

Electronic Supplementary Material

Sub 10 nm CoO nanoparticles decorated graphitic carbon nitride Type II heterojunction for solar hydrogen generation

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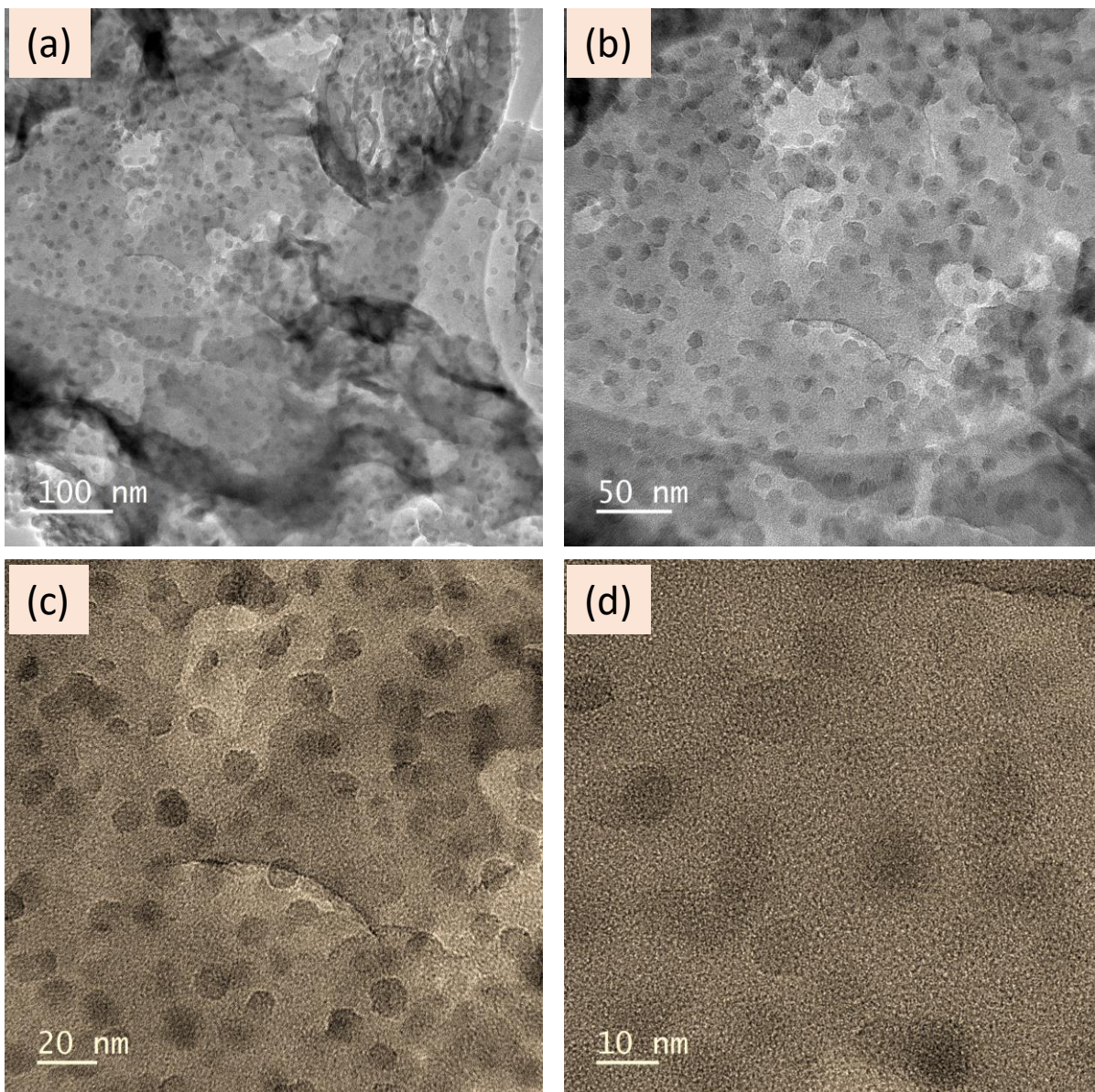


