

Supporting Information

Variation of Electrocatalytic Activity of Isostructural Oxides $\text{Sr}_2\text{LaFeMnO}_7$ and $\text{Sr}_2\text{LaCoMnO}_7$ for Hydrogen and Oxygen-Evolution Reactions

Chandana C.W. Kananke-Gamage¹, Farshid Ramezanipour^{1,*}

¹Department of Chemistry, University of Louisville, Louisville, KY 40292, USA

*Corresponding author. Email: farshid.ramezanipour@louisville.edu, Phone: +1(502) 852-7061

ORCID: 0000-0003-4176-1386

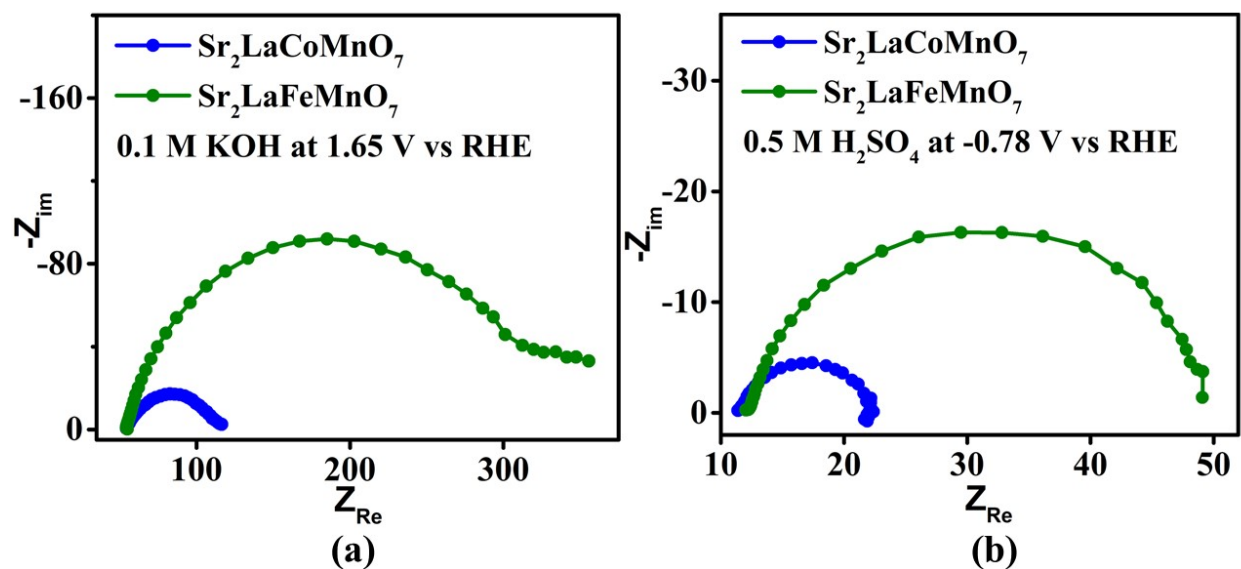


Figure S1. Impedance spectroscopy measurements to evaluate charge transfer resistance in (a) OER and (b) HER conditions. In both conditions, $\text{Sr}_2\text{LaCoMnO}_7$ shows a smaller charge transfer resistance than $\text{Sr}_2\text{LaFeMnO}_7$.

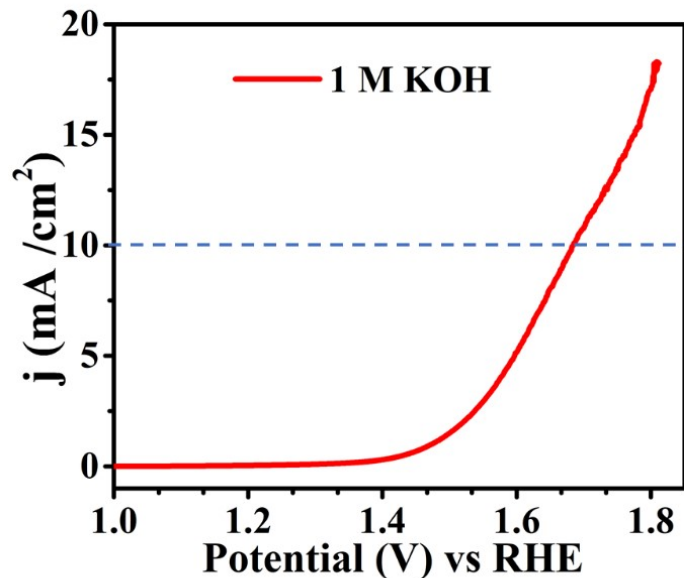


Figure S2. OER polarization curves of $\text{Sr}_2\text{LaCoMnO}_7$ in 1 M KOH, showing overpotential of $\eta_{10} = 450$ mV.

