

Supplementary Materials

Article

Ni-Doped $\text{Pr}_{0.7}\text{Ba}_{0.3}\text{MnO}_{3-\delta}$ Cathodes for Enhancing Electrolysis of CO_2 in Solid Oxide Electrolytic Cells

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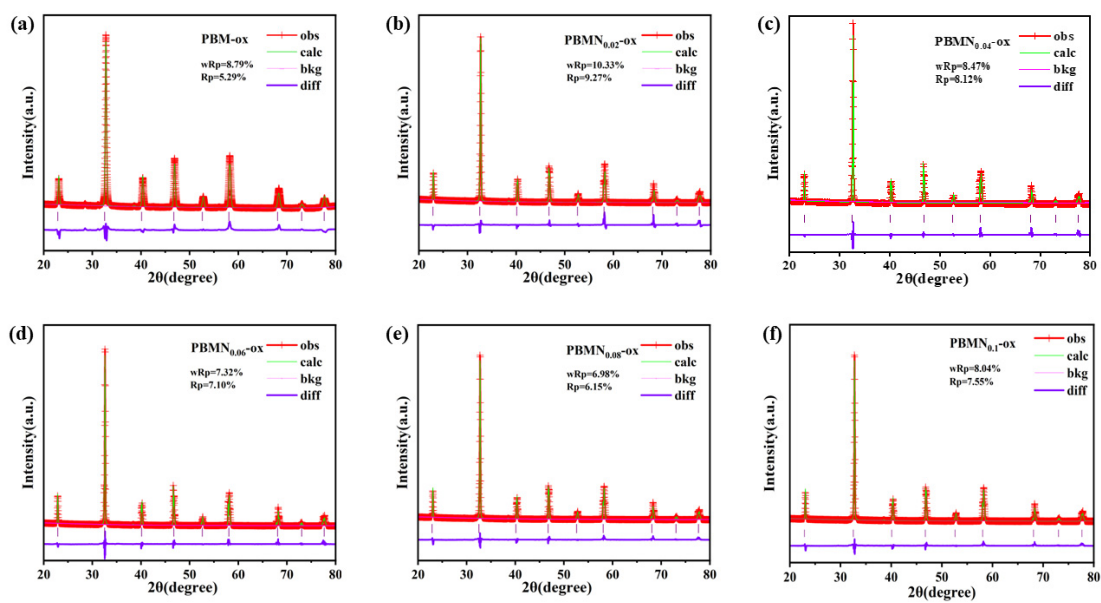


Figure S1. XRD Rietveld refinement patterns of the oxidized in air (a: PBM; b: PBMN_{0.02}; c: PBMN_{0.04}; d: PBMN_{0.06}; e: PBMN_{0.08}; f: PBMN_{0.1}).

