

Electronic Supplementary Information

Facile Synthesis of Porous CuO Polyhedron from Cu-based Metal Organic Framework (MOF-199) for Electrocatalytic Water Oxidation

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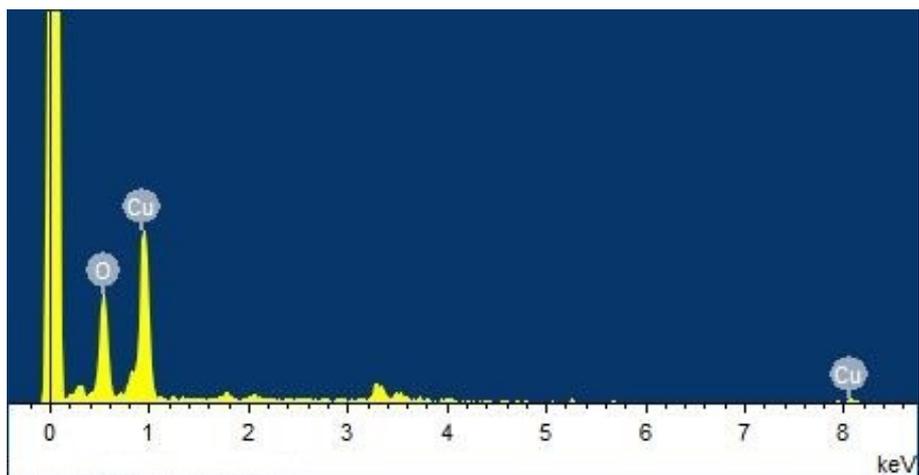


Fig. S1 EDX image of CuO materials.