Fig. S1 HR-TEM images of CoO/GCN

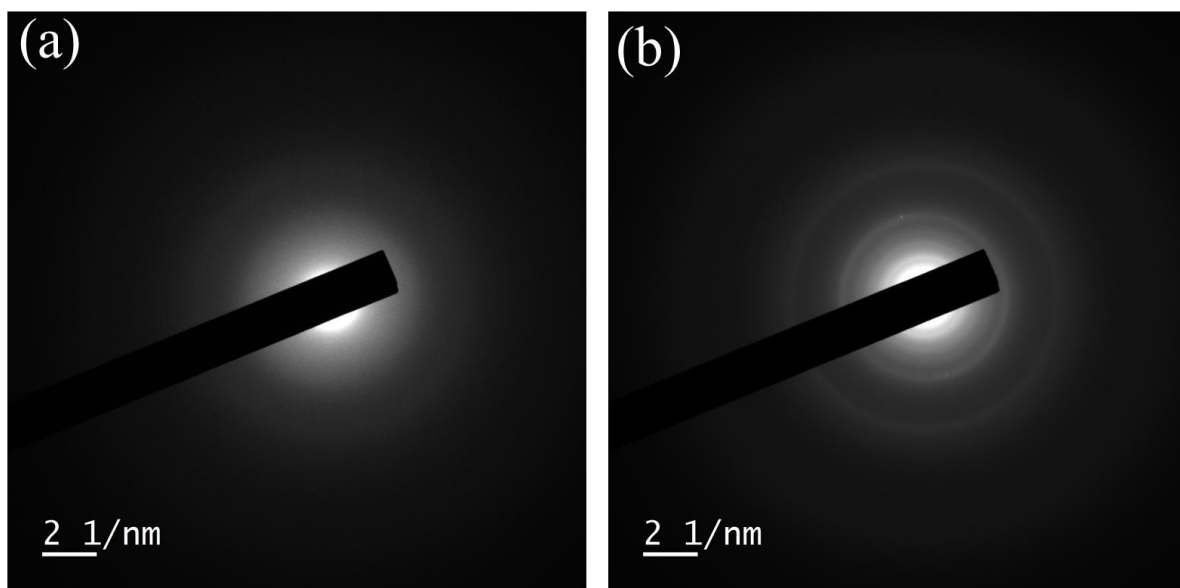


Fig. S2 SAED patterns of (a) GCN and (b) CoO-GCN-x.