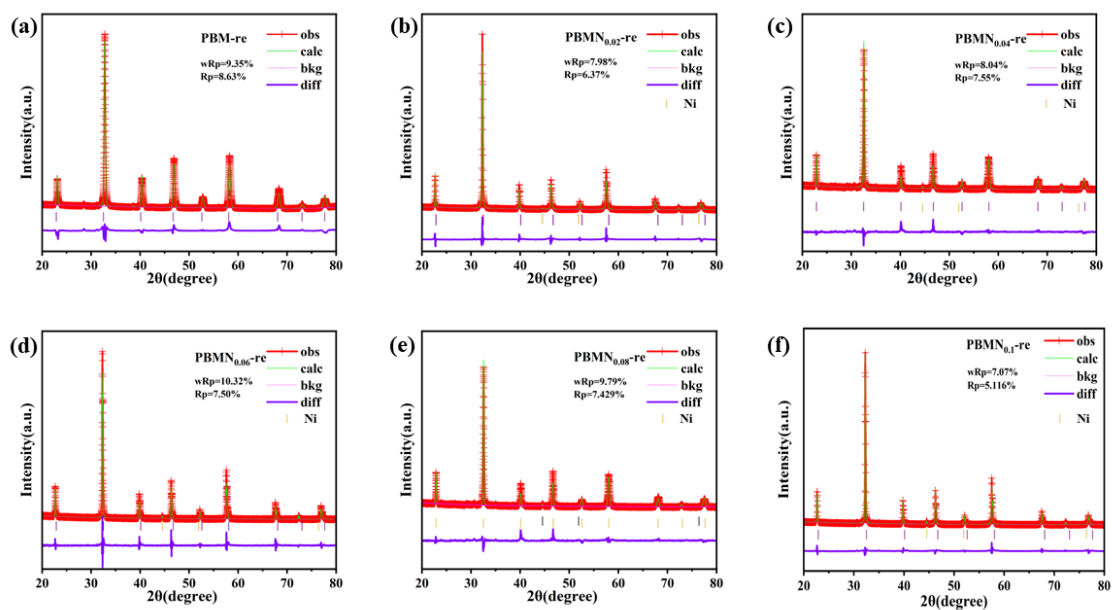


Figure S2. XRD Rietveld refinement patterns of the reduced in 5% H₂/Ar (a: PBM; b: PBMN_{0.02}; c: PBMN_{0.04}; d: PBMN_{0.06}; e: PBMN_{0.08}; f: PBMN_{0.1}).

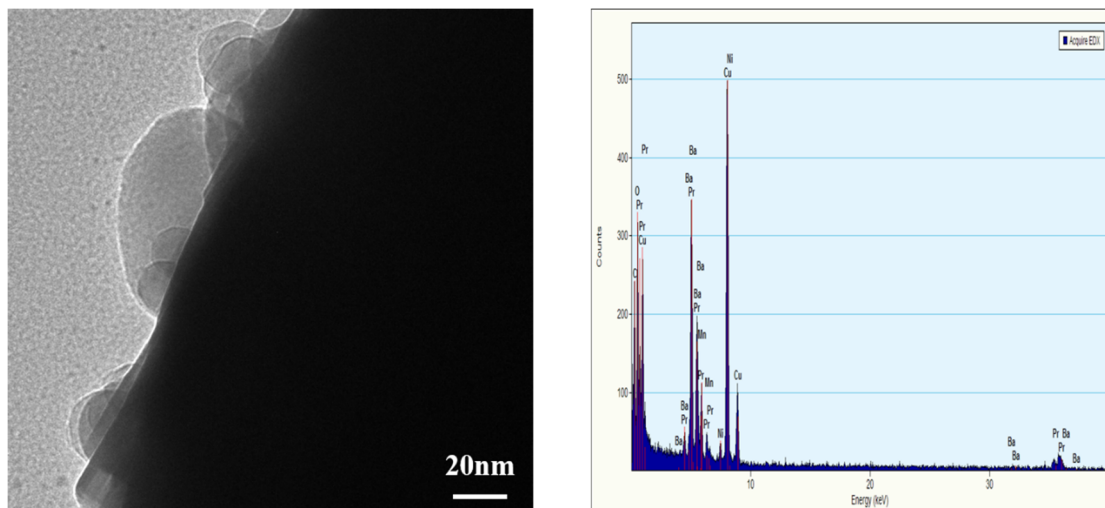


Figure S3. EDS point analysis results of reduced PBMN_{0.1}.