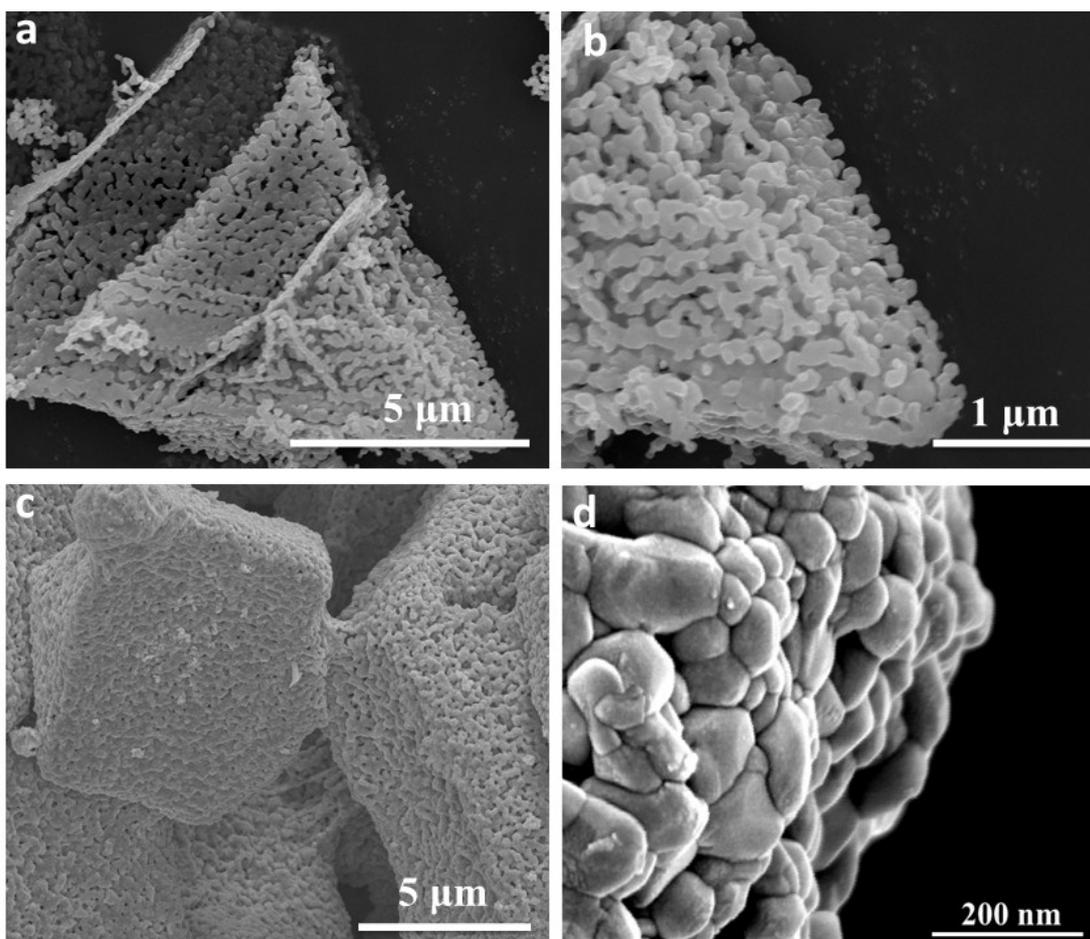


Fig. S2 SEM images of CuO materials.

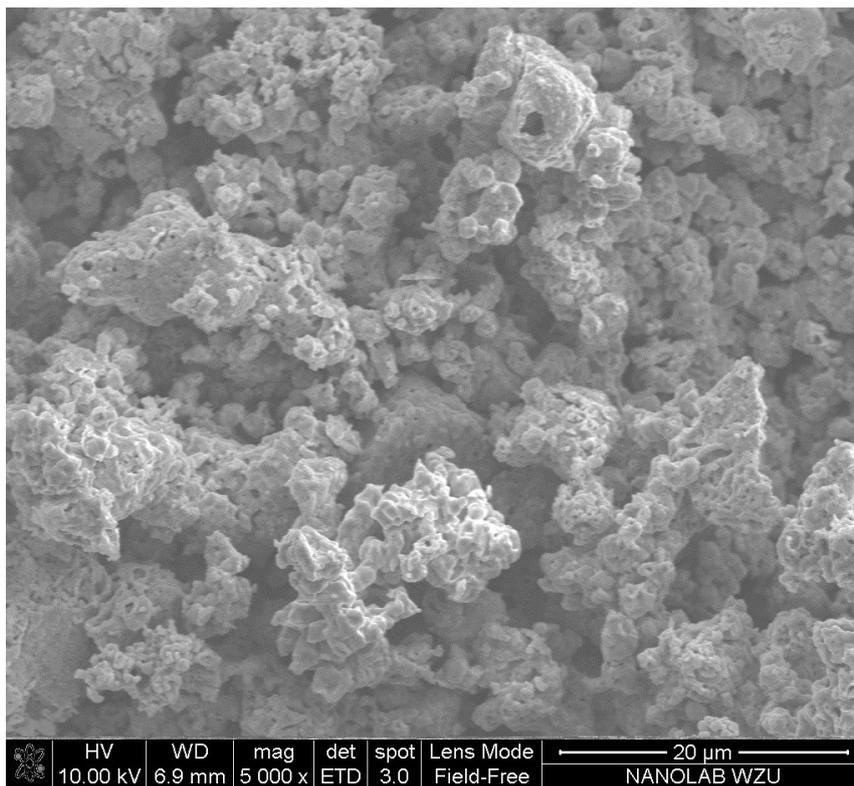


Fig. S3 Low-magnification SEM image of CuO architectures obtained after calcination at 500 °C.