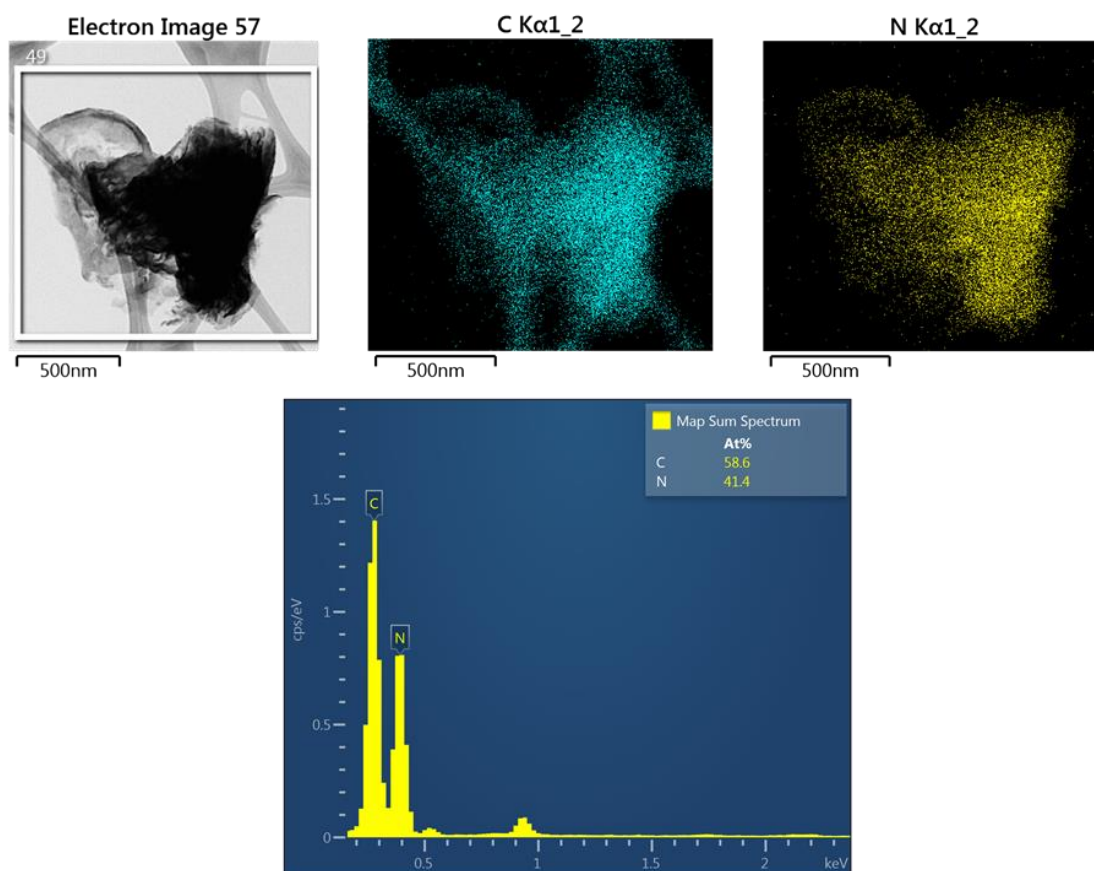


Fig. S3 Elemental mapping and EDS of as-prepared GCN.

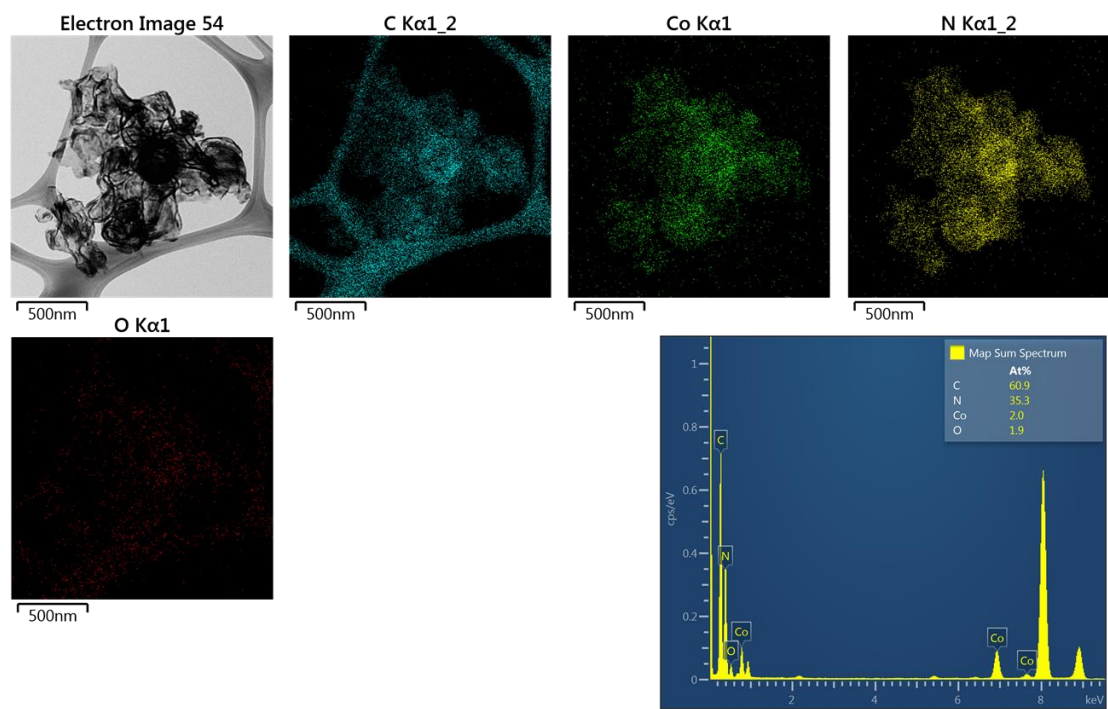


Fig. S4 Elemental mapping and EDS of CoO-GCN-x.

