

Supporting Information

Three-dimensional N, P, and O tri-doped porous carbon for multifunctional electrocatalytic reactions

Lulu Chen^a, Yanan zhang^a, Zhihui Liu^b, Liqiang Hou^{a,}, Xien Liu^{a,*}*

^a State Key Laboratory Base of Eco-Chemical Engineering, College of Chemical Engineering, Qingdao University of Science and Technology, Qingdao 266042 (China)

^b Lanzhou Petrochemical Research Center, Petrochemical Research Institute, PetroChina, Lanzhou 730060, China

* Corresponding authors: L Hou, houliqiang@qust.edu.cn; X. Liu, liuxien@qust.edu.cn

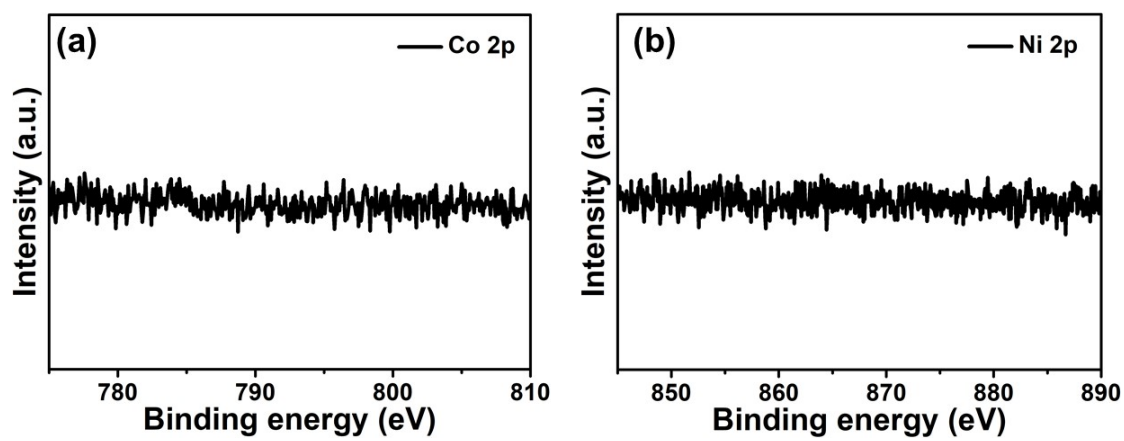


Figure S1 The high-resolution XPS of (a) Co 2p and (b) Ni 2p in 3D-NPOC.

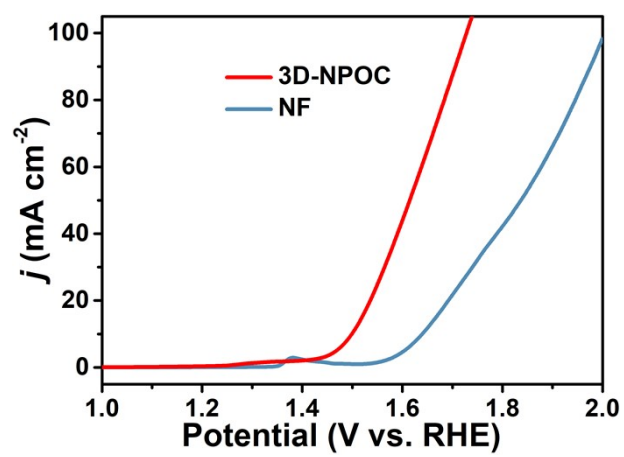


Figure S2 The comparison between blank NF and 3D-NPOC of OER activity.

