Electronic Supplementary Material (ESI) for CrystEngComm


Supporting Information

# $Bi_2O_3$ quantum dots decorated nitrogen doped $Bi_3NbO_7$ nanosheets: In-situ synthesis and enhanced visible-light photocatalytic activity

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**1. Results**

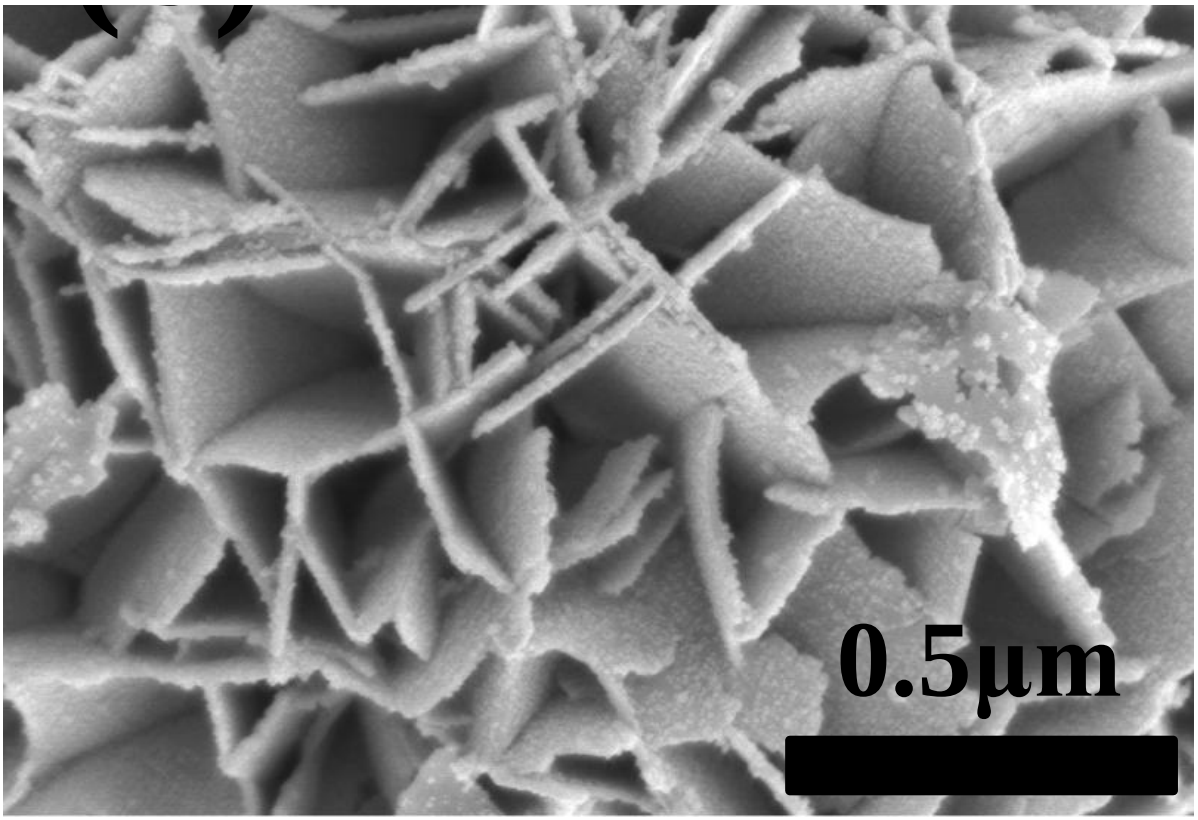


**Fig. S1.** The enlarged image of nitrogen doped $Bi_3NbO_7$ nanosheets homogeneously decorated with 3 mol% $Bi_2O_3$ quantum dots.