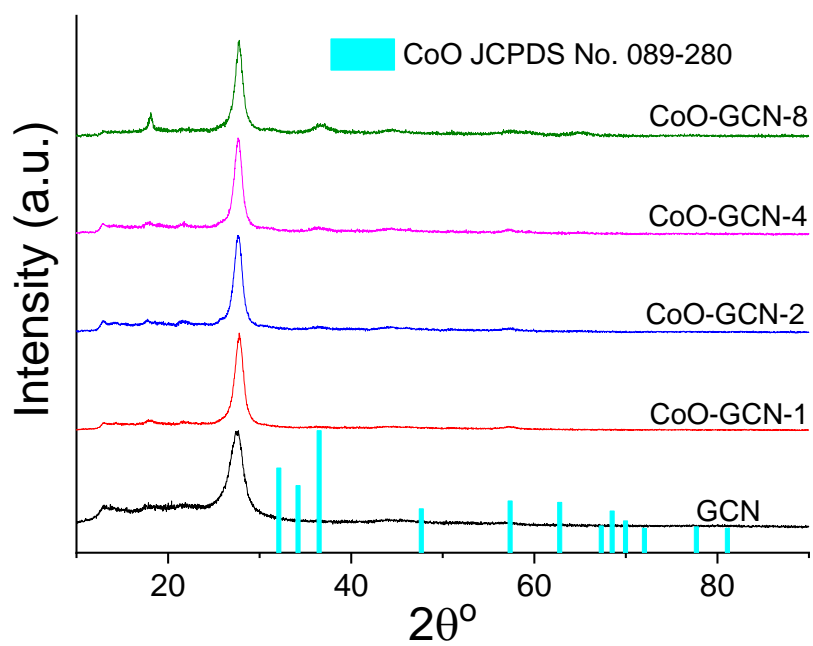


Fig. S5 Powder XRD pattern of GCN and CoO-GCN-x samples.

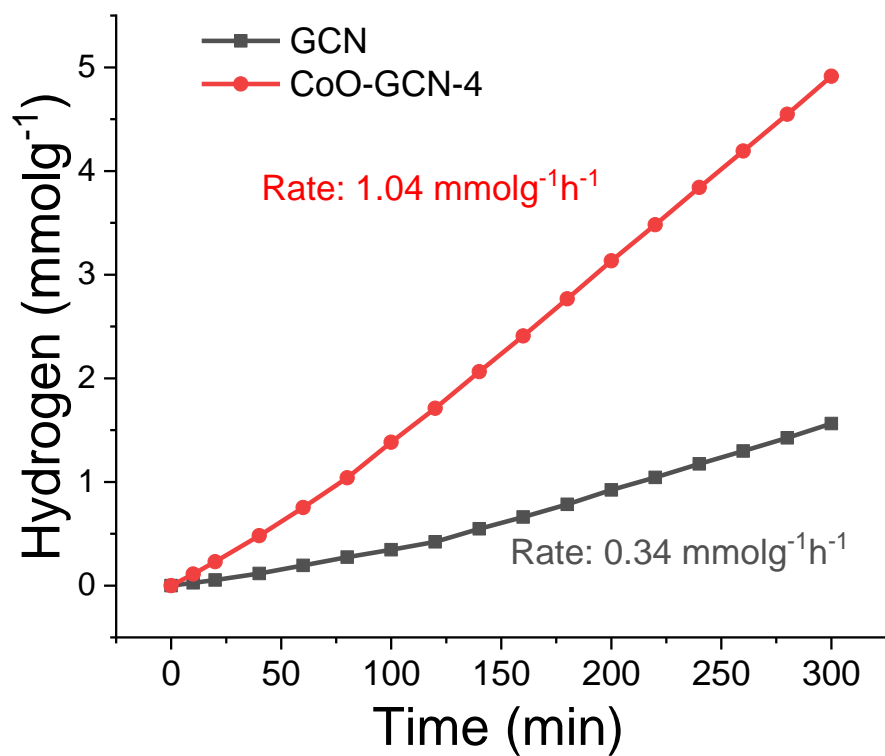


Fig. S6 Continuous hydrogen generation profile of bare GCN and CoO/GCN-4 without using Pt co-catalyst under simulated sunlight.

