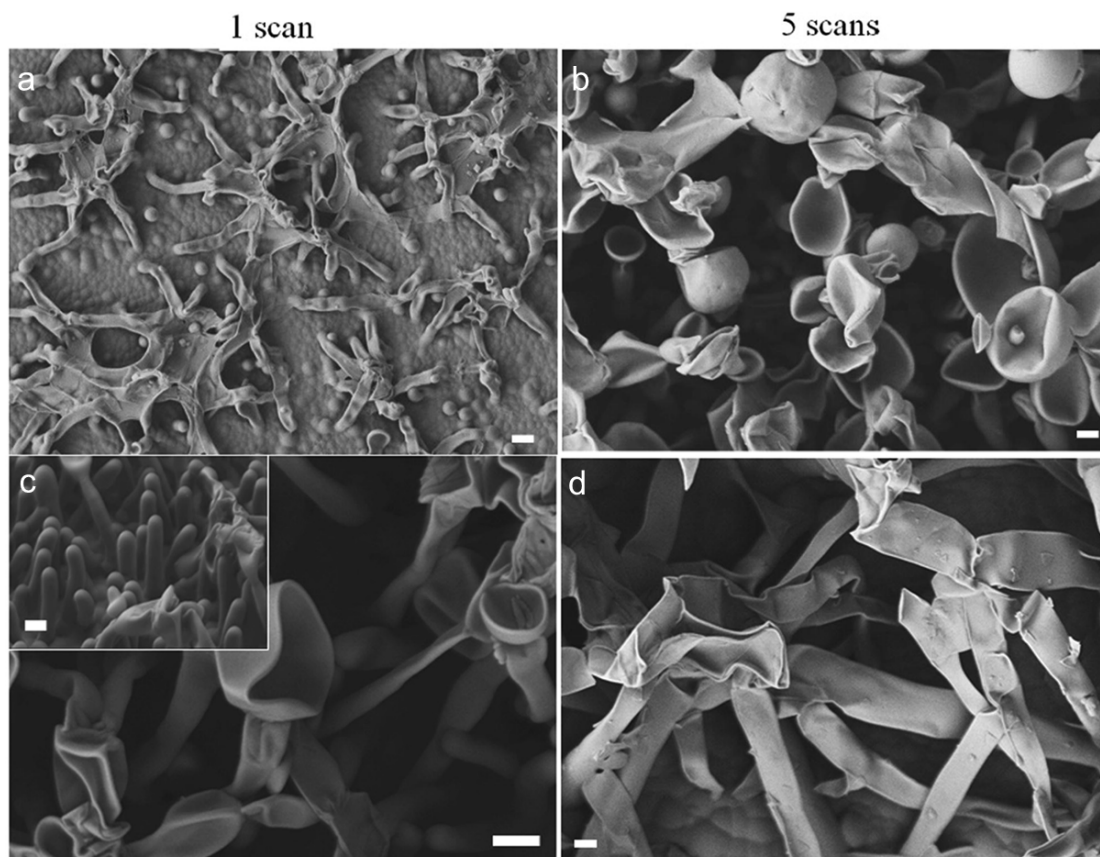## Supplementary material：

Figure S1[1]：a、b)Pore structure of hydrophobic porous polymer films under different number of scans; c)Hole structures formed under cyclic voltammetry were used; d)Hole structure formed under constant current.
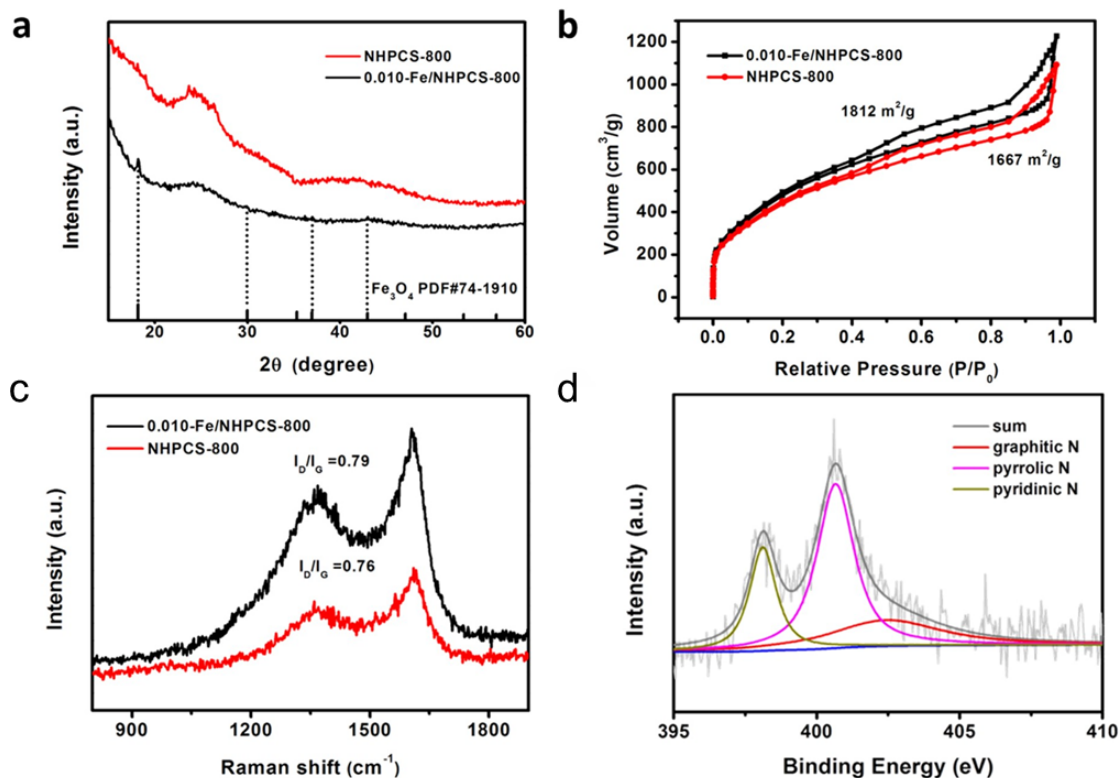
Figure S2[2]: a) The XRD patterns of 0.010-Fe/NHPCS-800 and NHPCS-800, b) the adsorption-desorption isotherms of 0.010-Fe/NHPCS-800 and NHPCS-800, c) the Raman plots of 0.010-Fe/NHPCS-800 and NHPCS-800, and d) the XPS spectra of the N 1s region of 0.010-Fe/NHPCS-800.
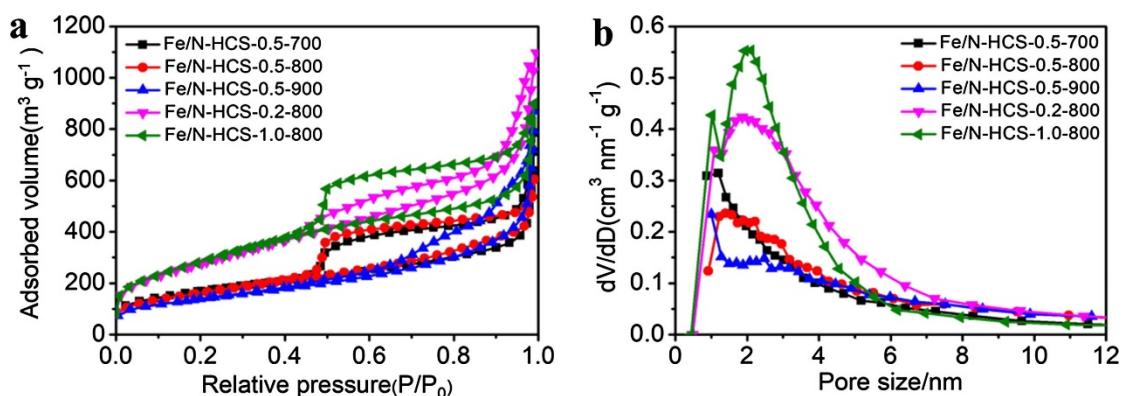

Figure S3[3]: a) Nitrogen adsorption-desorption isotherms and b) pore size distribution curve of Fe/N-HCS-X-T.

Reference

(1) Fradin, C.; Guittard, F.; Darmanin, T. A Soft Template Approach to Various Porous Nanostructures from Conjugated Carbazole-Based Monomers. *J. Of N.a. And N.a. Science* **2021**, *584*, 795–803. https://doi.org/10.1016/j.jcis.2020.10.010.

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(3) Song, K.; Shi, B.; Song, D.; Zhang, Q.; He, X.; Dou, Z.; Hu, X.; Cui, L. Tunable Engineering Hollow Carbon Nanomaterial Served as an Excellent Catalyst for Oxygen Reduction Reaction and Hydrogen Evolution Reaction. *J. Of N.a. And N.a. Science* **2019**, *544*, 178–187. https://doi.org/10.1016/j.jcis.2019.02.085.