# Supporting Information

# A carbon Modified $NaTaO_3$ Mesocrystal Nanoparticle with Superior Efficiency of Visible Light Induced Photocatalysis

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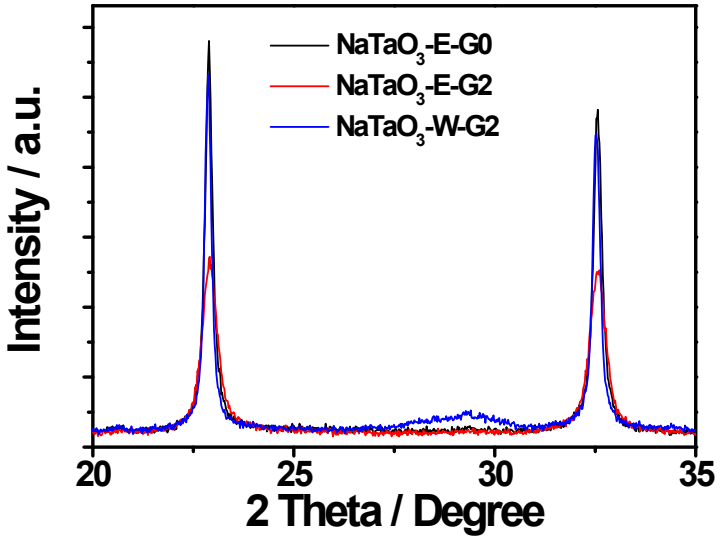



**Figure S1.** XRD patterns of samples $NaTaO_3$-E-G0, $NaTaO_3$-E-G2 and $NaTaO_3$-W-G2 in the degree range of 20-35.

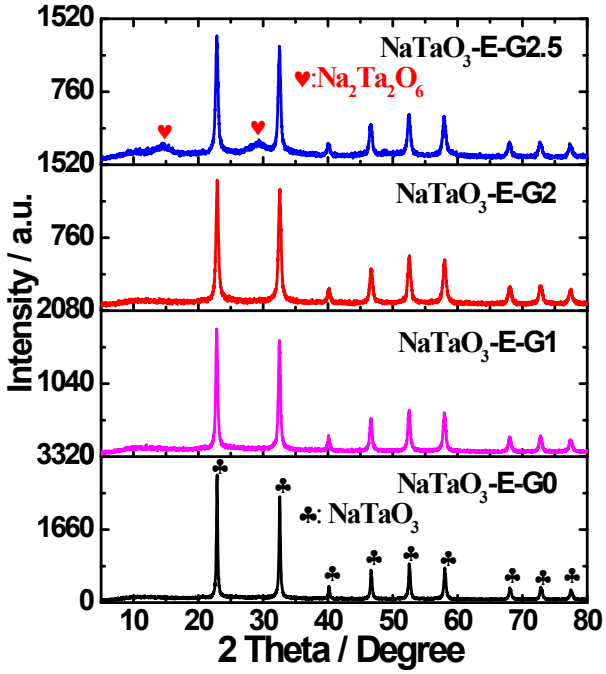
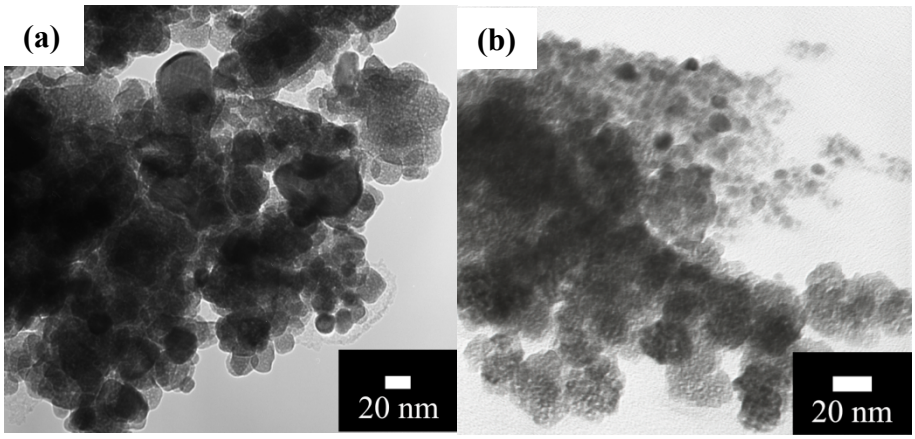