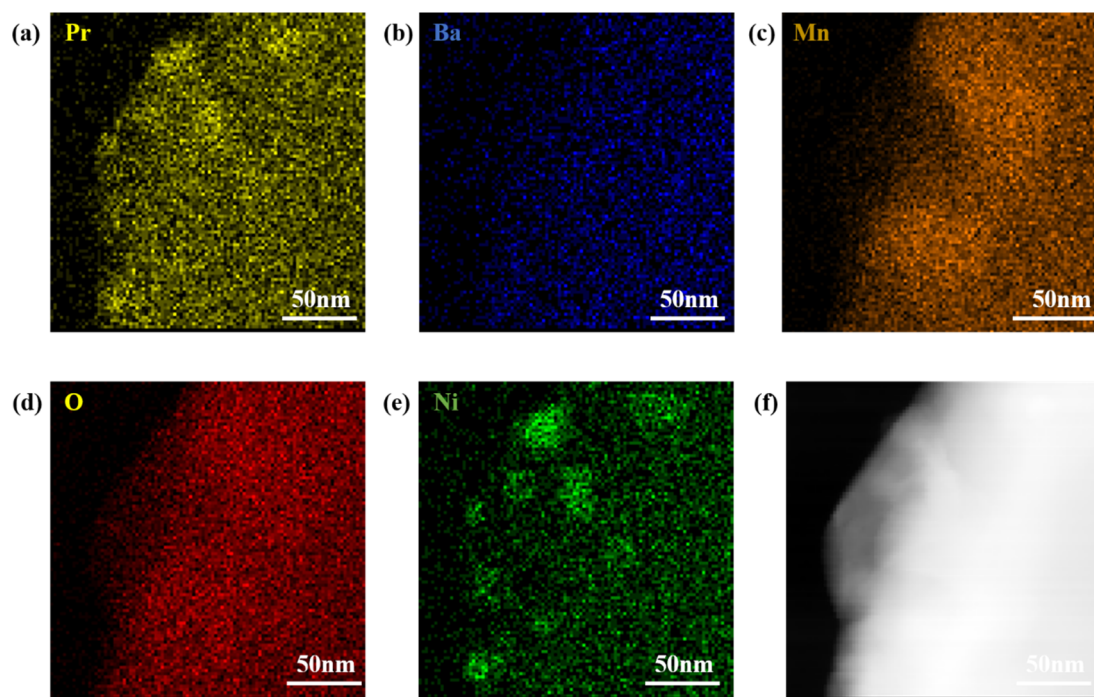


Figure S4. Mapping analysis results of reduced PBMN_{0.1}.

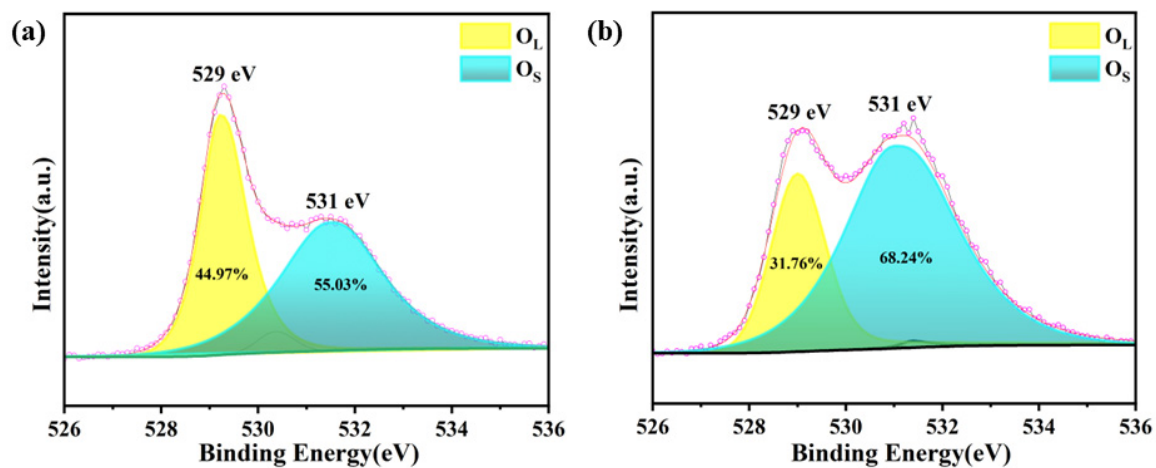


Figure S5. XPS of (a) O 1s orbitals in the oxidized state of PBMN_{0.1} material;

XPS of (b) O 1s orbitals in the reduced state of PBMN_{0.1} material.

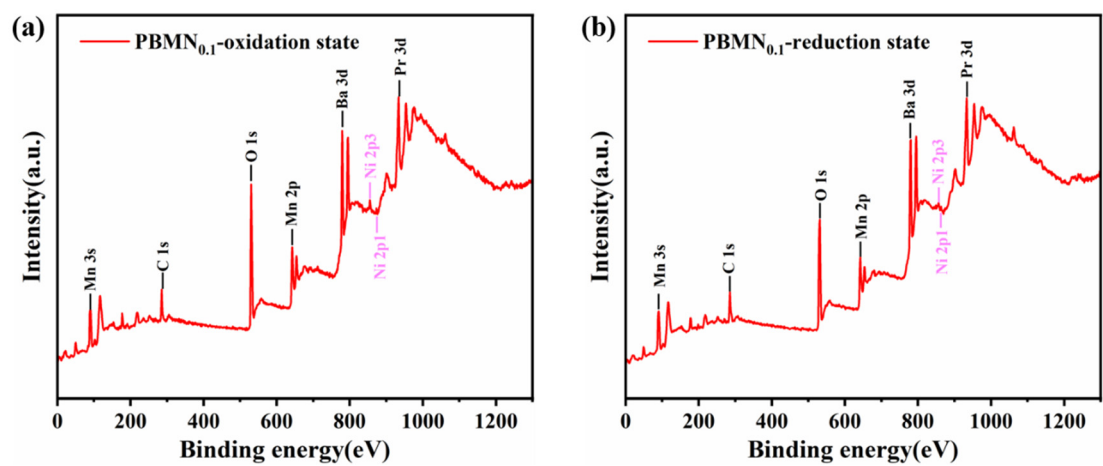


Figure S6. The XPS survey spectra of (a) PBMN_{0.1} in oxidation state; (b) PBMN_{0.1} in reduction state.

