Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Enhancing CO_2 electrolysis performance with various metal additives (Ru, Co, Fe, and Ni) - decorated La(Sr)Fe(Mn)O_3 cathode in solid oxide electrolysis cells

*Sang Won Lee [a, b], Tae Heon Nam [a, c], Min Kyu Kim [a], Seokhee Lee [a], Kyu Hyung Lee[*c], Jong Hyeok Park [*b], and Tae Ho Shin [*a]*

[a] Korea Institute of Ceramic Engineering and Technology, Jinju-si, Gyeongsangnam-do 52851, Republic of Korea.

[b]Department of Chemical and Biomolecular Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul, 120-749, Republic of Korea.

[c] Department of Materials Science & Engineering, Yonsei University, 50 Yonsei-ro, Seodaemun-gu, Seoul, 120-749, Republic of Korea.

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SUPPORTING INFORMATION

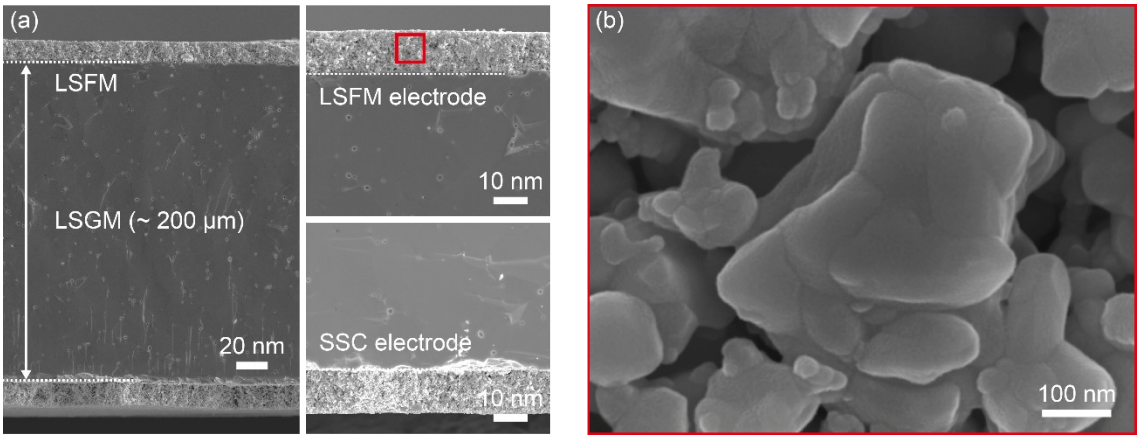

Figure S1 (a) Cross-sectional SEM image of LSGM supported cell with LSFM electrode (b) SEM image of pristine LSFM electrode with high magnification.

