

Electronic Supplementary Information

Porous organic polymers for electrocatalysis

Dong-Hui Yang, You Tao, Xuesong Ding,* Bao-Hang Han*

*CAS Key Laboratory of Nanosystem and Hierarchical Fabrication, CAS
Center for Excellence in Nanoscience, National Center for Nanoscience
and Technology, Beijing 100190, China*

University of Chinese Academy of Science, Beijing 100049, China

Tel.: +86 10 8254 5576. Email: hanbh@nanoctr.cn

Tel.: +86 10 8254 5708. Email: dingxs@nanoctr.cn

Supplementary Figures

Section 1. Chemical structures of typical POPs for hydrogen evolution reaction

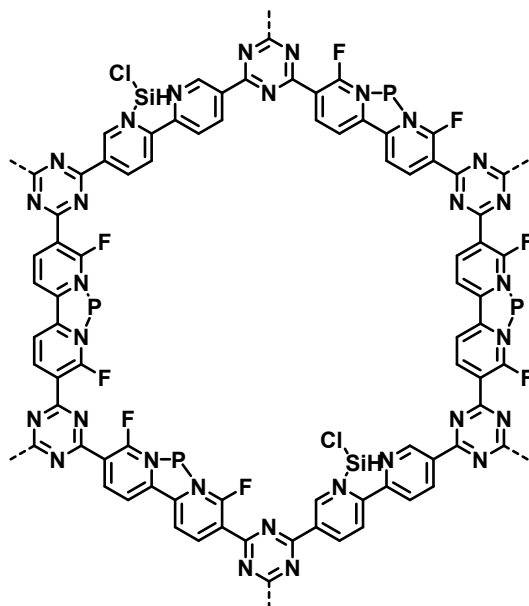


Fig. S1 Chemical structure of SiPF-Bpy-CTF.

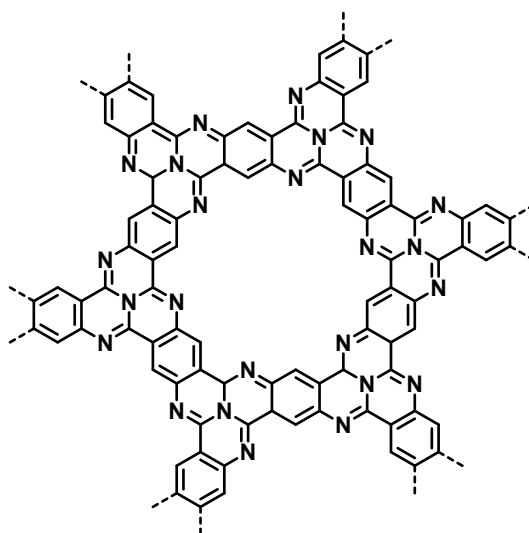


Fig. S2 Chemical structure of TQ-CQN.

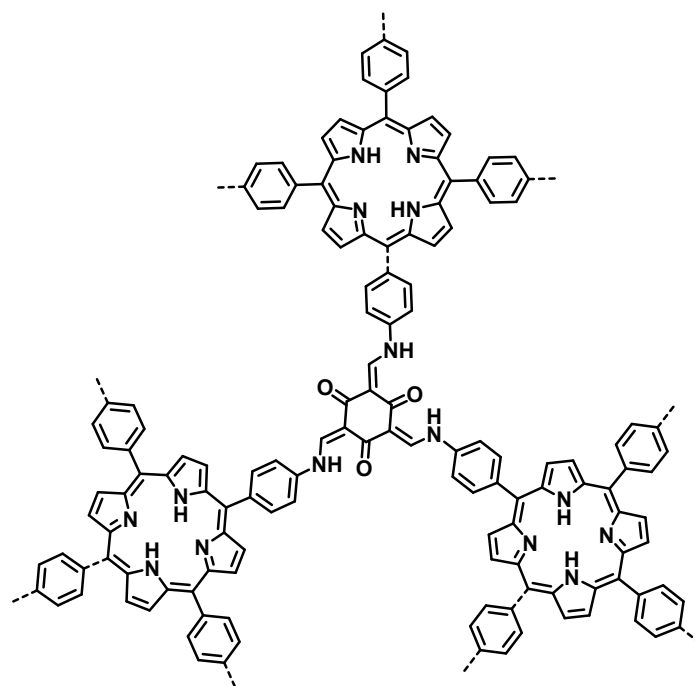


Fig. S3 Chemical structure of TpPAM.