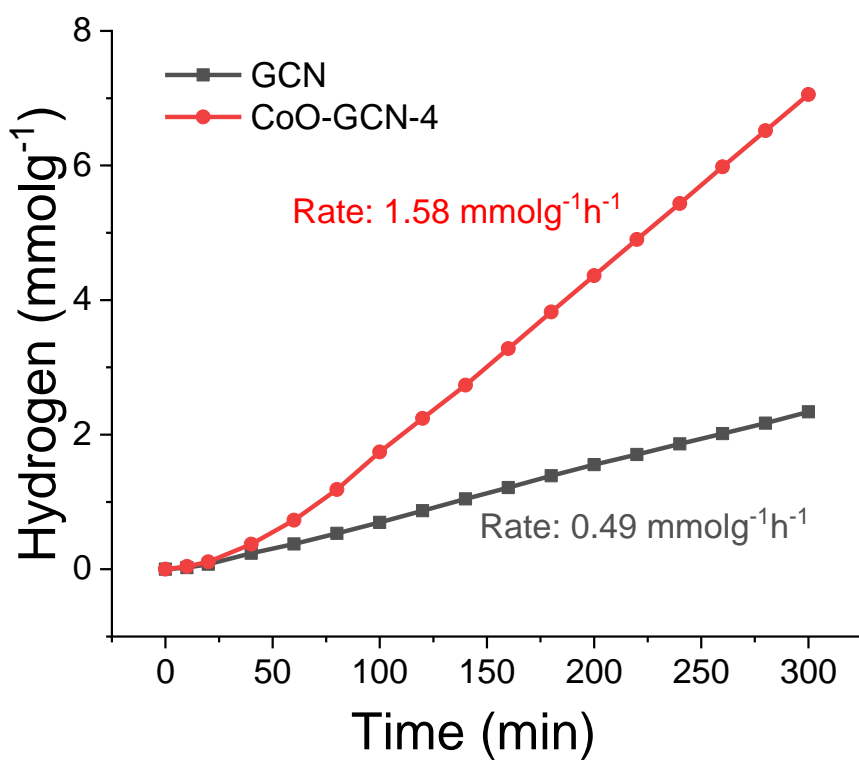


Fig. S7 Continuous hydrogen generation profile of bare GCN and CoO/GCN-4 under only visible ($\lambda > 395$ nm) light in the presence of Pt co-catalyst.

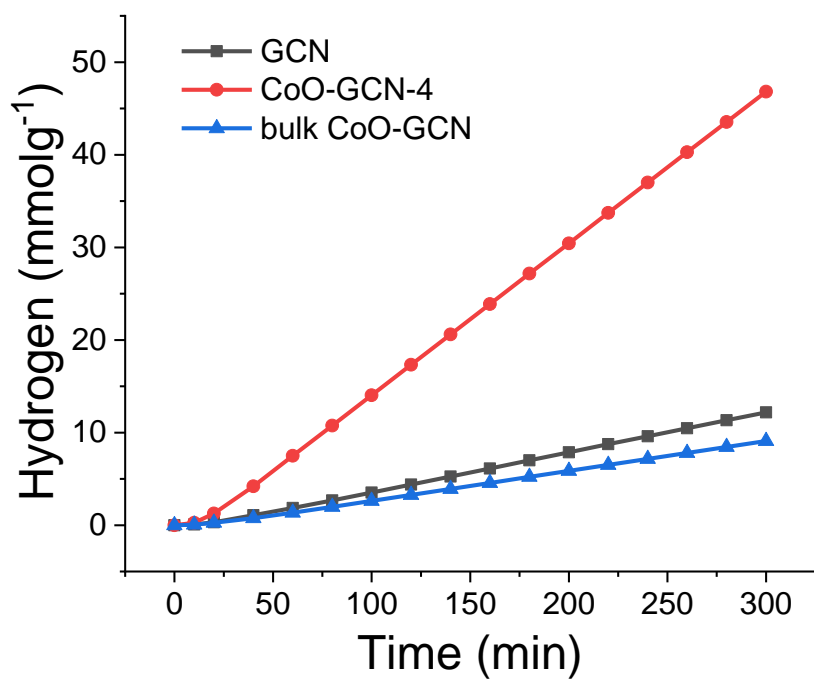


Fig. S8 Continuous hydrogen generation profile of bare GCN and CoO/GCN-4 and bulk CoO/GCN. Bulk CoO was prepared via pyrolysis of cobalt acetate to Co₃O₄ to CoO.