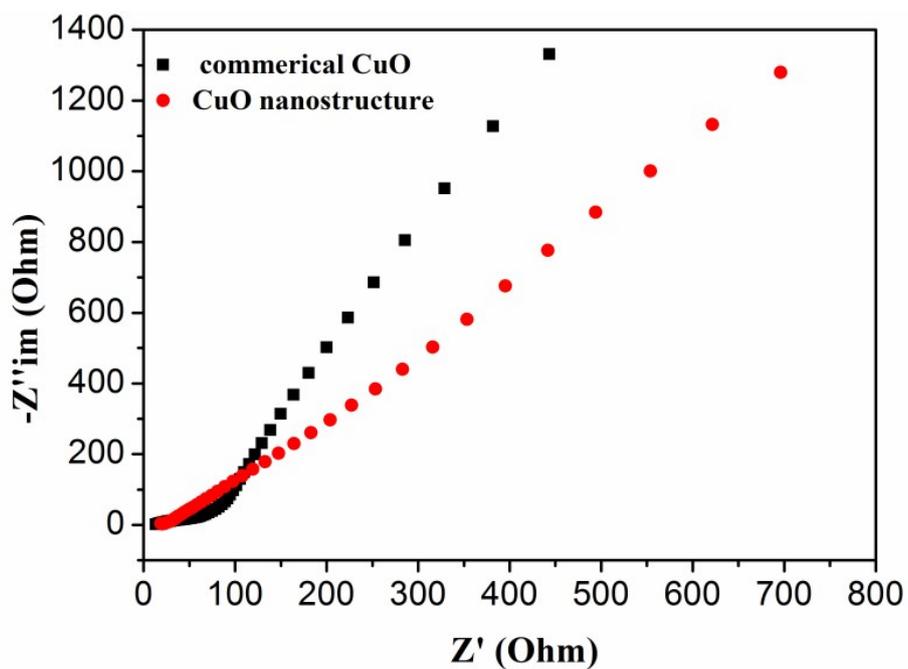


Fig. S4 EIS Nyquist plot measured at the open circuit potential in the frequency range from $10^{-2} \sim 10^5$ Hz with an AC amplitude of 5 mV for as-prepared CuO and

commercially-available CuO.

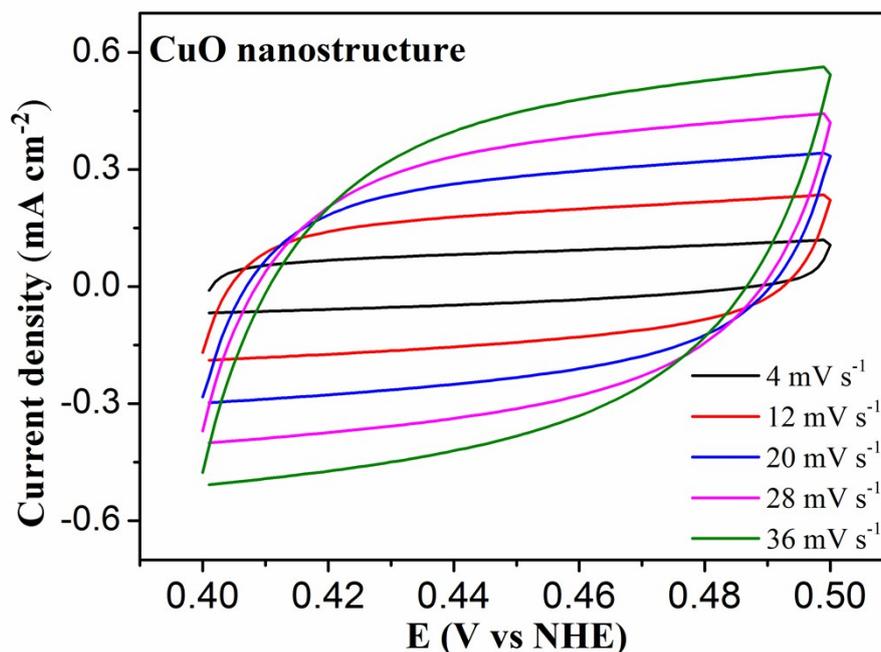


Fig. S5 CVs plots of porous CuO polyhedron obtained in 0.1 M KBi solution (pH 9.2) under various scan rates from 4 to 36 mV s^{-1} in the non-Faradaic potential range (0.40 – 0.50 V vs NHE).