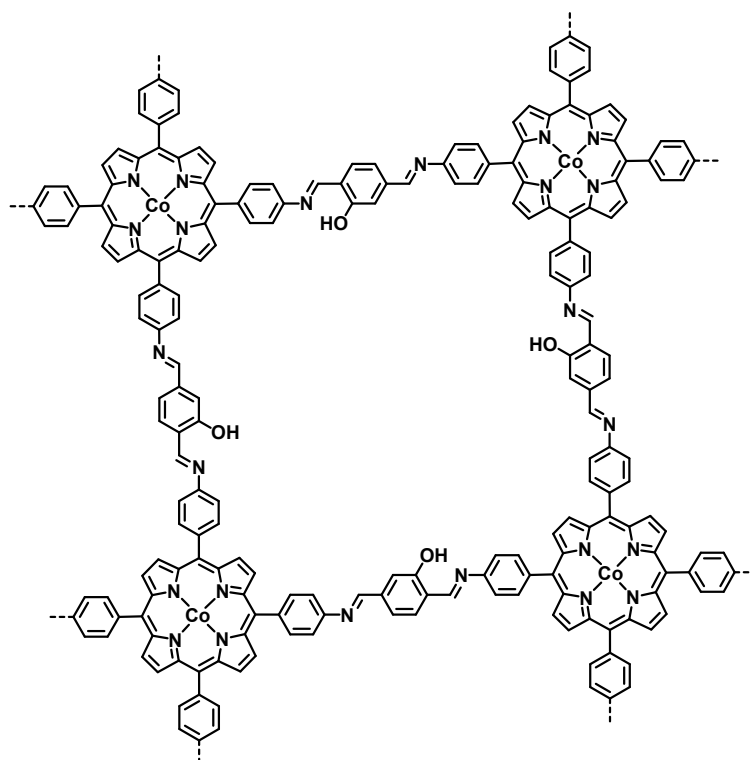


Fig. S4 Chemical structure of CoCOP.

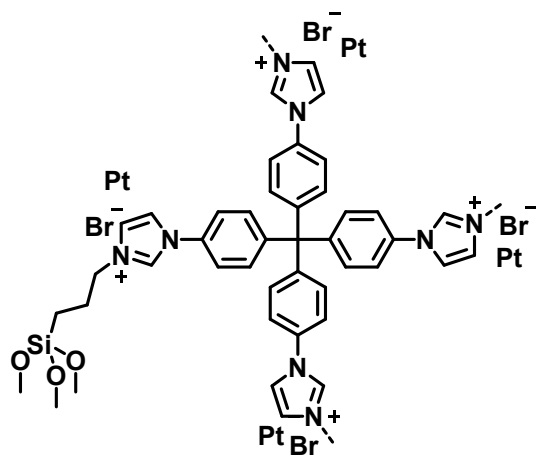


Fig. S5 Chemical structure of imidazolium-based POP with Pt on GCE.

Section 2. Chemical structures of typical POPs for oxygen evolution reaction

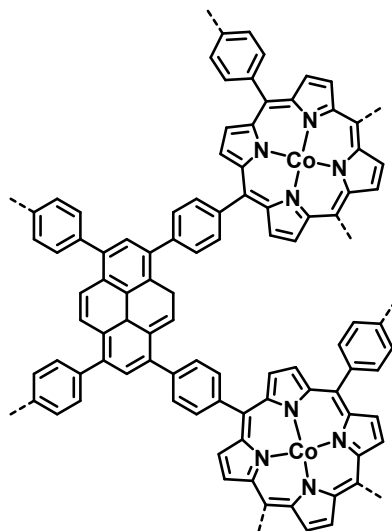


Fig. S6 Chemical structure of Co-MPPy-1.