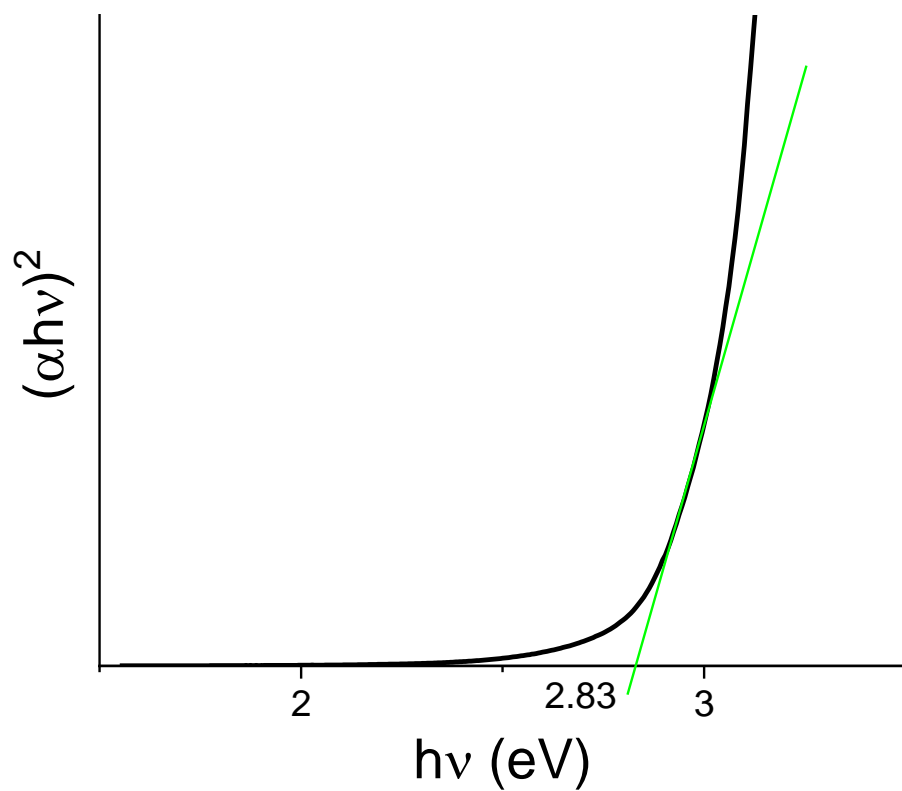


Fig. S9 Tauc plot calculated from the DRS data for GCN

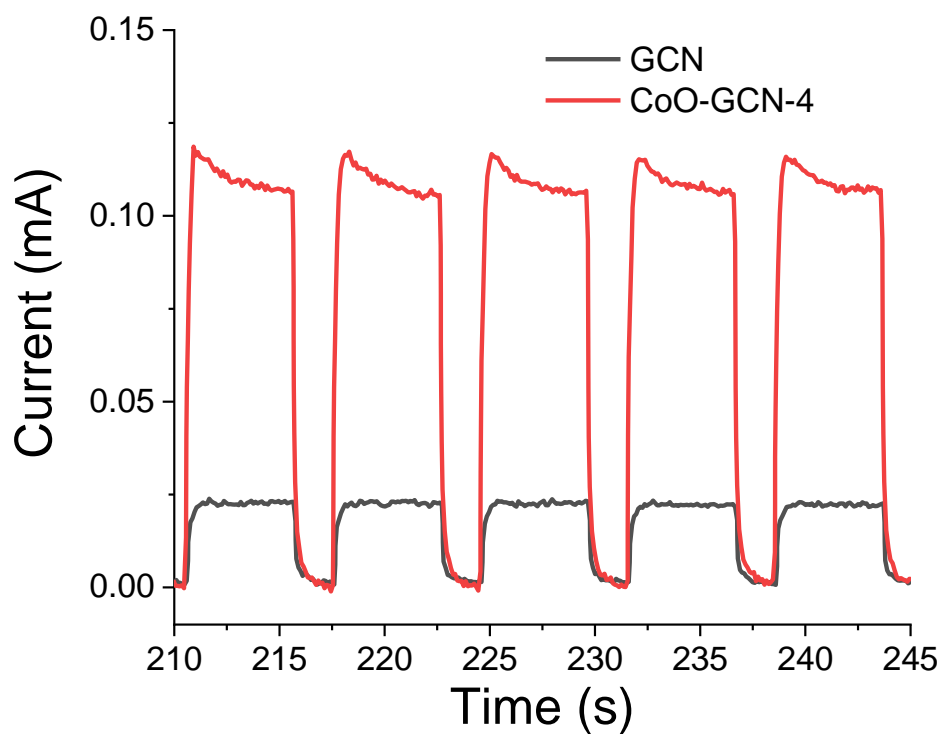


Fig. S10 Photocurrent response under simulated sunlight (1 sun) measured in Na_2SO_4 (0.5 M) as the electrolyte using Biologic VMP3 electrochemical workstation. A slurry containing 5.0 mg of catalyst, 0.1 ml of 5 wt % Nafion and 0.9 ml of water was prepared and coated on FTO glass for the current measurement.