**Figure S2.** XRD patterns of carbon modified $NaTaO_3$ samples as a function of glucose content.



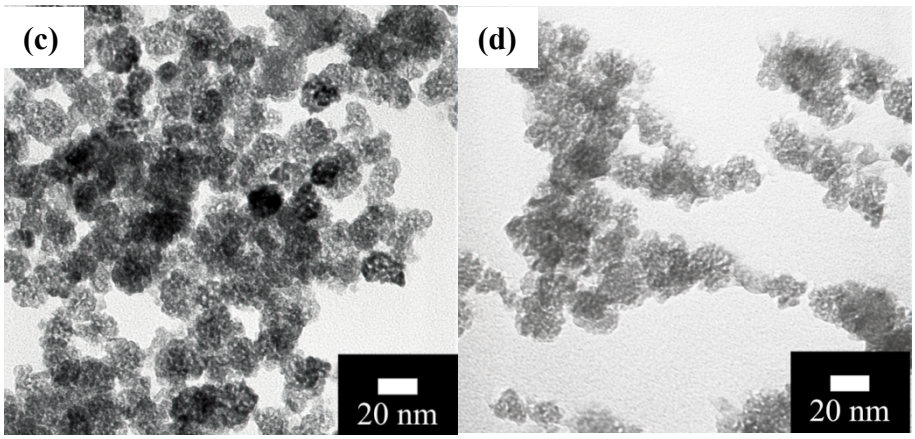



**Figure S3.** TEM images of $NaTaO_3$-E-G0 (a), $NaTaO_3$-E-G1 (b), $NaTaO_3$-E-G2 (c) and $NaTaO_3$-E-G2.5 (d).

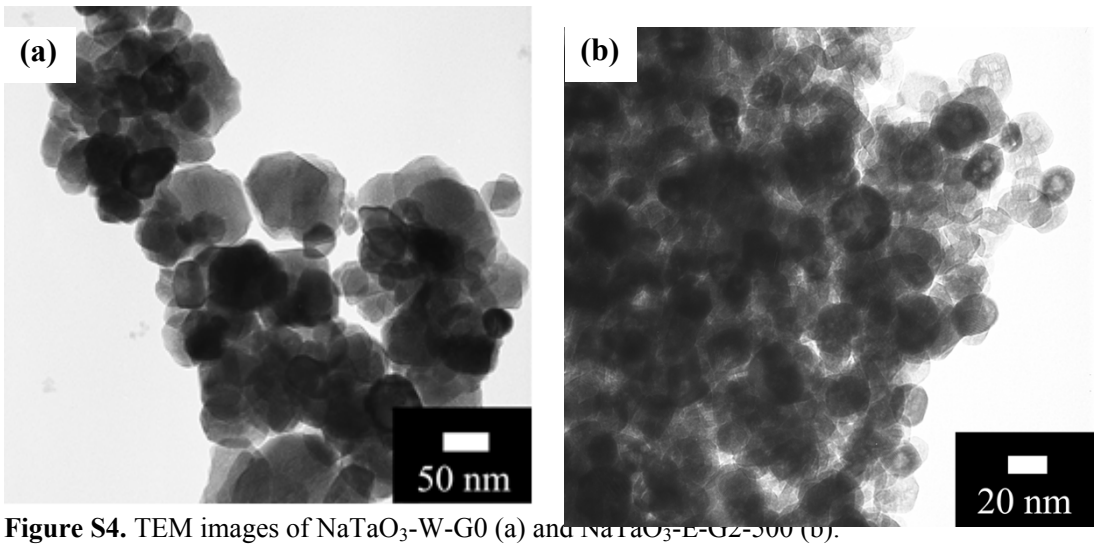



**Figure S4.** TEM images of $NaTaO_3$-W-G0 (a) and $NaTaO_3$-E-G2-500 (b).

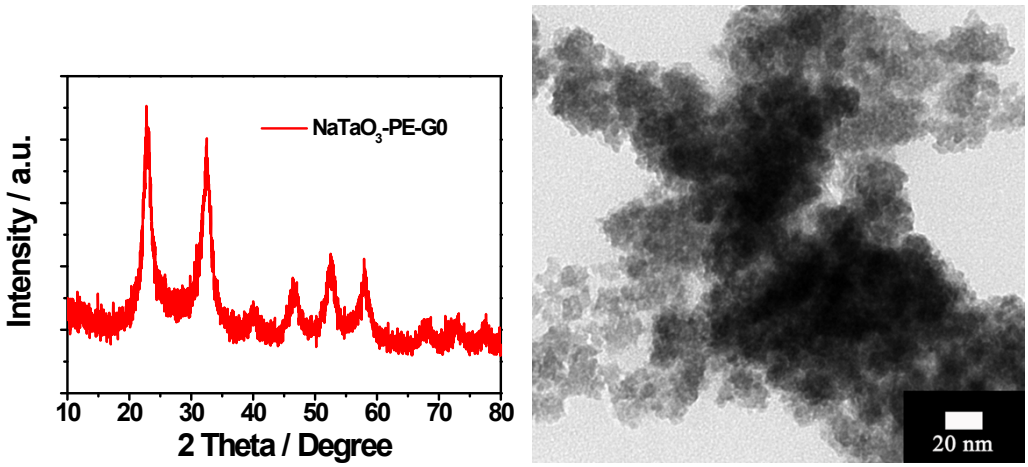