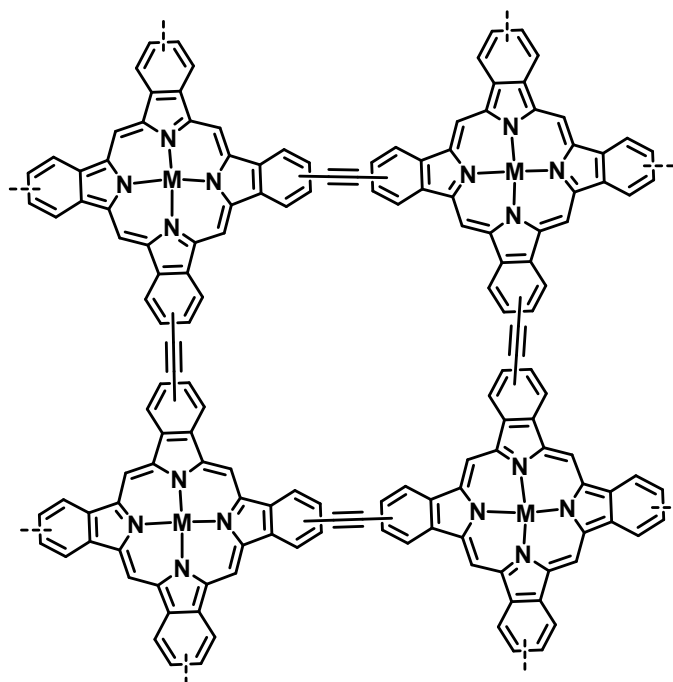


Fig. S7 Chemical structure of Fe_{0.5}Ni_{0.5}Pc-CP (M = Fe_{0.5}Ni_{0.5}).

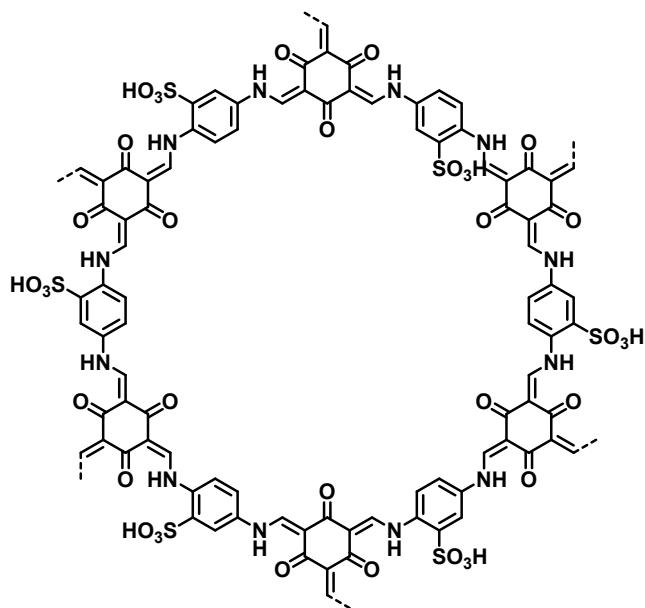


Fig. S8 Chemical structure of COF-SO₃H.

Section 3. Chemical structures of typical POPs for oxygen reduction reaction

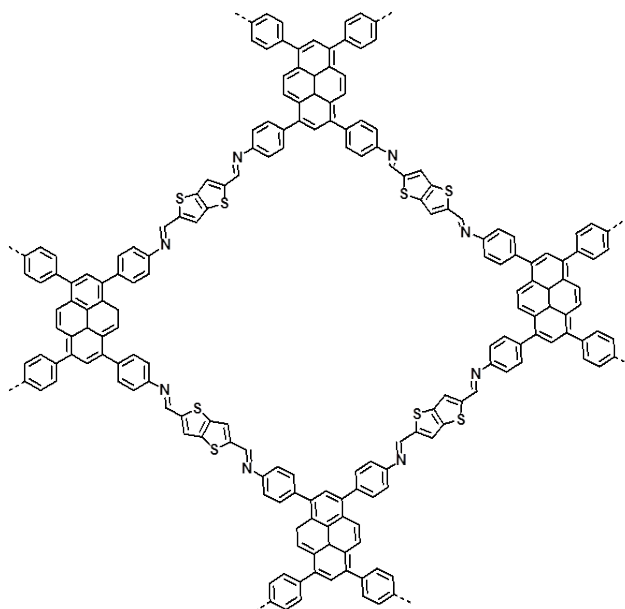


Fig. S9 Chemical structure of thienothiophene-pyrene COF.

