Supplementary information

Characteristic Time Integration to Characterize Gas Diffusion and Surface Reaction Step of Oxygen Reduction Reaction via Porous Electrocatalyst for Solid Oxide Fuel Cell

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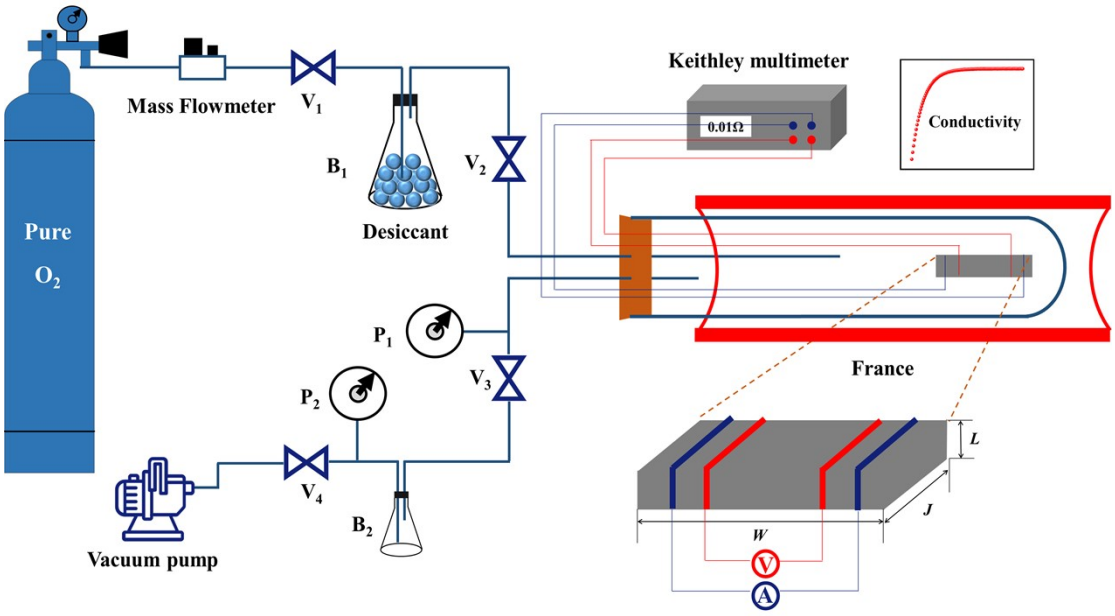

Fig. S1. Schematic diagram of vacuum ECR testing device. V1-4 denotes valves. B1-2 denotes buffer bottles. P1-2 denotes vacuum meters.

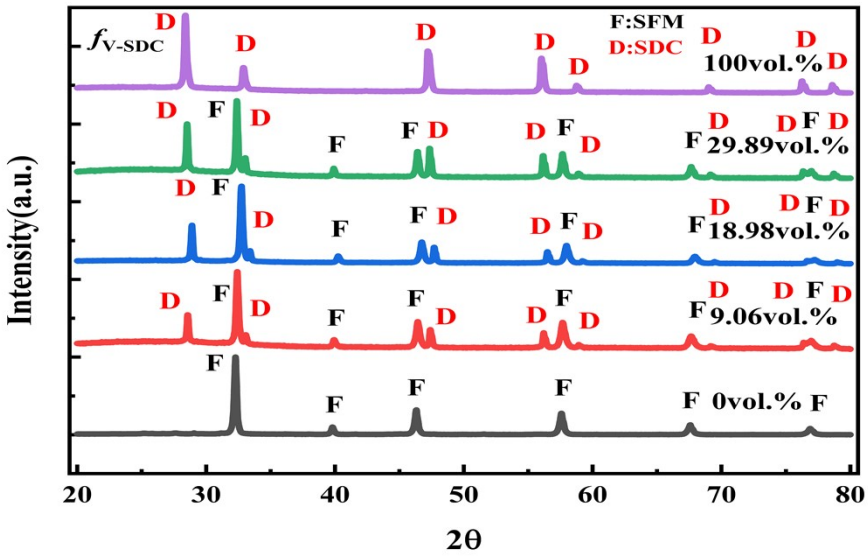

Fig. S2. Room temperature XRD patterns of porous SFM-SDC composites after sintering at 1100 ℃ for 5 h in O_2 gas. The SDC volume content in SFM-SDC is 0 %, 9.06 %, 18.98 %, 29.89 %, and 100 %.