**Figure S5.** XRD pattern and TEM image of $NaTaO_3$-PE-G0.

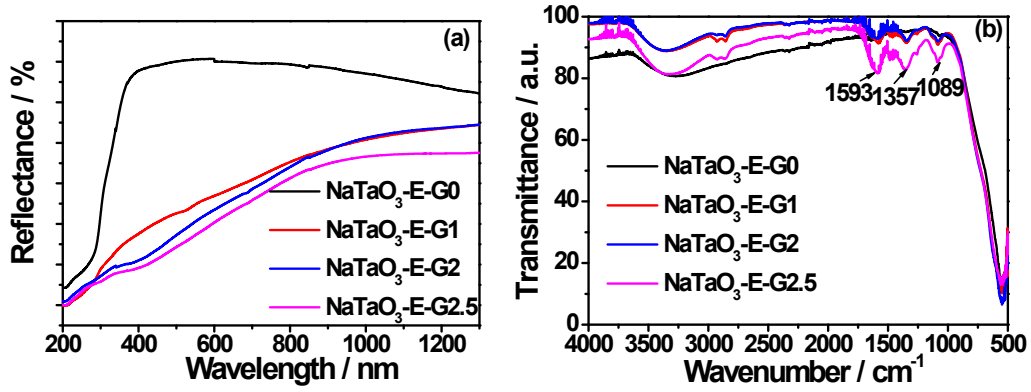



**Figure S6.** DRS (a) and FTIR spectra (b) of samples as a function of glucose content in the reaction solution.

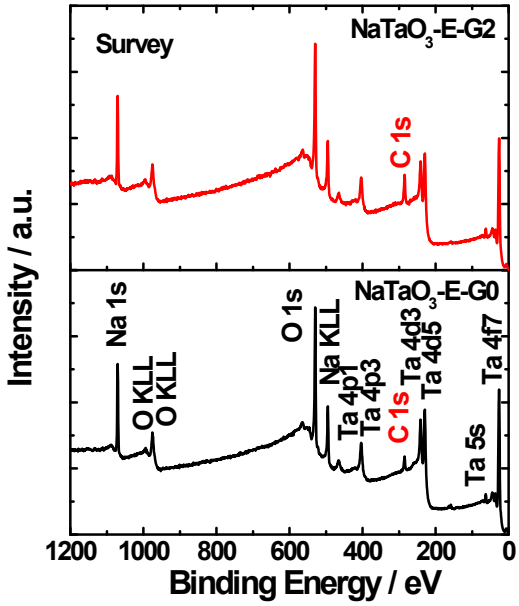



**Figure S7.** XPS survey spectra of samples $NaTaO_3$-E-G0 and $NaTaO_3$-E-G2.

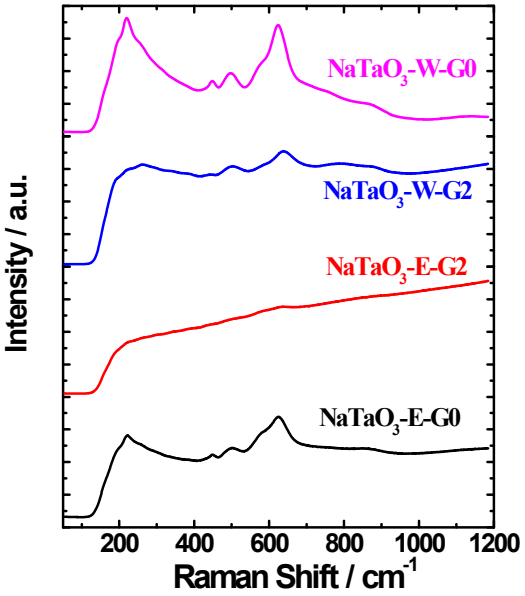