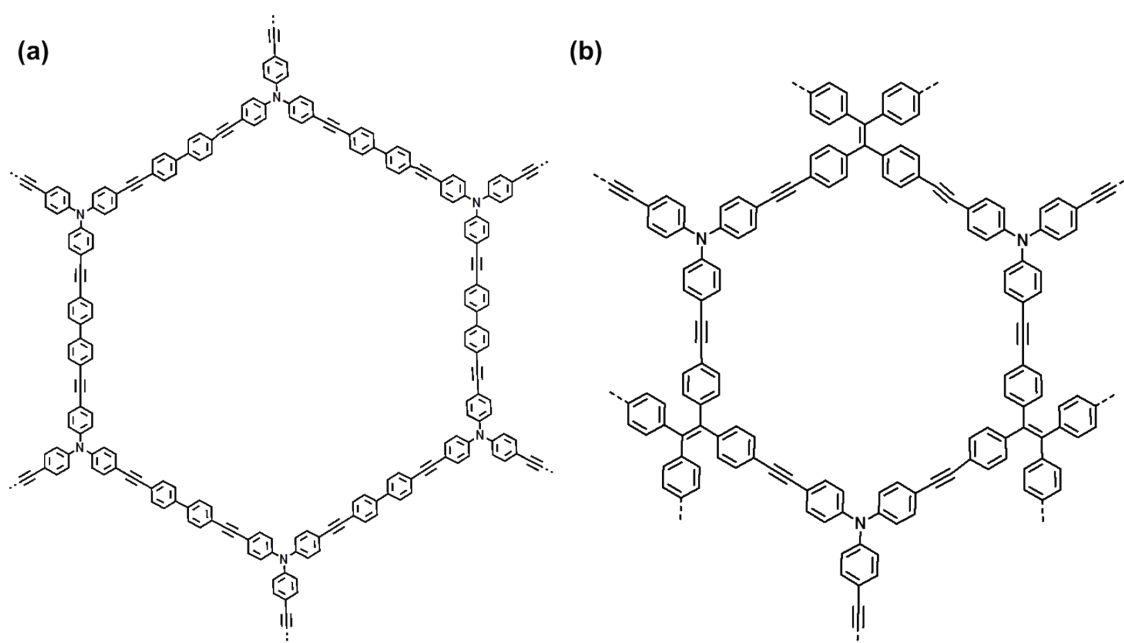


Fig. S10 Chemical structures of two electrochemically active CMPs.

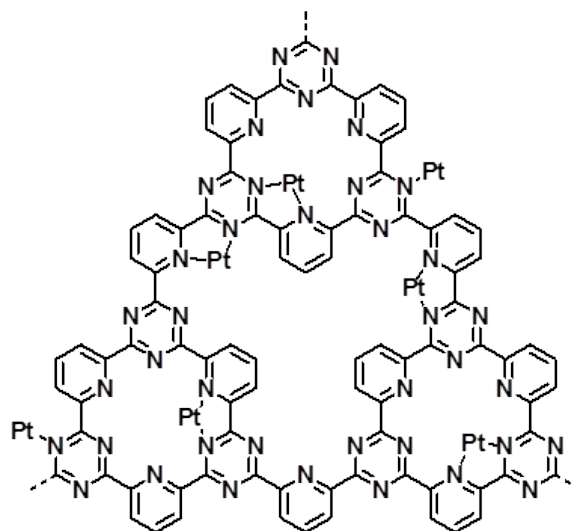


Fig. S11 Chemical structure of Pt-modified CTF.

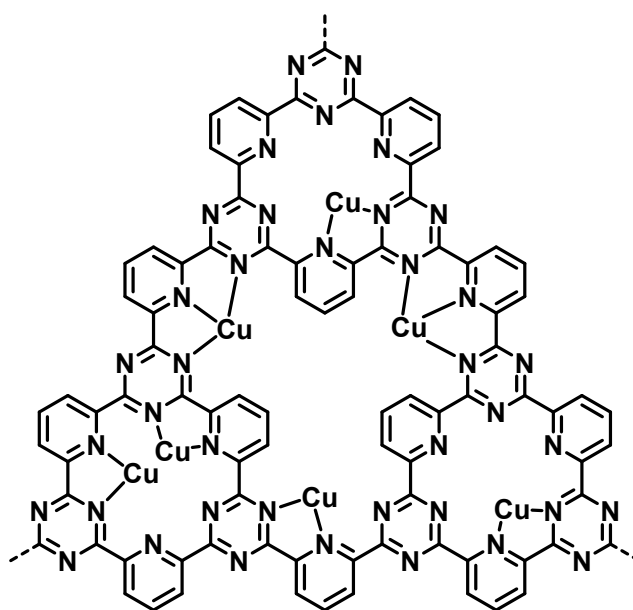


Fig. S12 Chemical structure of copper-modified CTF.