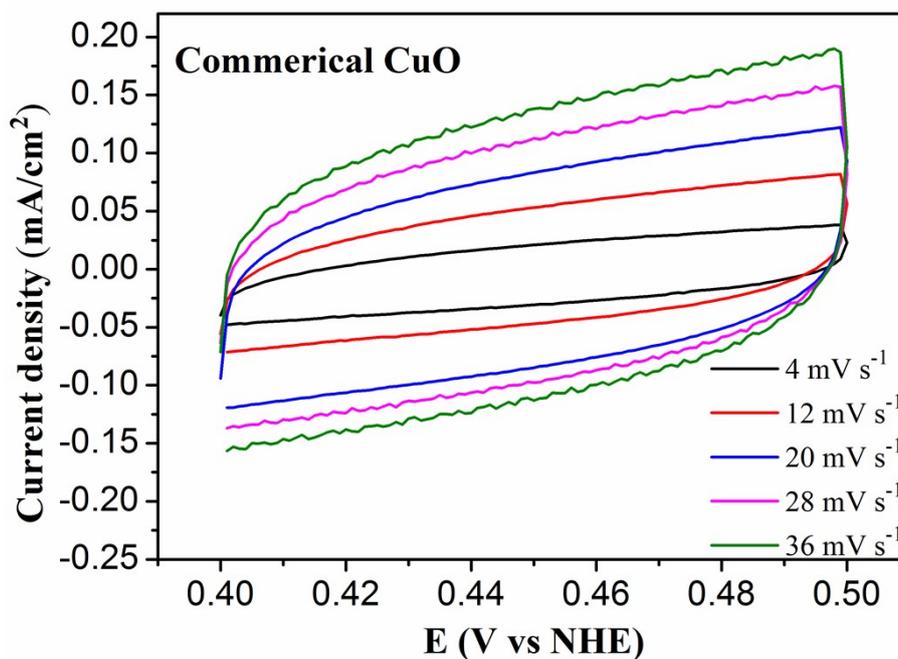


Fig. S6 CVs plots of commercially-available CuO obtained in 0.1 M KBi solution (pH 9.2) under various scan rates from 4 to 36 mV s^{-1} in the non-Faradaic potential range (0.40 – 0.50 V vs NHE).

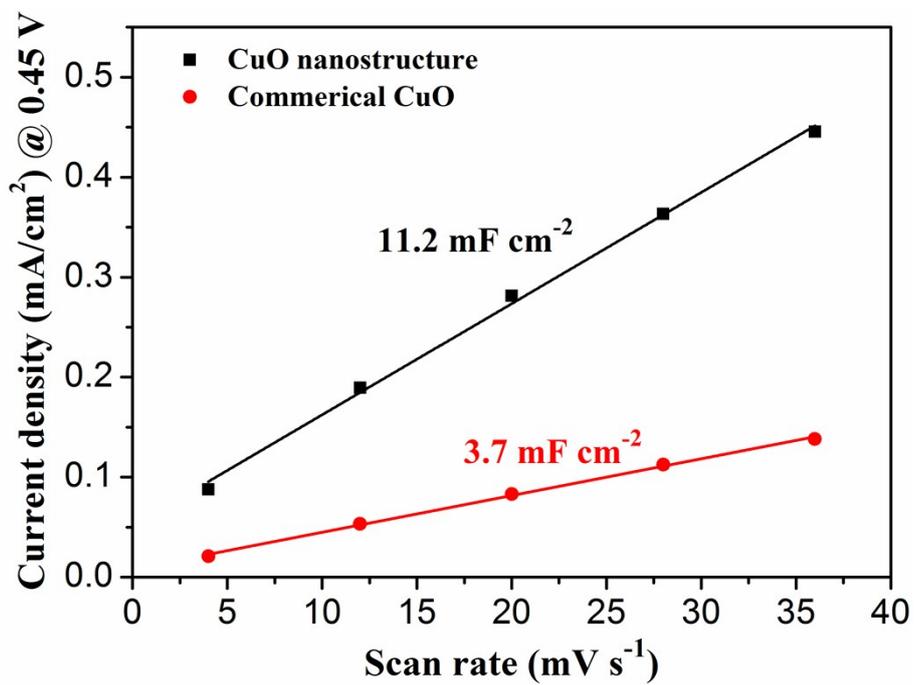


Fig. S7 Plots of current densities at 0.45 V vs NHE against the scan rates.