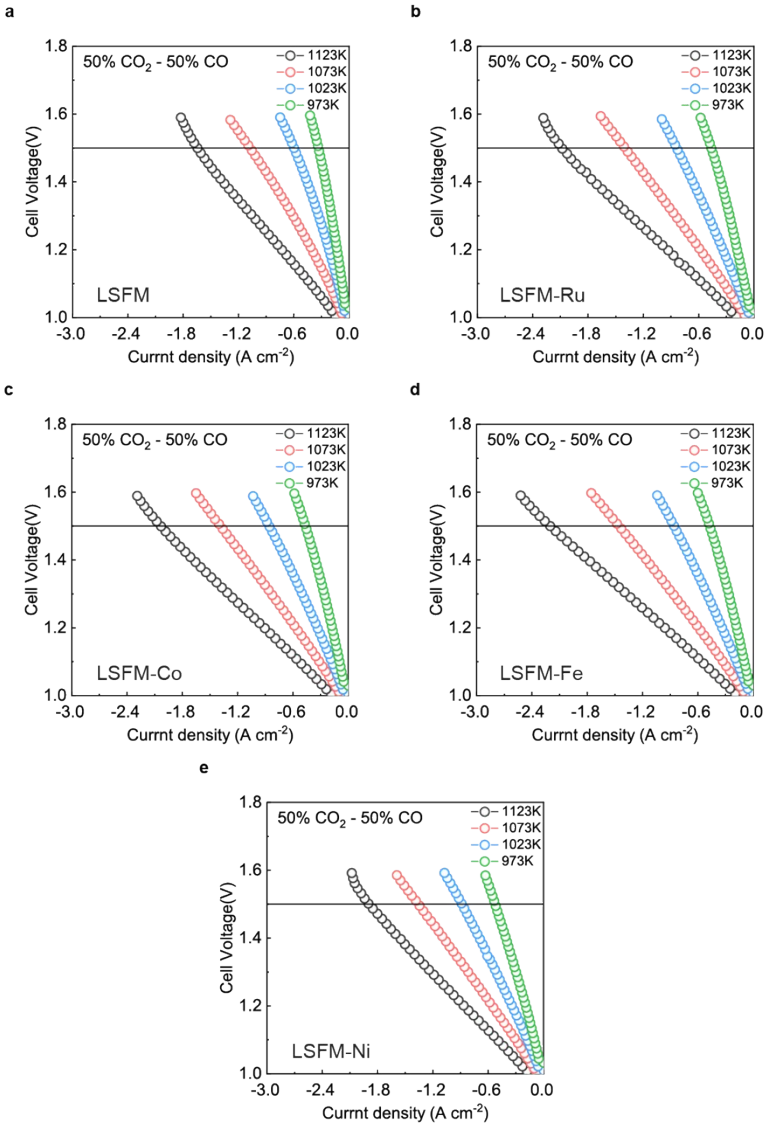

Figure S2. CO_2 electrolysis performance of the cell using an LSFM electrode with different metal additives feeding 50% CO_2 - 50% CO at various temperatures; (a) LSFM, (b) LSFM-Ru, (c) LSFM-Co, (d) LSFM-Fe, and (e) LSFM-Ni.

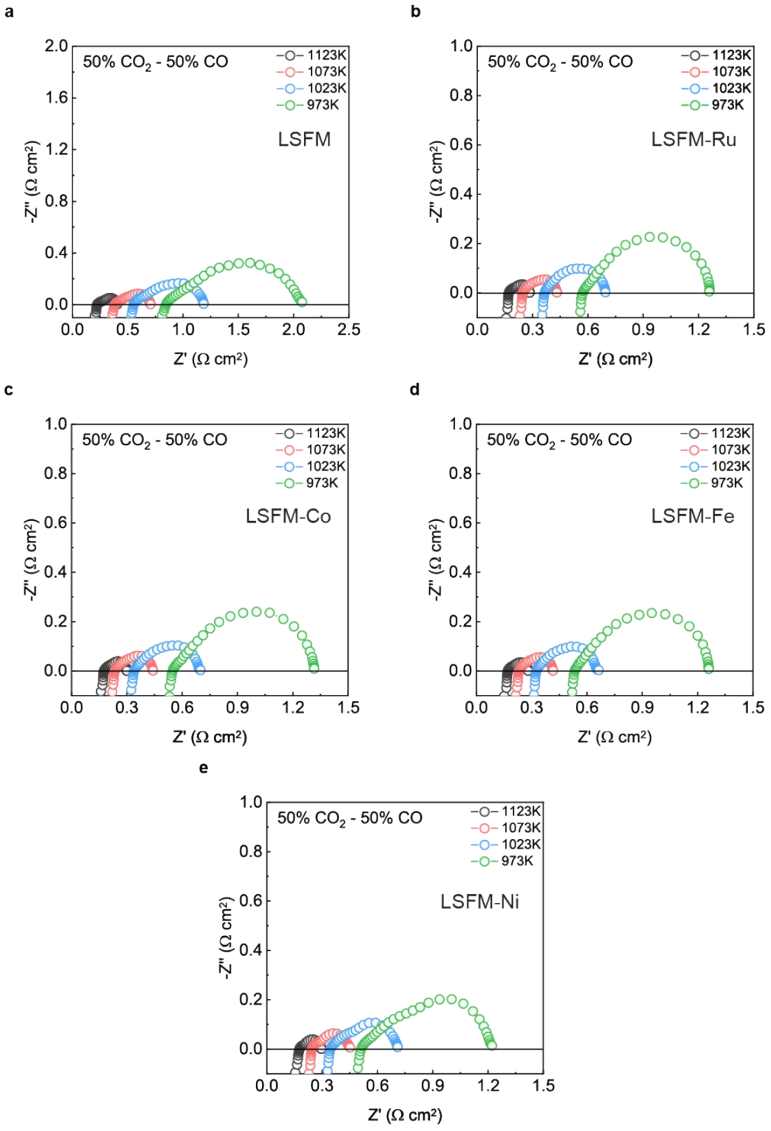

Figure S3. Impedance spectra of the LSFM electrode with and without different metal additives at various temperatures under 50% CO_2 - 50% CO; (a) LSFM, (b) LSFM-Ru, (c) LSFM-Co, (d) LSFM-Fe, and (e) LSFM-Ni.