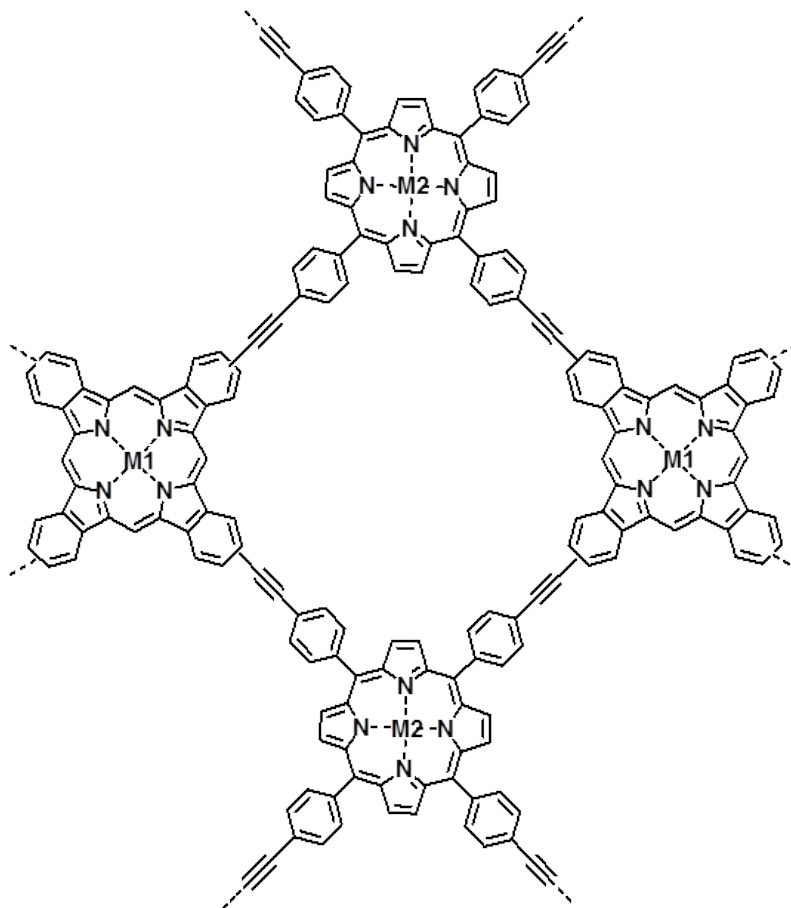


Fig. S13 Chemical structure of mixed phthalocyanine-porphyrin-based CMP (FePcZnPor-CMP: M1 = Fe, M2 = Zn; ZnPcFePor-CMP: M1 = Zn, M2 = Fe; FePcFePor-CMP: M1 = M2 = Fe; and ZnPcZnPor-CMP: M1 = M2 = Zn).

Section 4. Chemical structures of typical POPs for CO₂ reduction reaction

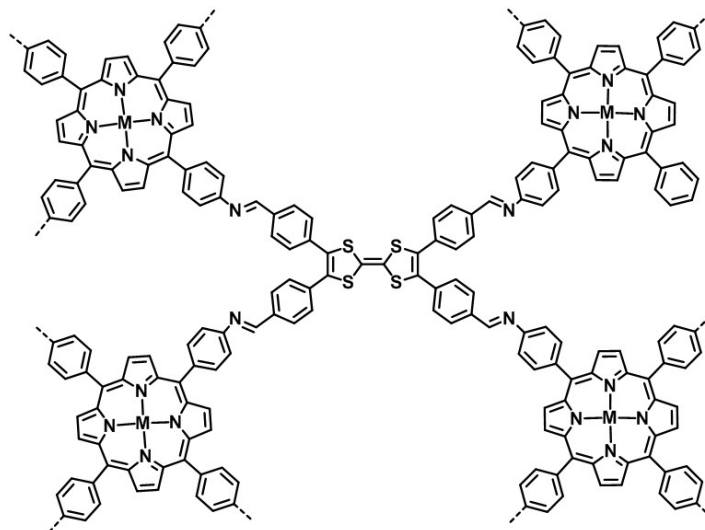


Fig. S14 Chemical structure of metalloporphyrin-tetrathiafulvalene based COF.