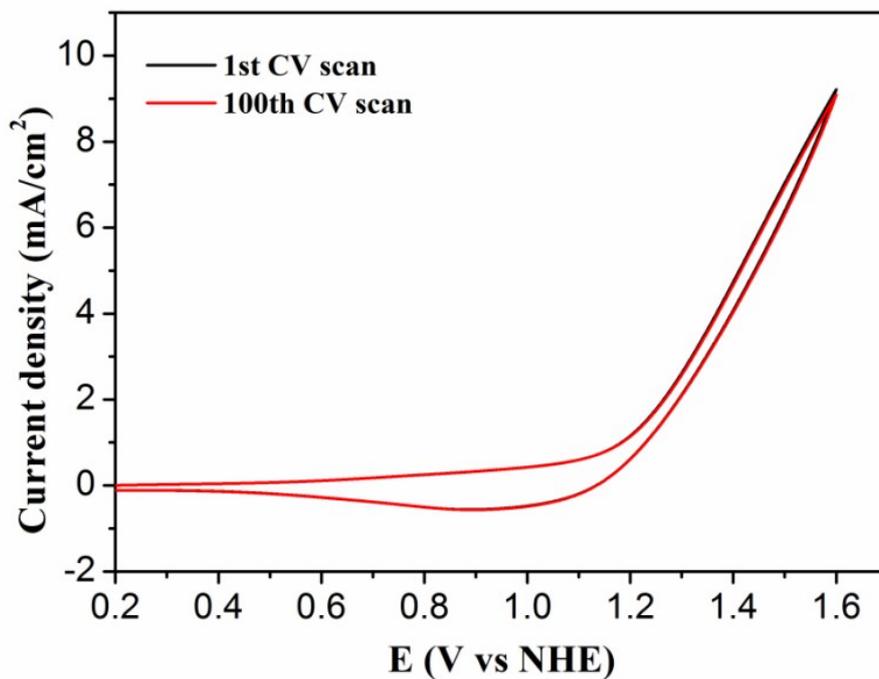


Fig. S8 Successive CV cycles at a CuO/GC electrode in a deoxygenated KBi solution (0.1 M, pH 9.2).

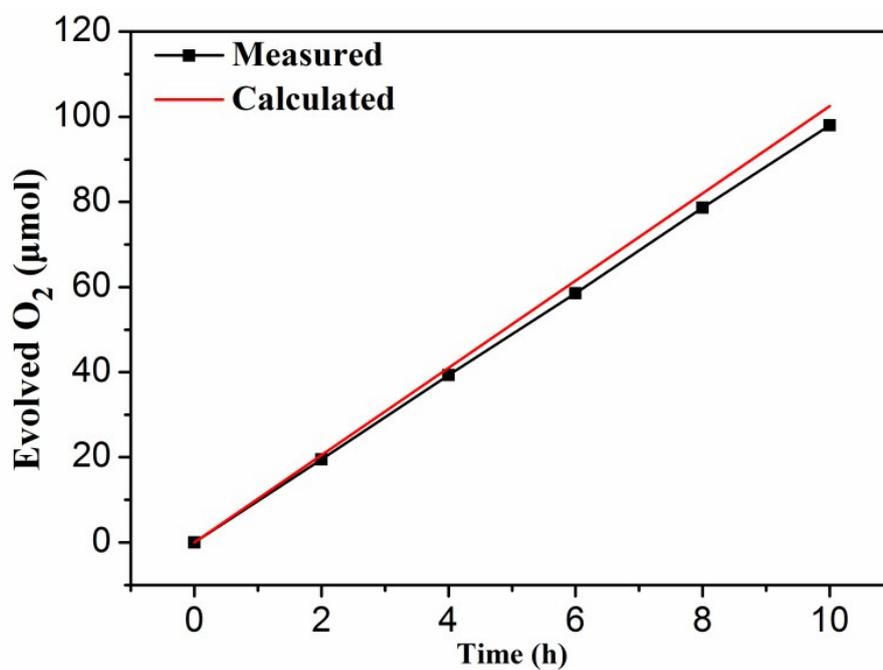


Fig. S9 Calculated and measured oxygen evolution in pH 9.2 KBi solution by CPE at 1.30 V vs NHE using CuO/CC electrode as working electrode.

