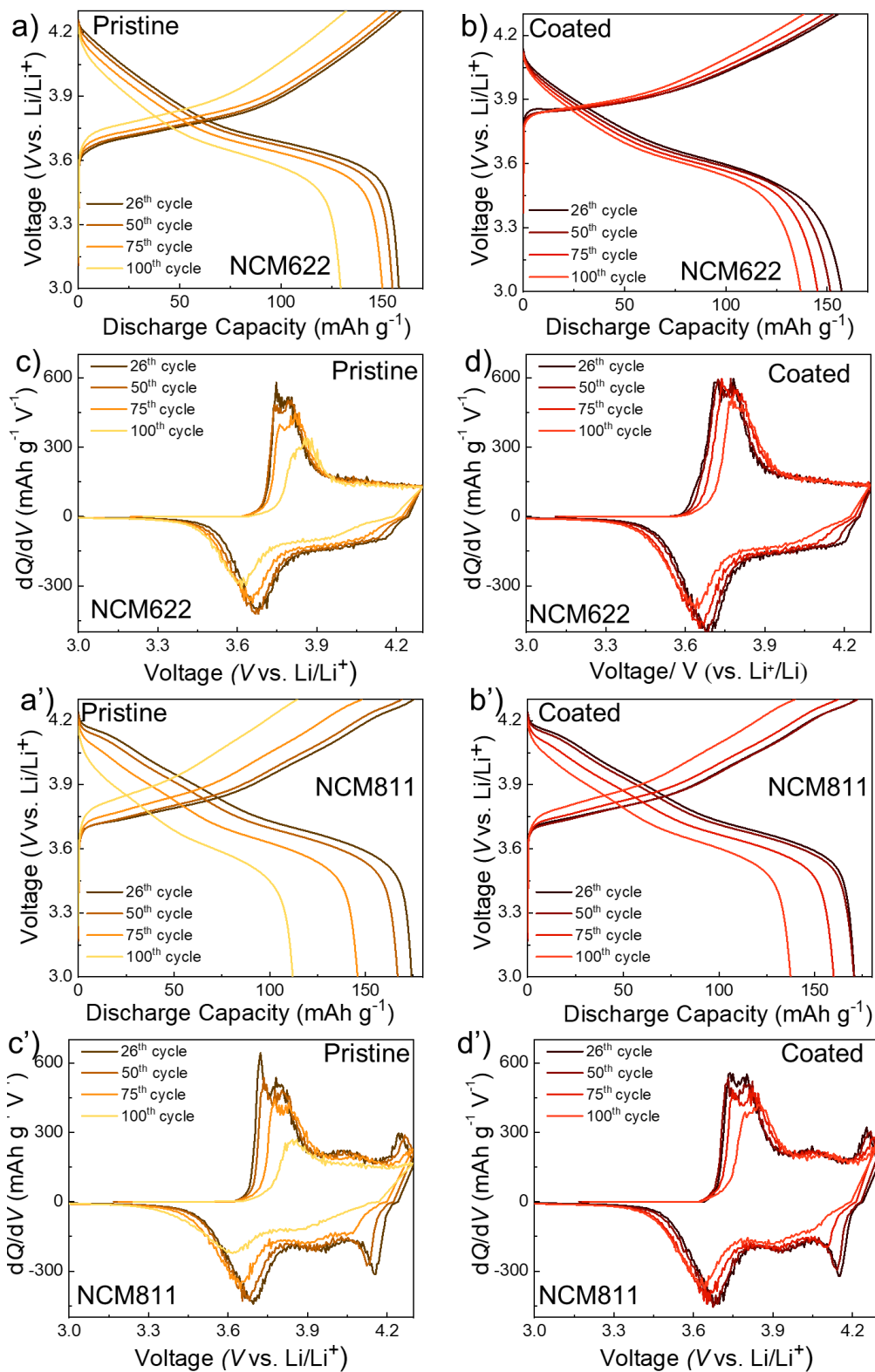


Fig. S4: Galvanostatic charge-discharge curves and corresponding Differential capacity plots of pristine and coated (a,b,c,d) NCM622 and (a',b',c',d') coated NCM811 cycled at 0.5 C after the C-rate test.

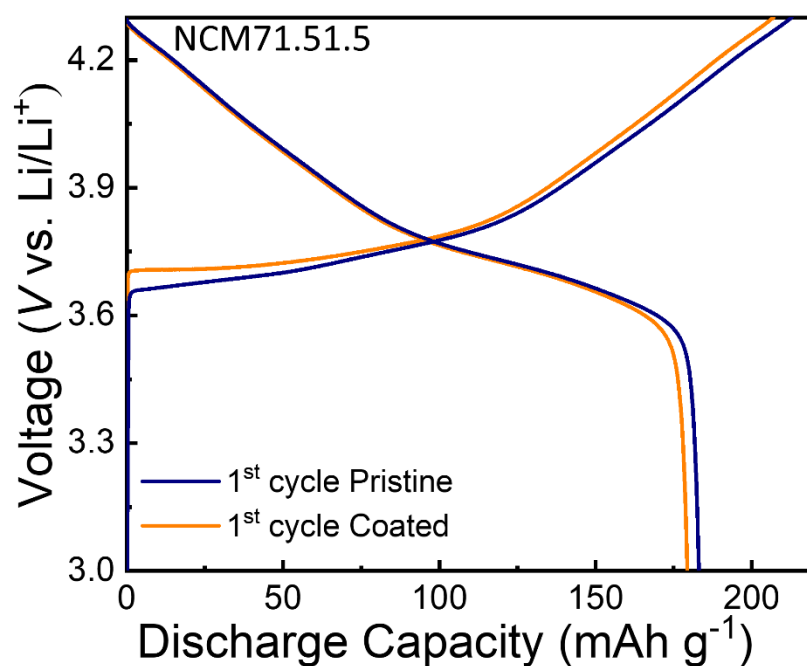


Fig. S5: Comparison of galvanostatic charge-discharge curves for 1st cycles at 0.1C for pristine cathode and coated cathode.

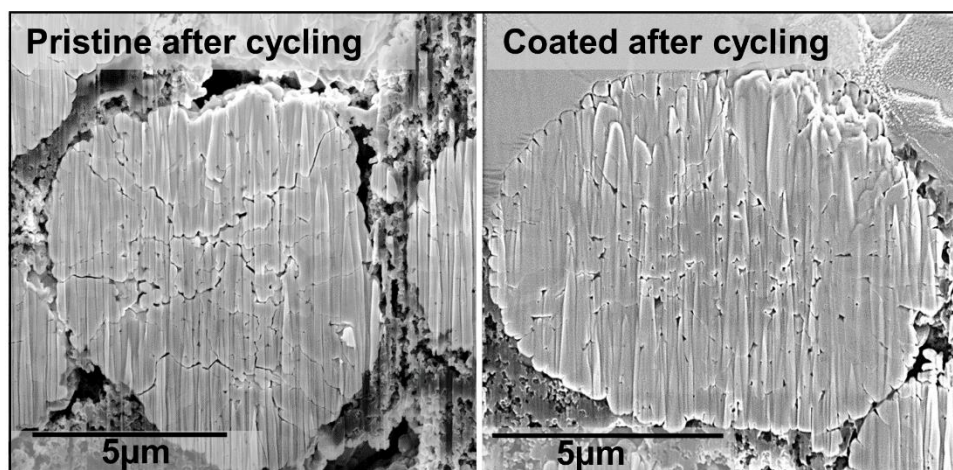


Fig. S6: Cross-sectional SEM micrographs of Pristine and Coated NCM71.51.5 after long-term cycling.