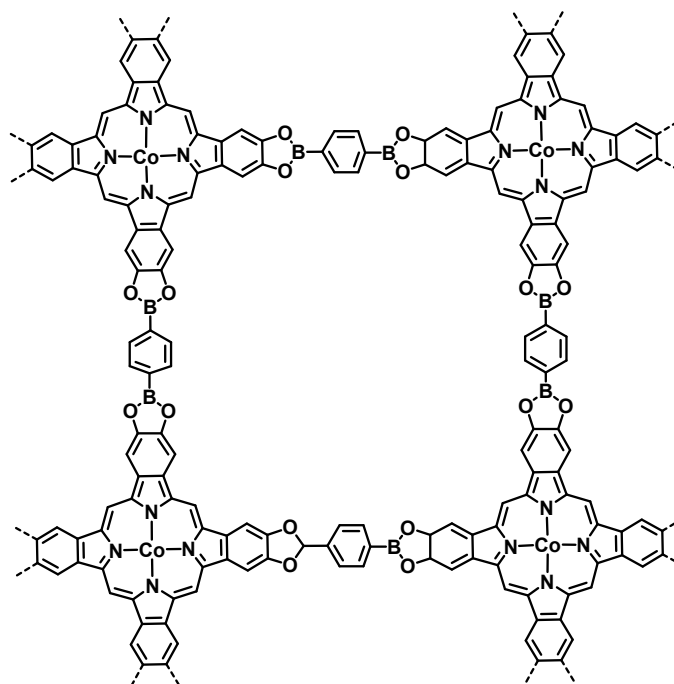


Fig. S15 Chemical structure of Co-Pc-PBBA.

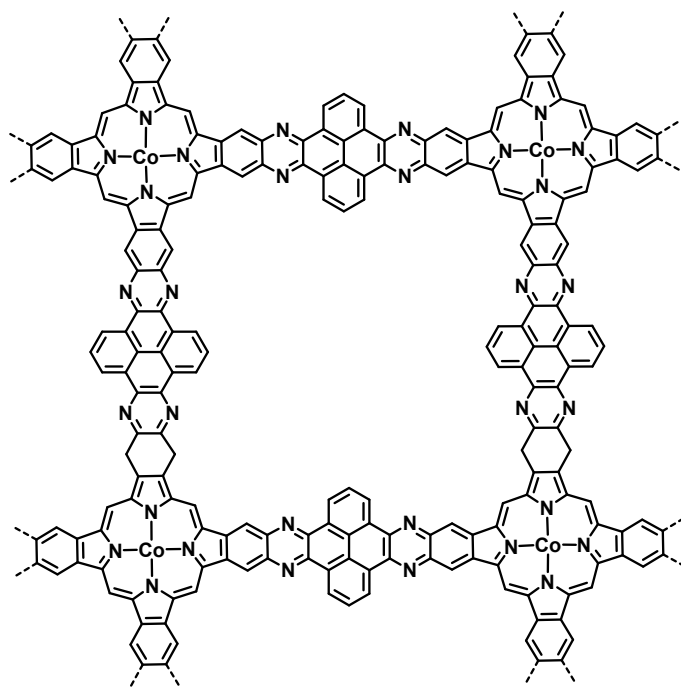


Fig. S16 Chemical structure of CoPcPDQ-COF.

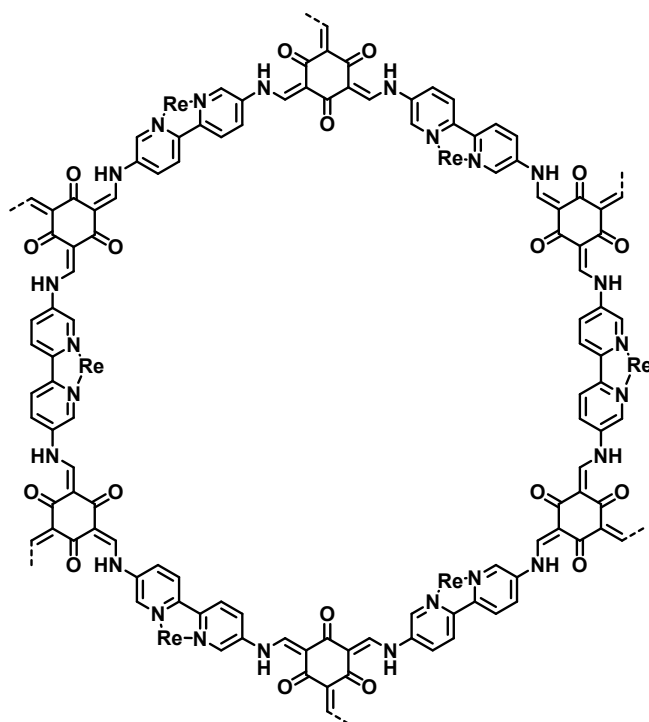


Fig. S17 Chemical structure of Re(I) modified COF.