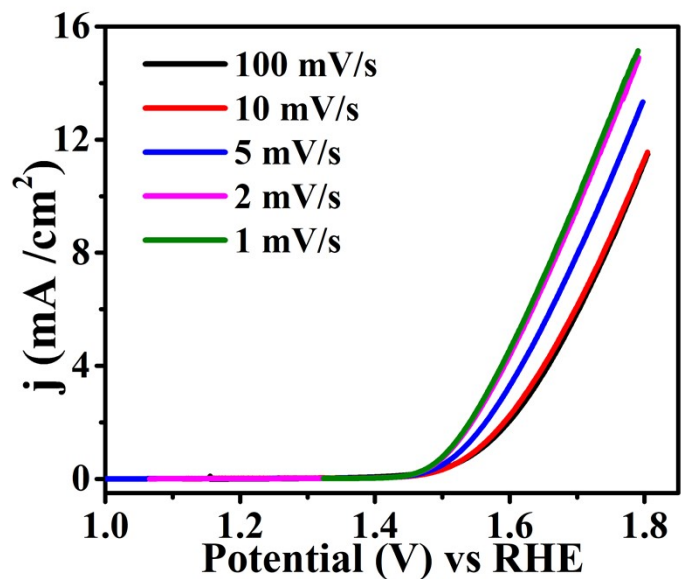


Figure S3. OER polarization curves of $\text{Sr}_2\text{LaCoMnO}_7$ in 0.1 M KOH at different scan rates.

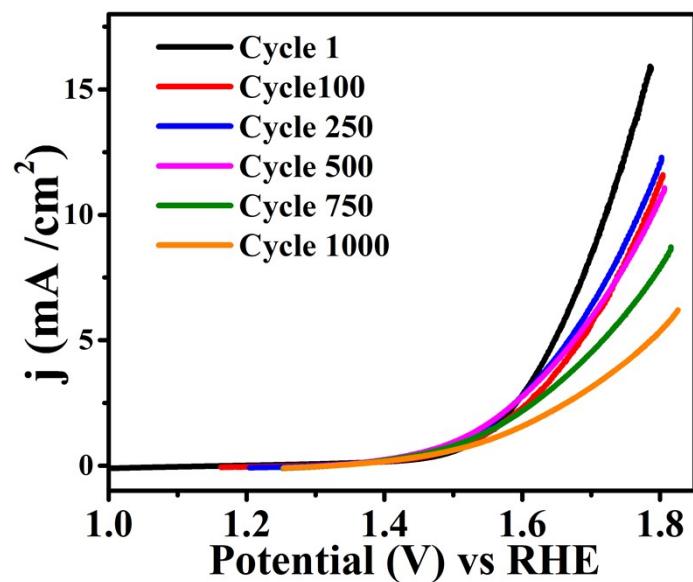


Figure S4. OER current-voltage cycles of $\text{Sr}_2\text{LaCoMnO}_7$ in 0.1 M KOH.

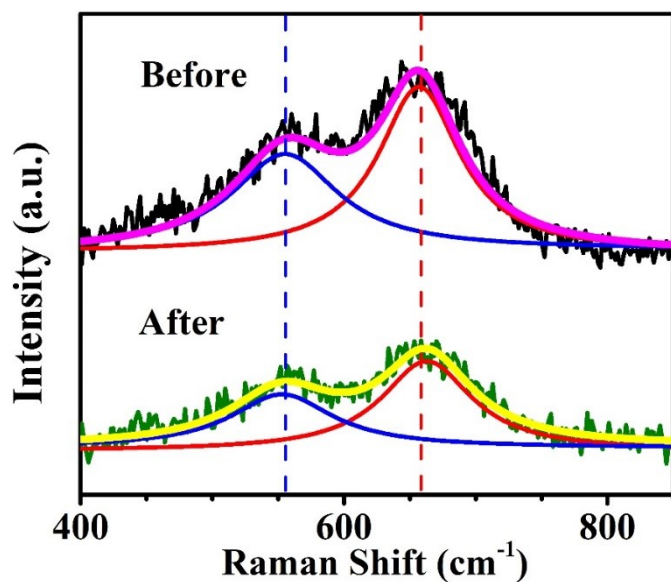


Figure S5. Raman spectroscopy data for $\text{Sr}_2\text{LaCoMnO}_7$ before and after 1000 cycles of OER. Raman shifts for the main bands remain almost the same, indicating the retention of the structural integrity of the catalyst.