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催化层掺杂共价有机框架材料提升高温聚电解质膜燃料电池性能

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Enhanced Performance and Durability of High-temperature Polymer Electrolyte Membrane Fuel Cell by Incorporating Covalent Organic Framework into Catalyst Layer

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Impregnation of phosphoric acid into SNW-1 COF network (H_3PO_4@COF)

The H_3PO_4 was impregnated into the SNW-1 COF materials via immersion. Briefly, the COF material was immersed into 25% H_3PO_4. And the mixture was stirring for 12 h at room temperature. After stirring, the COF was washed by ultrapure water to supernatant pH ~7. Finally, the H_3PO_4@COFmateralis was obtained by drying overnight at 80 °C. The Fourier transform infrared (FT-IR) spectra of the COF material was recorded by using spectrometer (Nicolet iS50 FT-IR), as shown in Fig. S1.

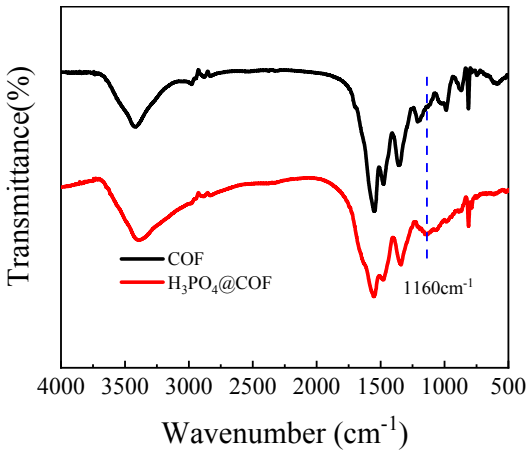

Fig. S1 FT-IR spectra of the COF networks with and without H_3PO_4 impregnation.

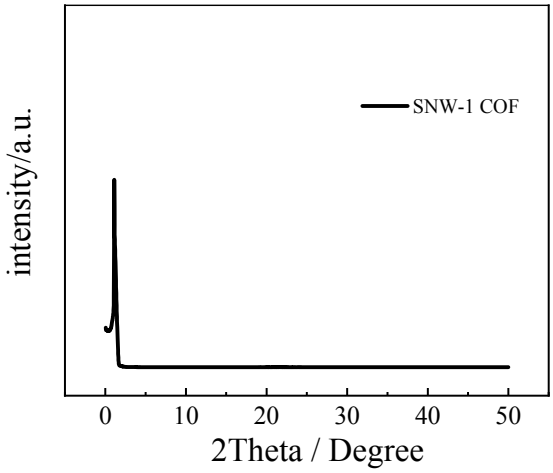

Fig. S2 XRD pattern of pristine SNW-1 COF.

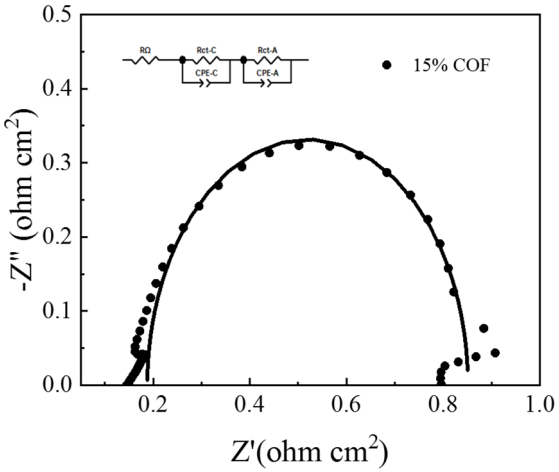

Fig. S3 *In situ* impedance curve of the MEA with 15% COF material at 0.6 V.