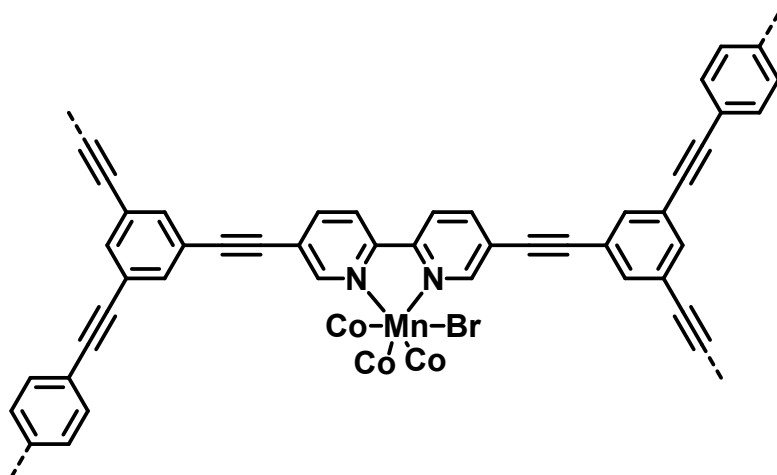


Fig. S18 Chemical structure of Mn(CO)₅Br modified CMP.

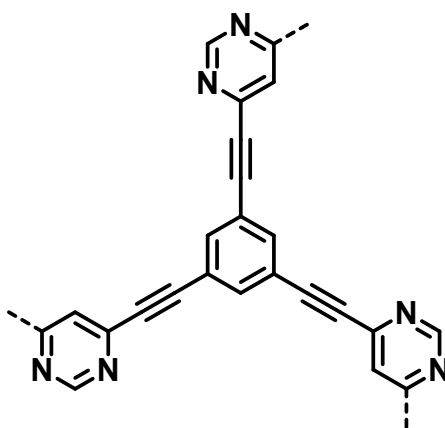


Fig. S19 Chemical structure of PyPOP.

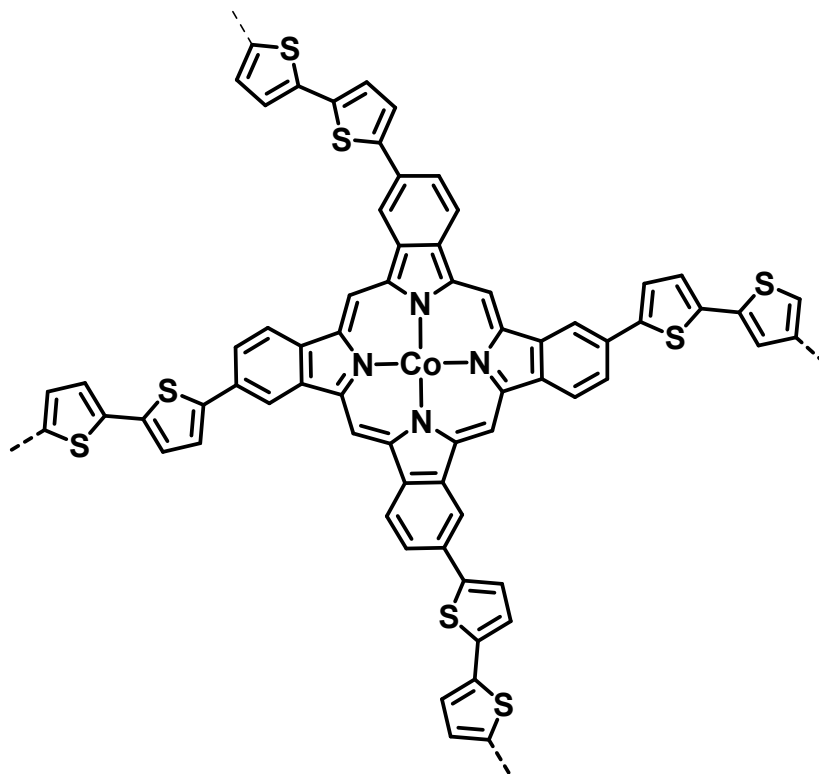


Fig. S20 Chemical structure of p(CoPc-1).

