

Electronic Supplementary Information

Electrocatalytic Selectivity for Nitrogen Reduction vs. Hydrogen Evolution: A Comparison of Vanadium and Cobalt Oxynitrides at Different pH Values

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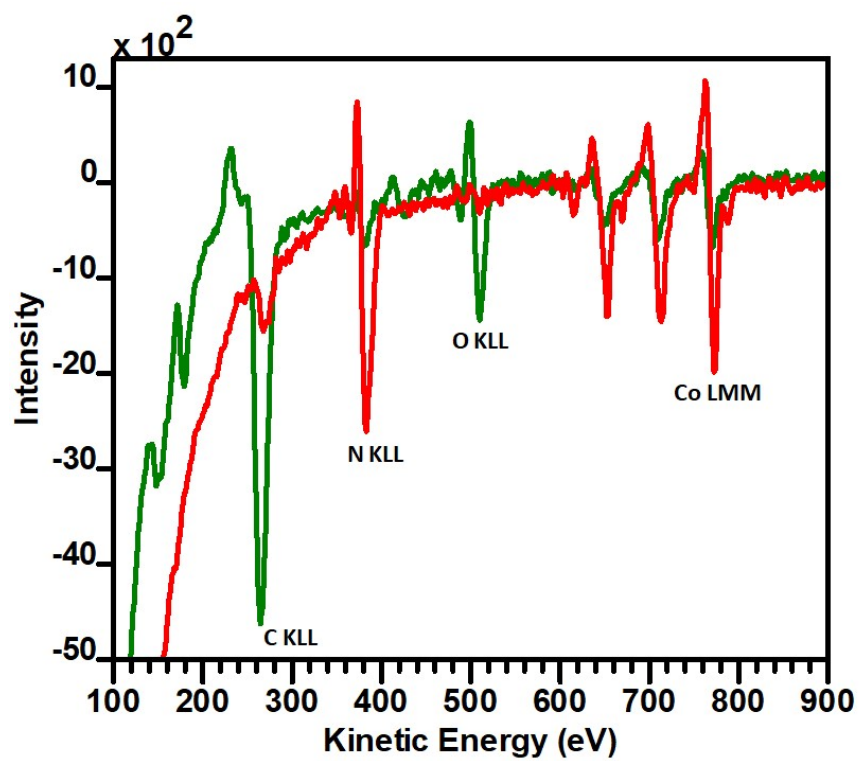


Figure S1: CoN films before (red) and after (green) ambient exposure. After ambient exposure, in-situ atomic ratio is $\text{CoO}_{0.7}\text{O}_{0.3}$.

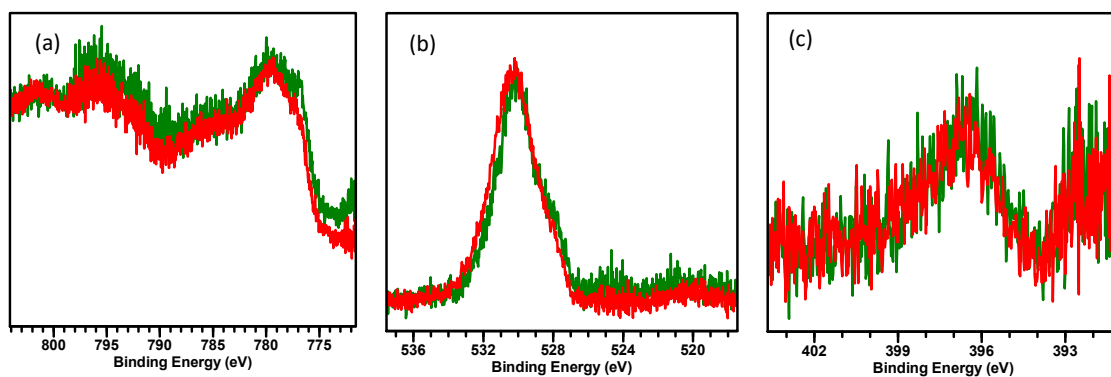


Figure S2: Grazing (red) and normal (green) of (a) Co 2p (b) O 1s (c) N 1s spectra of CoO_{0.8}N_{0.2} after deposition and subsequent ambient exposure.

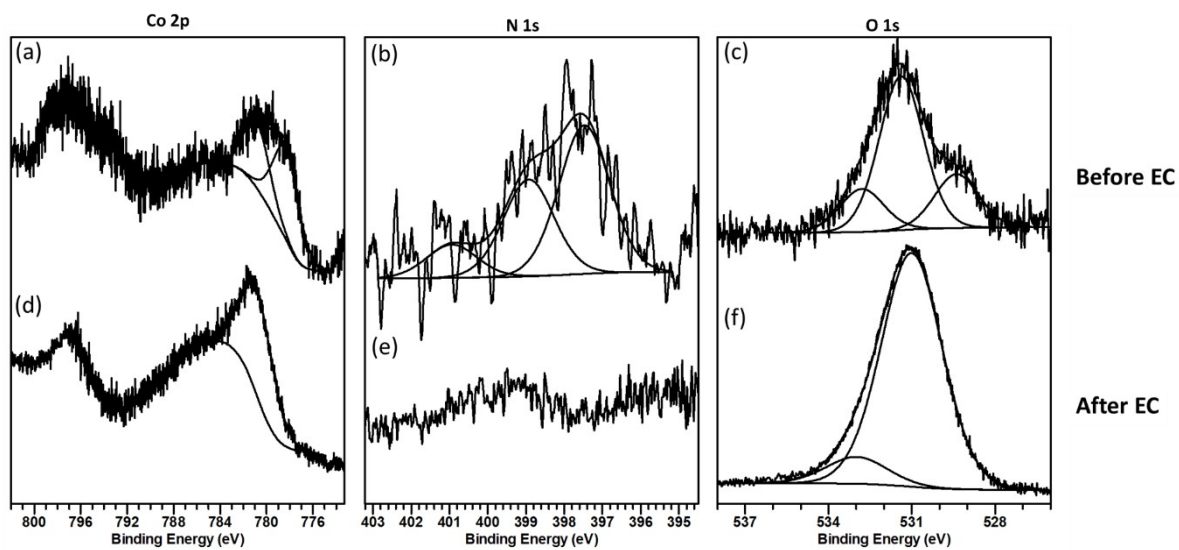


Figure S3: XPS of CoO_xN_y film before/after EC in Ar-saturated solution. This shows that lattice N is lost during cathodic polarization.

