Supplementary information

In situ fabrication of two-dimensional g-C_3N_4/$Ba_5Ta_4O_{15}$ nanosheet heterostructures with efficient charge separations and photocatalytic hydrogen evolution under visible light illumination

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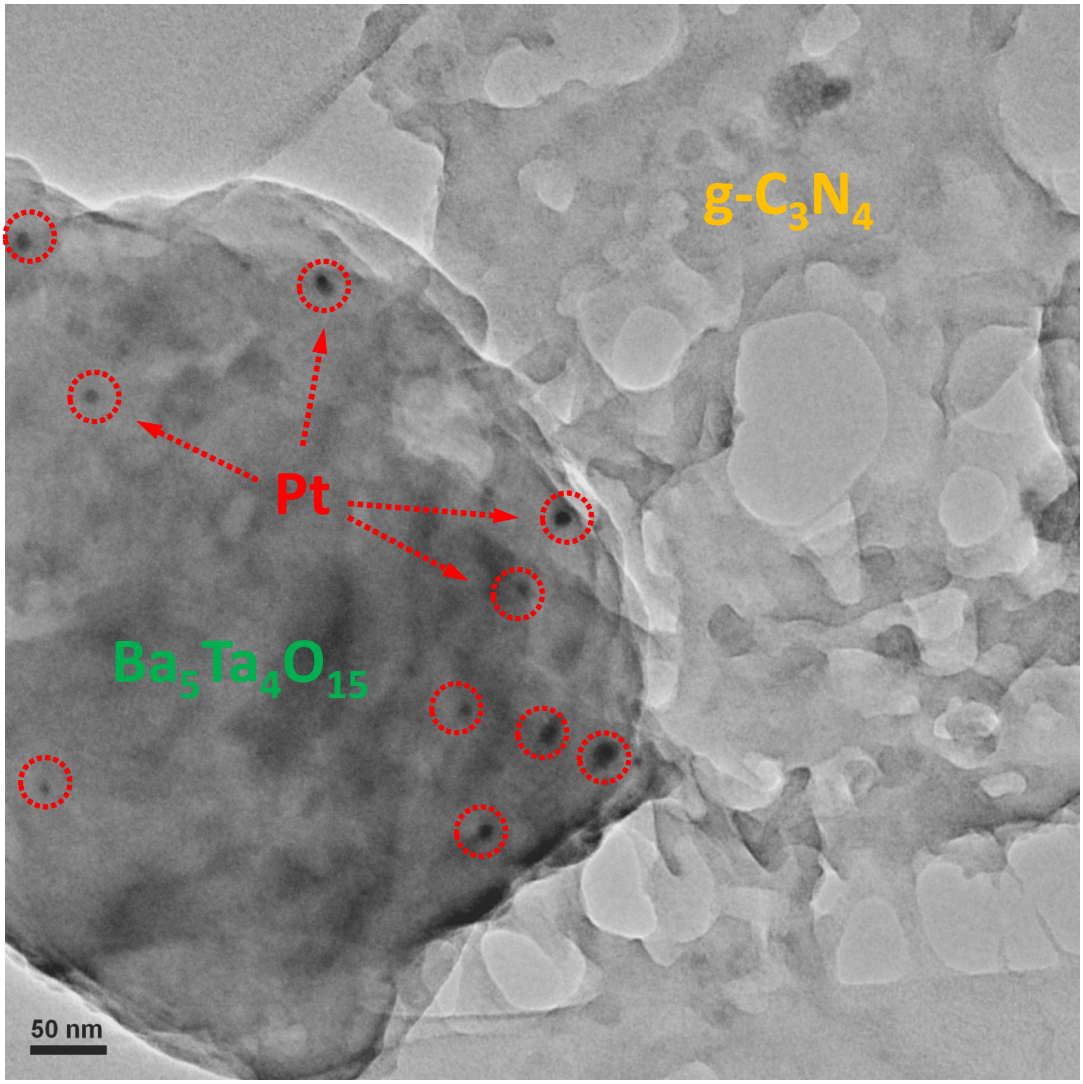

Figure S1. Transmission electron microscopy image of heterojunction (1:8) photo-deposited with Pt (1 wt%). The selectively deposition of Pt nanoparticles (black dot) on $Ba_5Ta_4O_{15}$ confirms the charge transfer from g-C_3N_4 to $Ba_5Ta_4O_{15}$.

