

# Supporting Information

## **Atomic to Nanoscale Investigation of Functionalities of Al<sub>2</sub>O<sub>3</sub> Coating Layer on Cathode for Enhanced Battery Performance**

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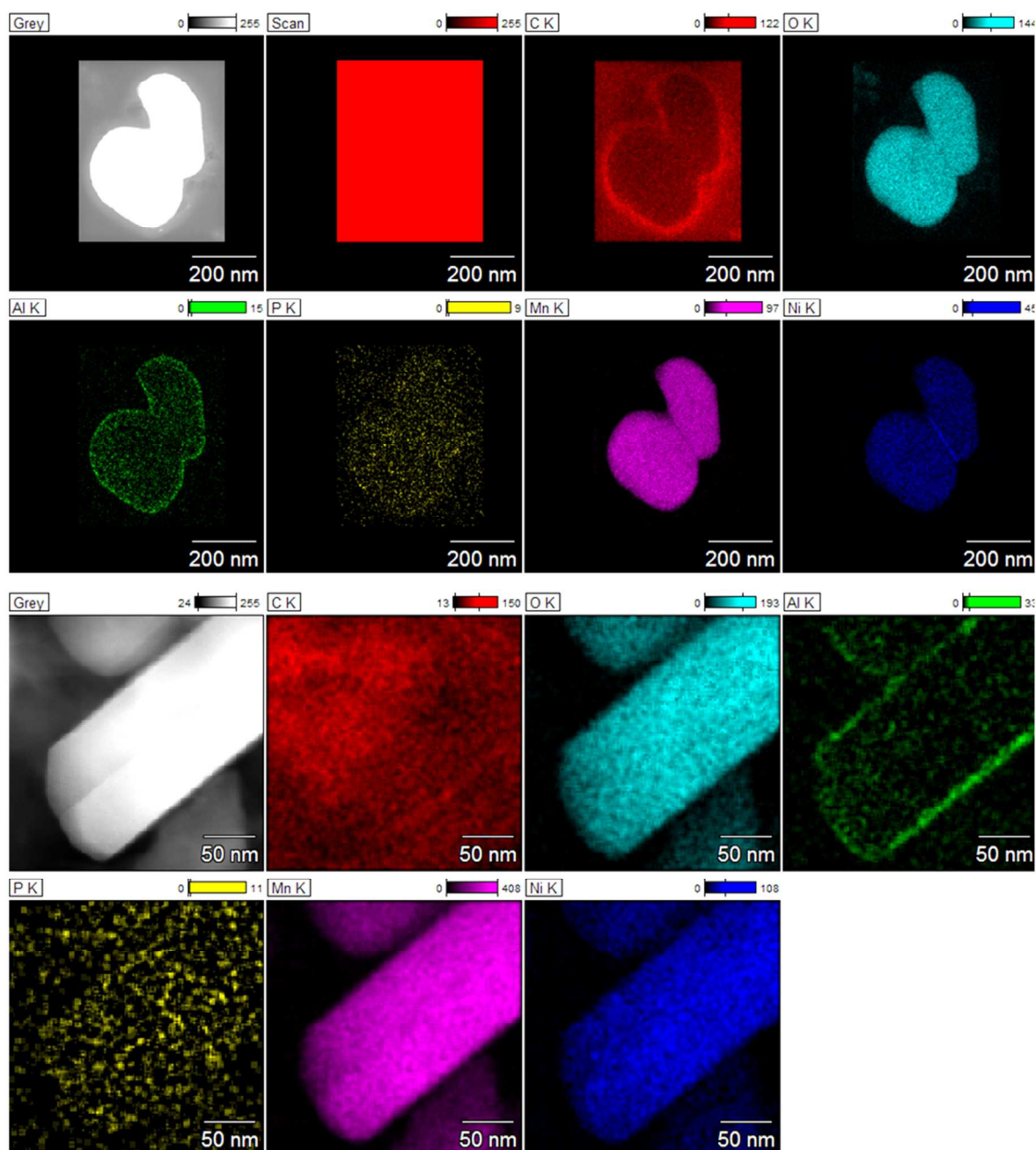


Figure S1 STEM-EDS mapping on coated samples after 40 cycles, showing negligible phosphorus surface enrichment.

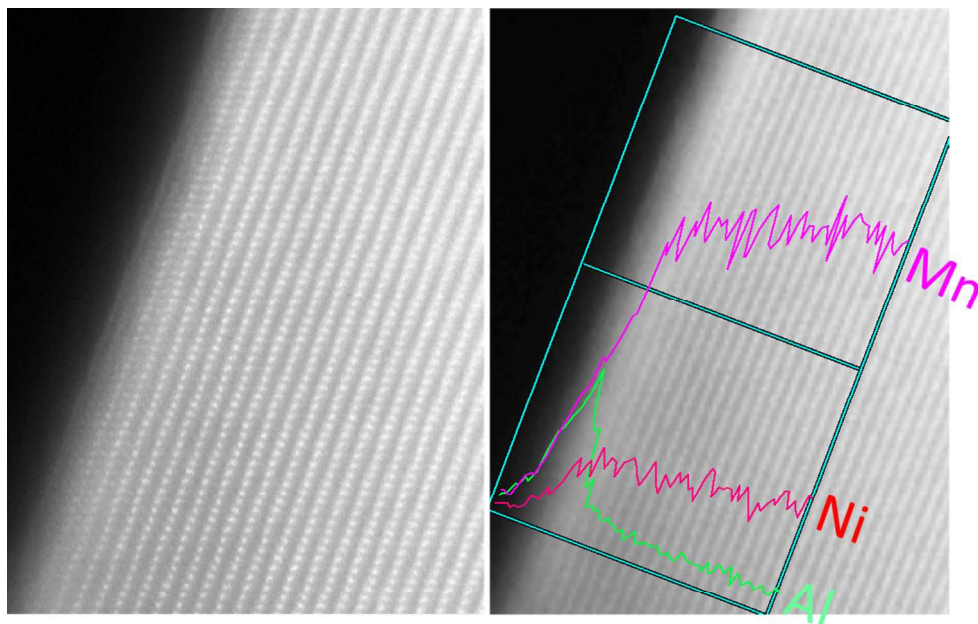


Figure S2 STEM-HAADF image and its corresponding EDS line scan.