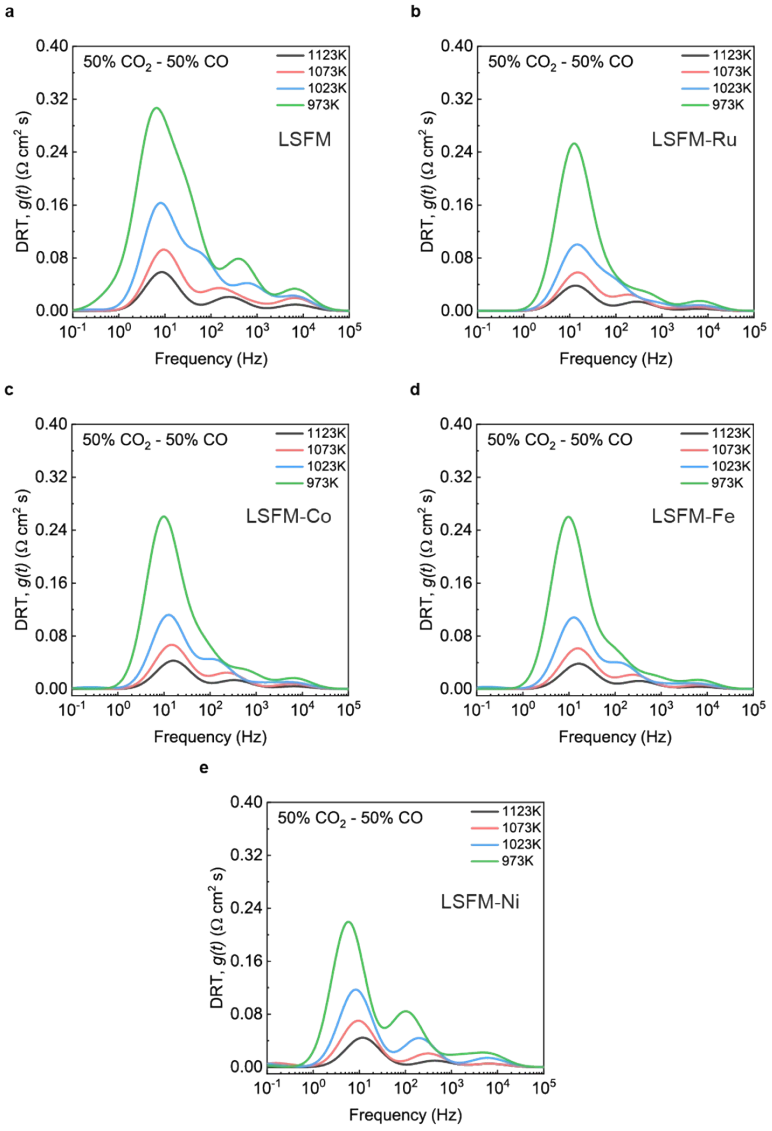

Figure S4. DRT plot from the EIS of the LSFM electrode with and without different metal additives at various temperatures under 50% CO_2 - 50% CO; (a) LSFM, (b) LSFM-Ru, (c) LSFM-Co, (d) LSFM-Fe, and (e) LSFM-Ni.

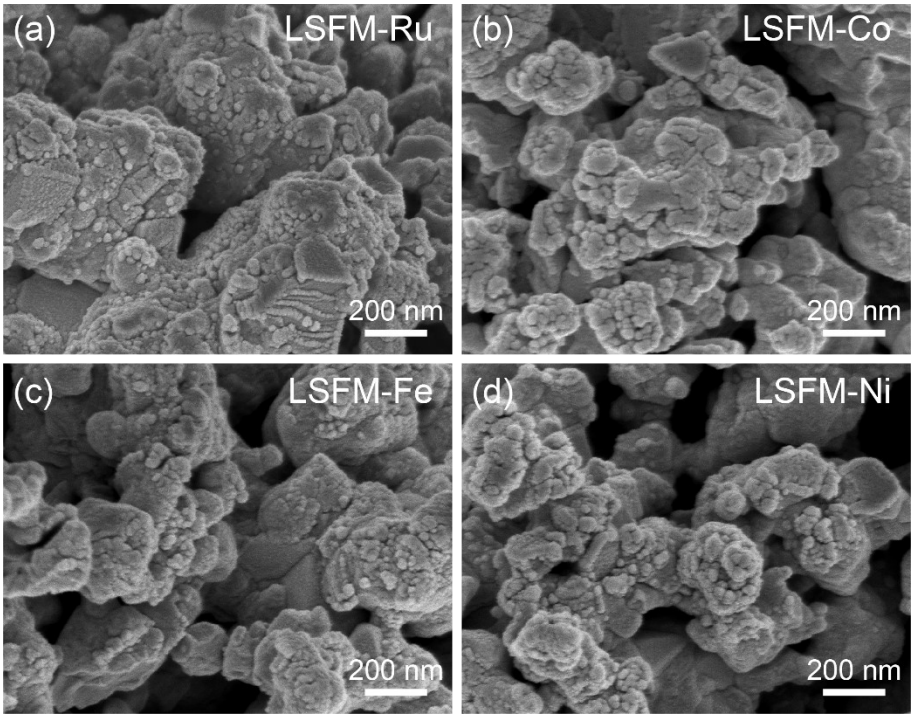

Figure S5 SEM images of metal-infiltrated LSFM electrode after cell test for CO_2 Reduction; (a) LSFM-Ru, (b) LSFM-Co, (c) LSFM-Fe, and (d) LSFM-Ni.