**Figure S8.** Raman spectra of samples.

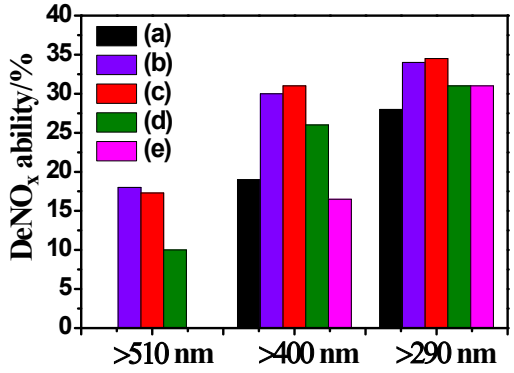



**Figure S9.** $DeNO_x$ ability of samples $NaTaO_3$-E-G0, $NaTaO_3$-E-G1, $NaTaO_3$-E-G2 and $NaTaO_3$-E-G2.5 varied with the addition of glucose contents as well as commercial P25.

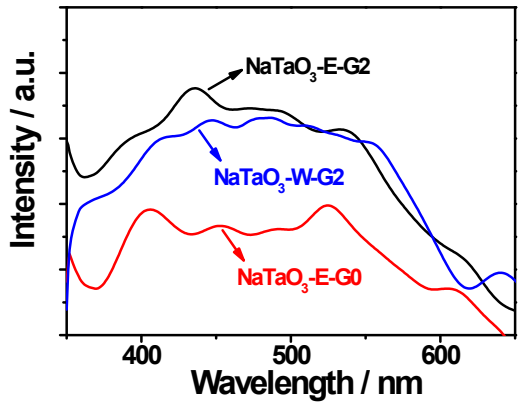



**Figure S10.** Photoluminescence spectra of samples $NaTaO_3$-E-G0, $NaTaO_3$-E-G2 and $NaTaO_3$-W-G2 with the excitation of 304 nm.