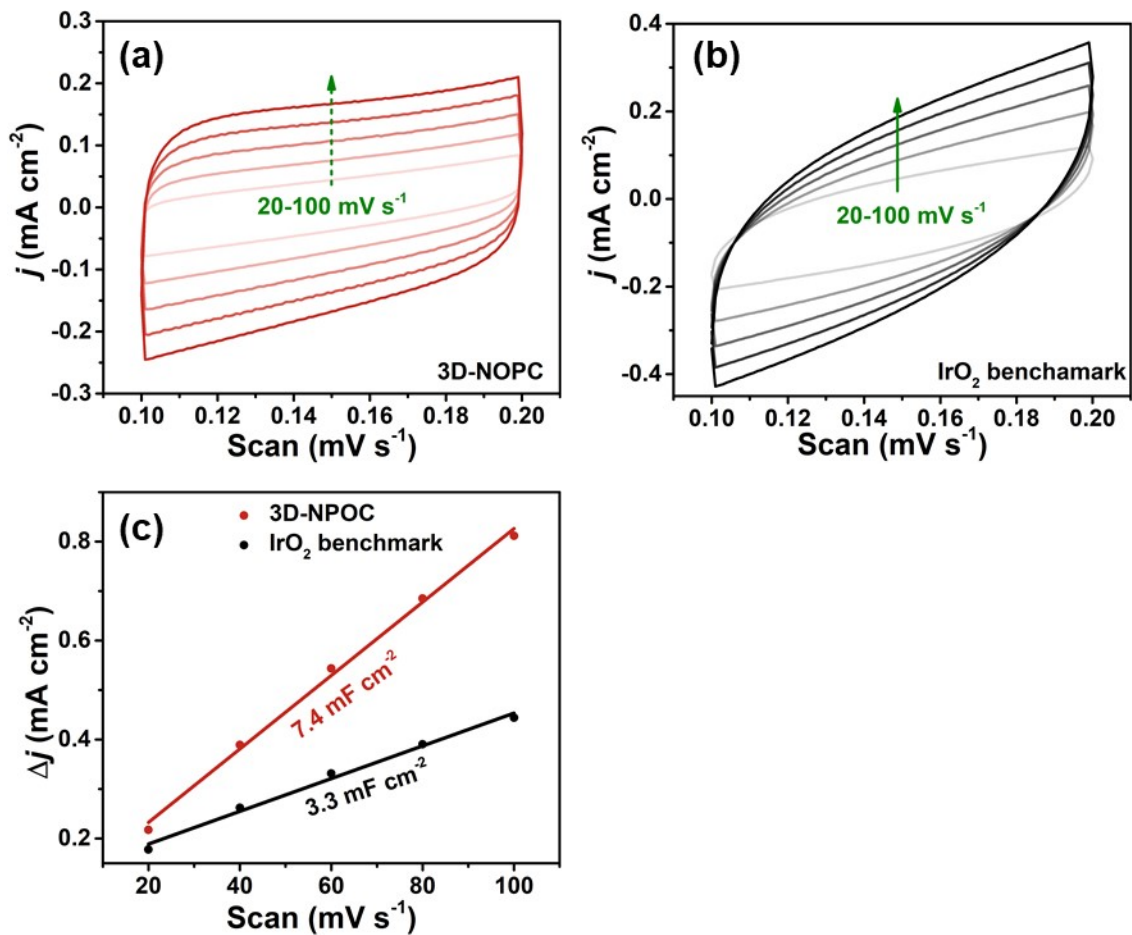


Figure S3 The CV curves recorded at different scan rates for (a) 3D-NPOC, (b) Commercial IrO₂. (c) Double-layer capacitance (C_{dl}).

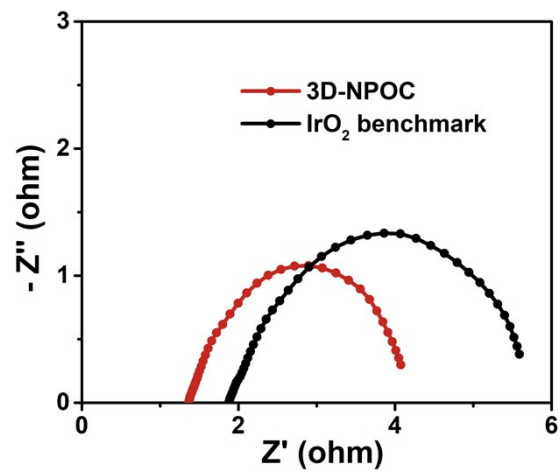


Figure S4 Nyquist plots of 3D-NPOC and IrO₂ benchmark.

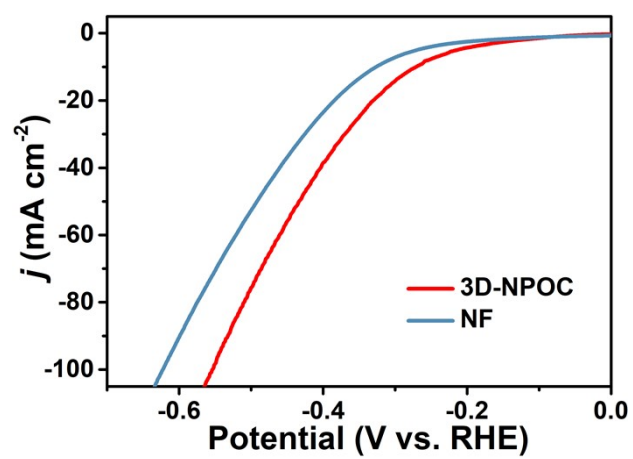


Figure S5 The comparison between blank NF and 3D-NPOC of HER activity.

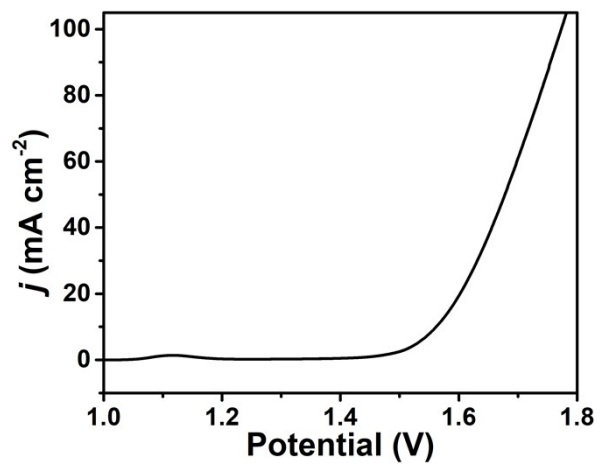


Figure S6 Overall catalytic water splitting activity of 3D-NPOC in 1 M KOH.