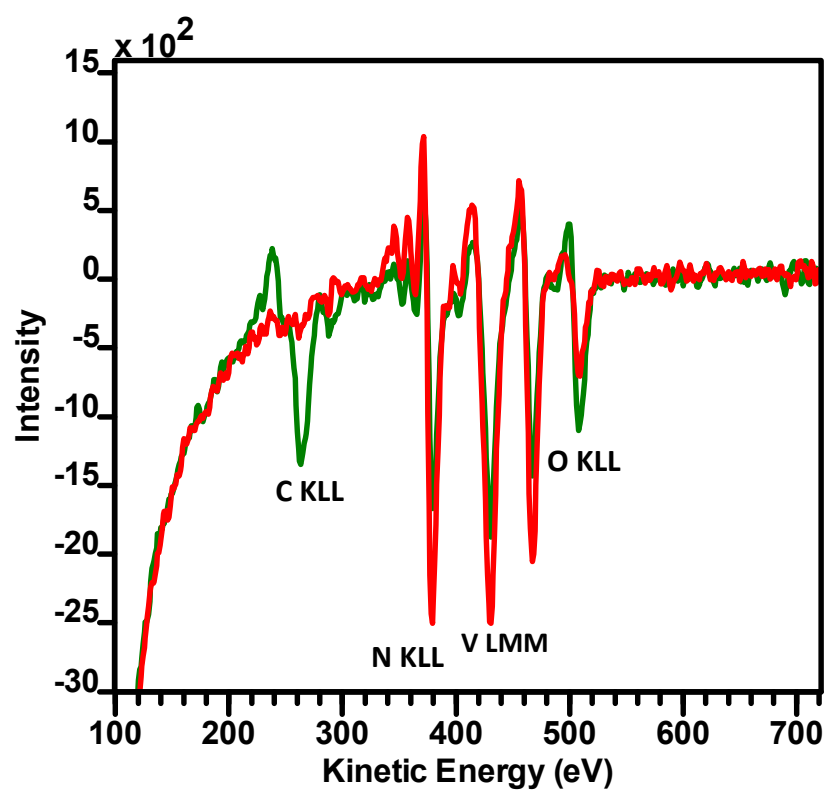


Figure S4: VON films before (red) and after (green) ambient exposure. After ambient exposure, the in-situ atomic ratio is $\text{VO}_{0.4}\text{N}_{0.6}$.

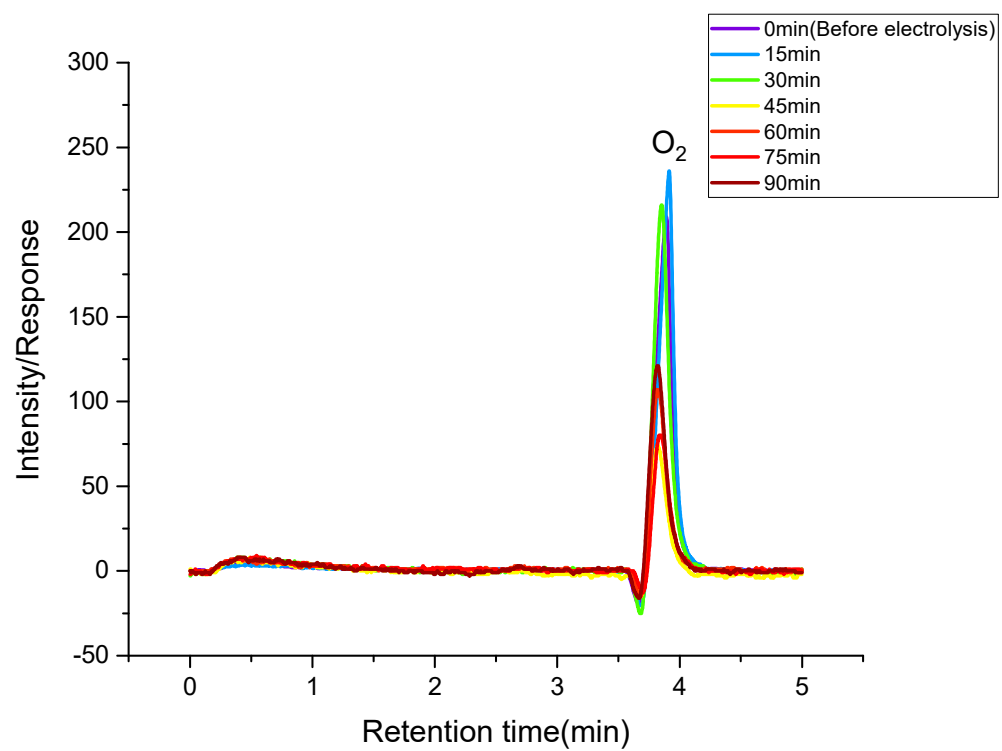


Figure S5: $VO_{0.4}N_{0.6}$ film showing that there is no evolution of hydrogen during electrolysis in basic solution. The same was observed in the neutral solution.