Section 5. Chemical structures of typical POPs for other reactions

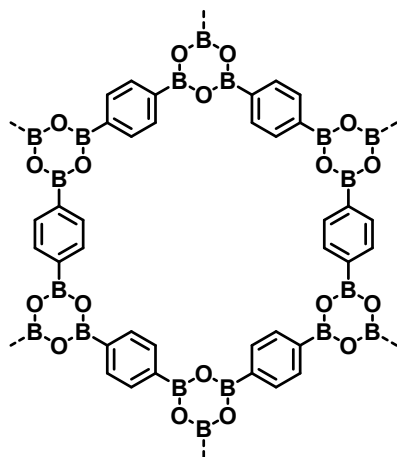


Fig. S21 Chemical structure of B-rich COF.

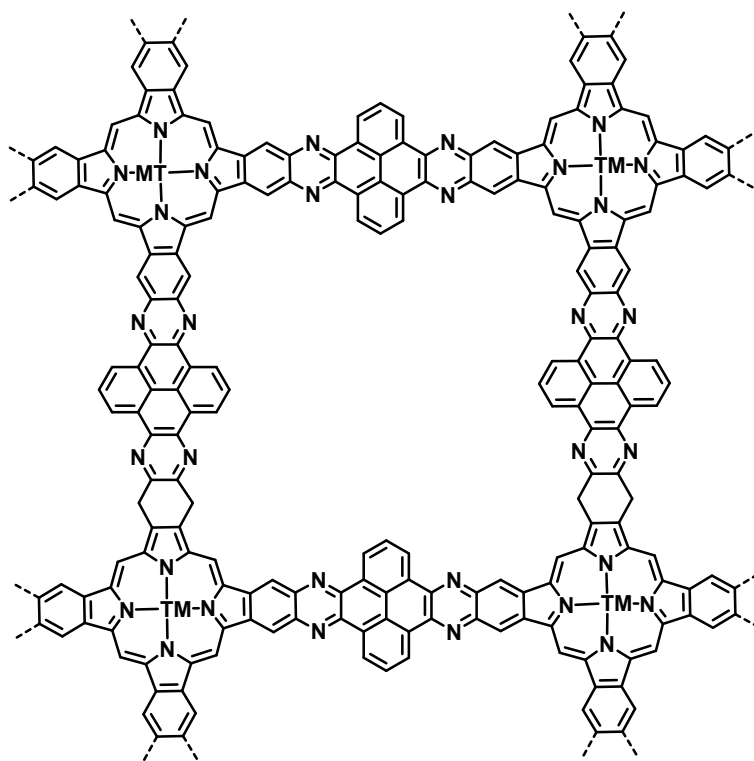


Fig. S22 Chemical structure of conductive Mo-COF (TM = Mo).

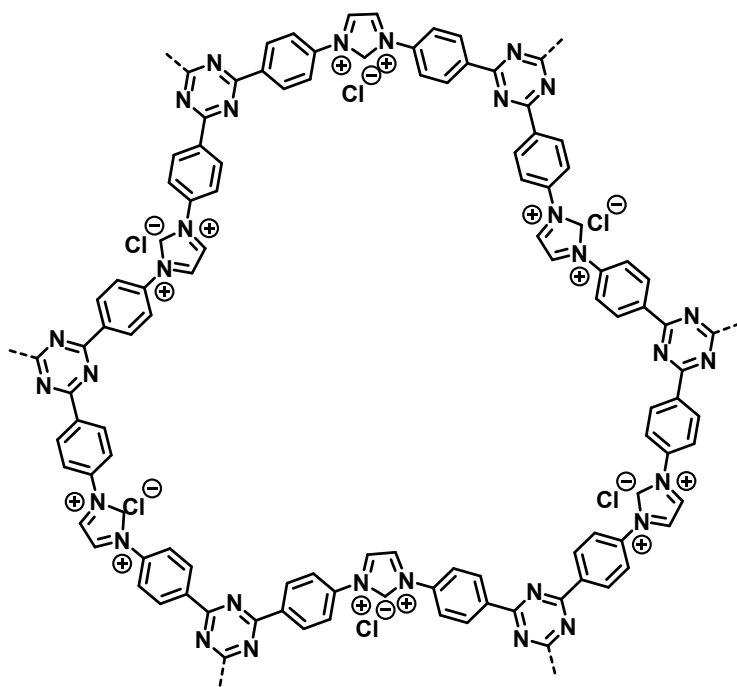


Fig. S23 Chemical structure of the cationic CTF.