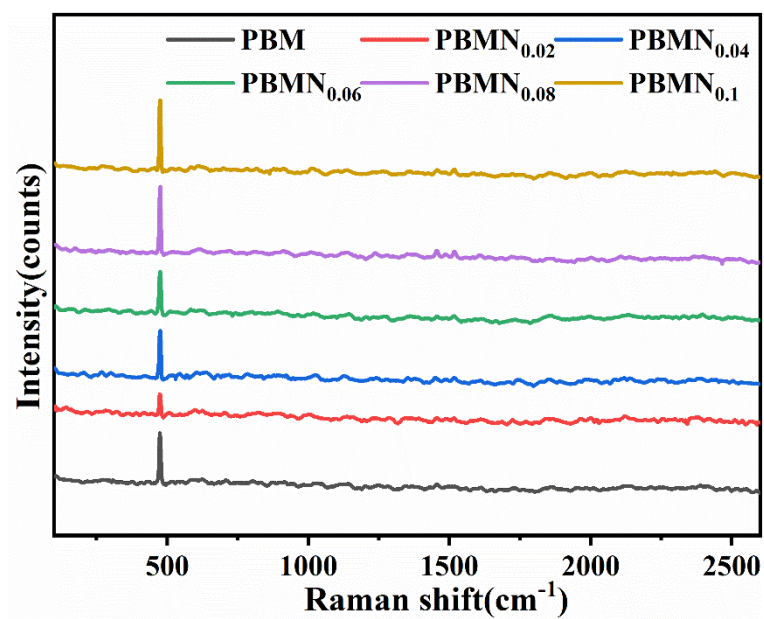


Figure S7. Raman chromatographic analysis of each component after reaction.

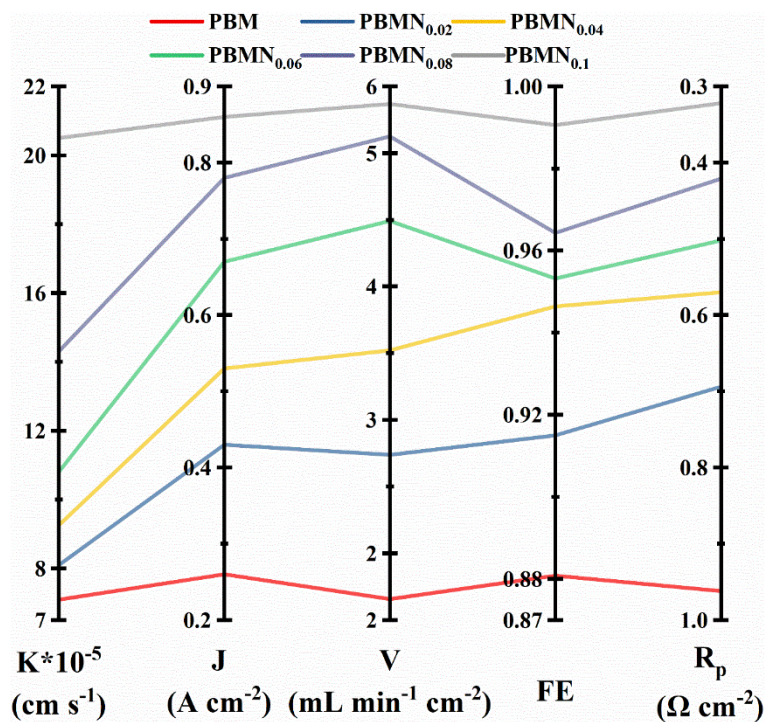


Figure S8. Performance comparison of SOEC made by different PBMN_x electrode materials. K is the oxygen exchange coefficient; J is electric current density; V is the yield of CO; FE is Faradaic efficiency; R_p is the polarization impedance.