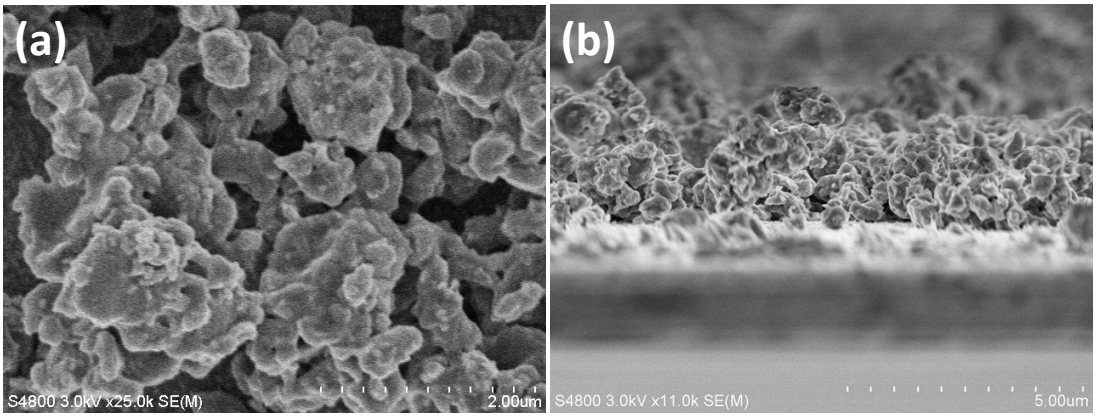

Figure S2. Field emission scanning electron microscopy images of as-prepared photoelectrode of heterojunctions (1:8): (a) electrode front and (b) electrode cross-section.

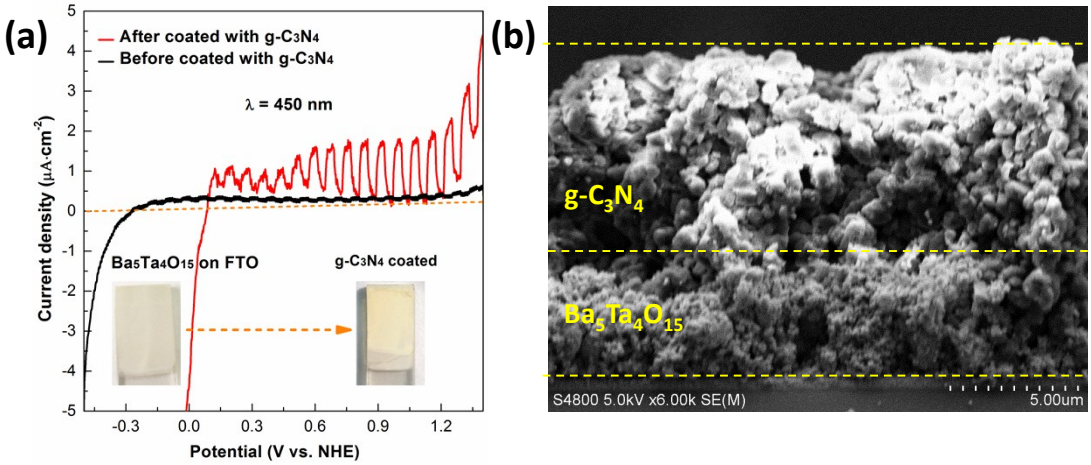

Figure S3. (a) LSV under chopped light illumination (λ = 450 nm) for $Ba_5Ta_4O_{15}$ film on FTO before and after coated with g-C_3N_4; (b) a SEM image of cross-section of photo-electrode used for such measurements, individual layer of $Ba_5Ta_4O_{15}$ and g-C_3N_4 has been labeled.