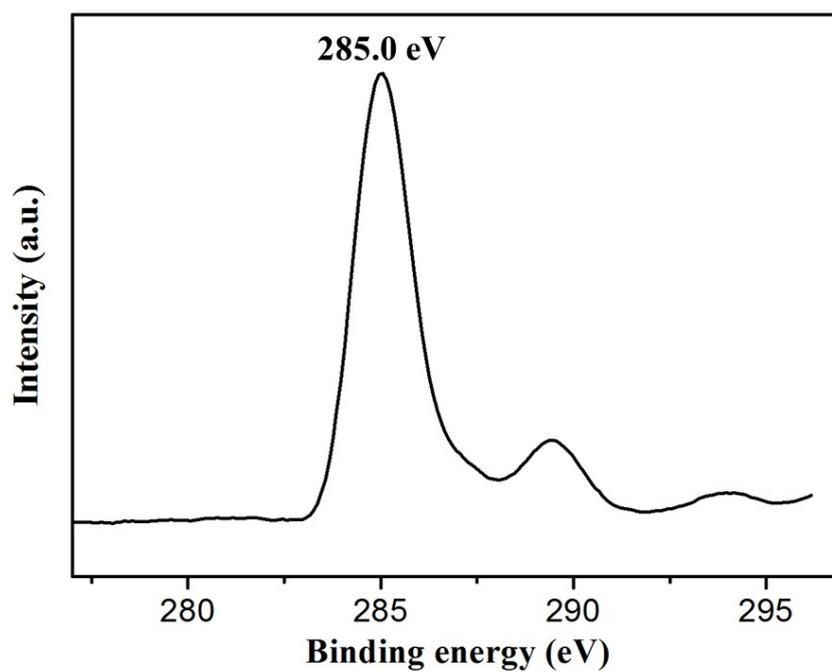


Fig. S10 XPS spectrum centered on the C 1s peak.

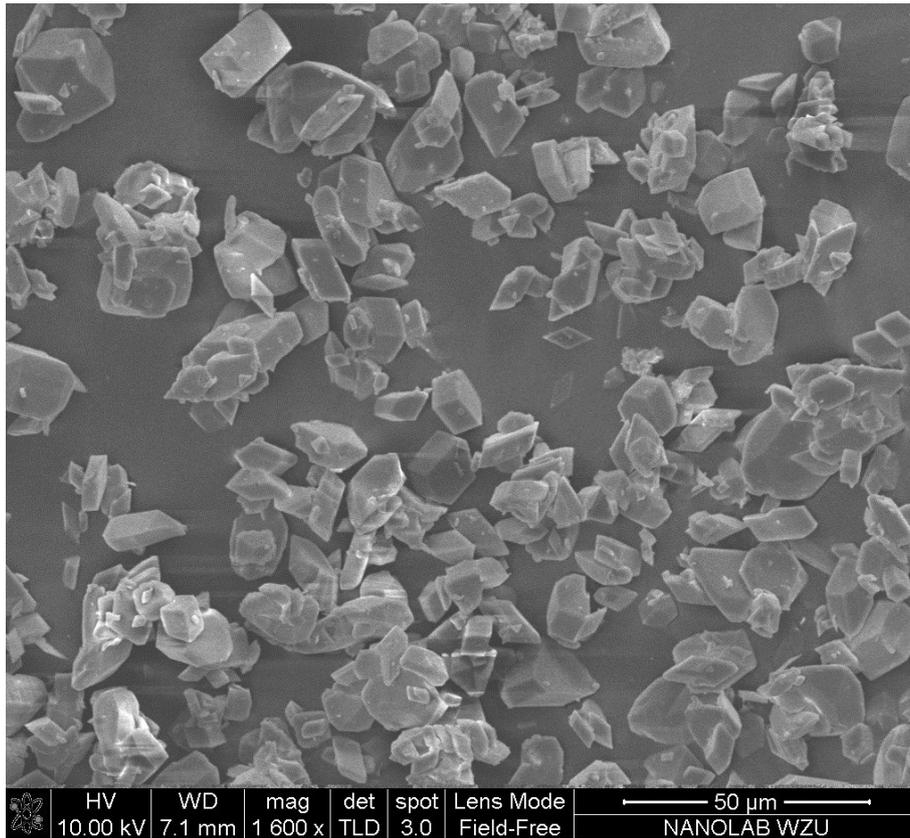


Fig. S11 SEM image of porous CuO polyhedra after electrolysis.