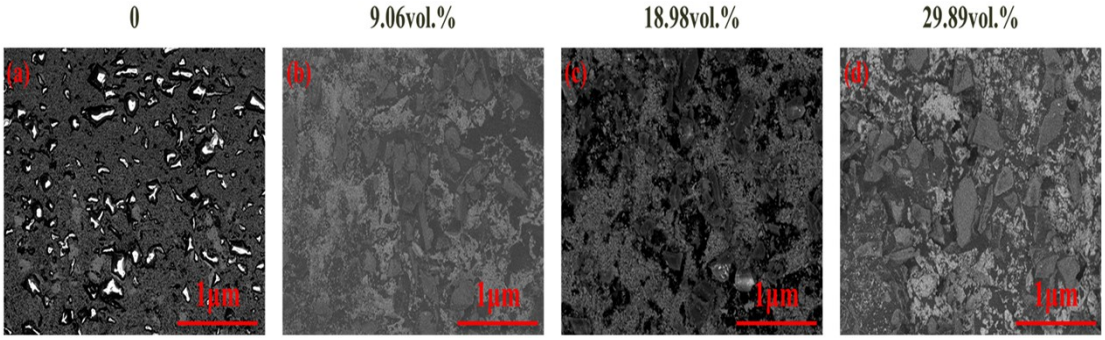

Fig. S3. The BSE images for porous SFM-SDC composites with various $f_{V\text{-}SDC}$, (a) 0 vol.%; (b) 9.06 vol.%; (c) 18.98 vol.%, and (d) 29.89 vol.%.

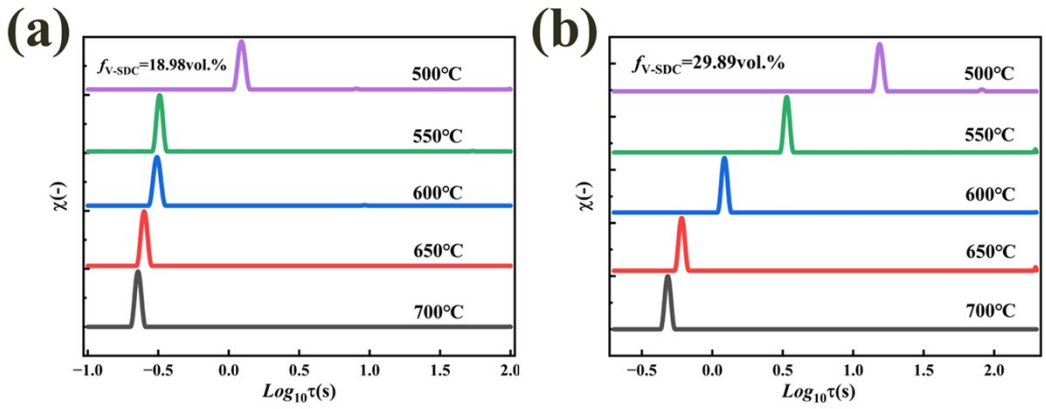

Fig. S4. DCT spectrum (χ-$\log_{10}\tau$) relations tested at 500 - 700 °C for porous SFM–SDC composites with various SDC content, (a) composite with $f_{V\text{-}SDC}$=18.98 vol%, (b) composite with $f_{V\text{-}SDC}$=29.89 vol%.