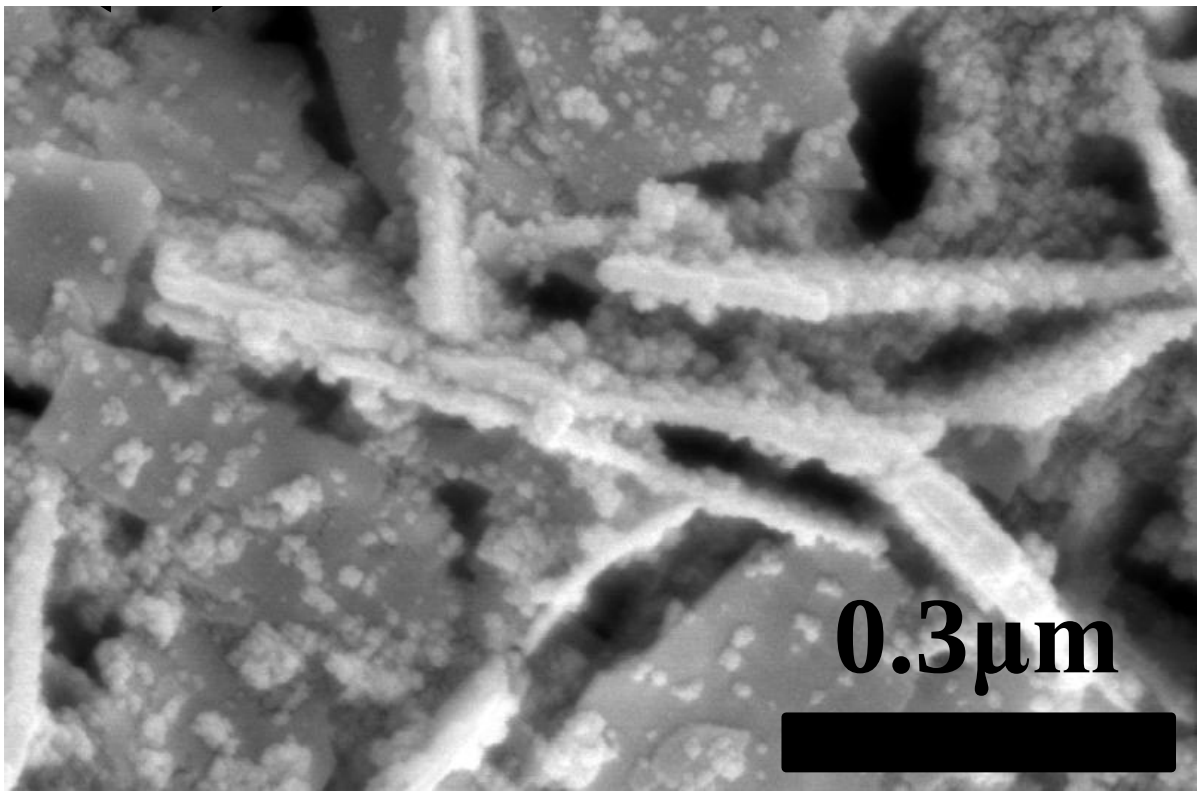


**Fig. S2.** The enlarged image of nitrogen doped $Bi_3NbO_7$ nanosheets decorated with 5 mol% $Bi_2O_3$ nanoparticles with the significant aggregation.

**Table S1. Energy-Dispersive Spectra (EDS) Analysis Data**

| 3mol% $Bi_2O_3$ decorated $N\text{-}Bi_3NbO_7$ | Molar ratio of each element | | | |
|---|---|---|---|---|
| | bismuth | niobium | oxygen | nitrogen |
| $Bi_2O_3$ nanoparticle | 2.0 | 0 | 3.0 | --- |
| $N\text{-}Bi_3NbO_7$ nanosheet | 3.0 | 1.0 | 6.8 | --- |

Note: the average weight percentage of each element were measured by an energy dispersive spectrum using several nanoparticles and nanosheets. Besides, it is hard to check the presence of the nitrogen using EDS analysis.

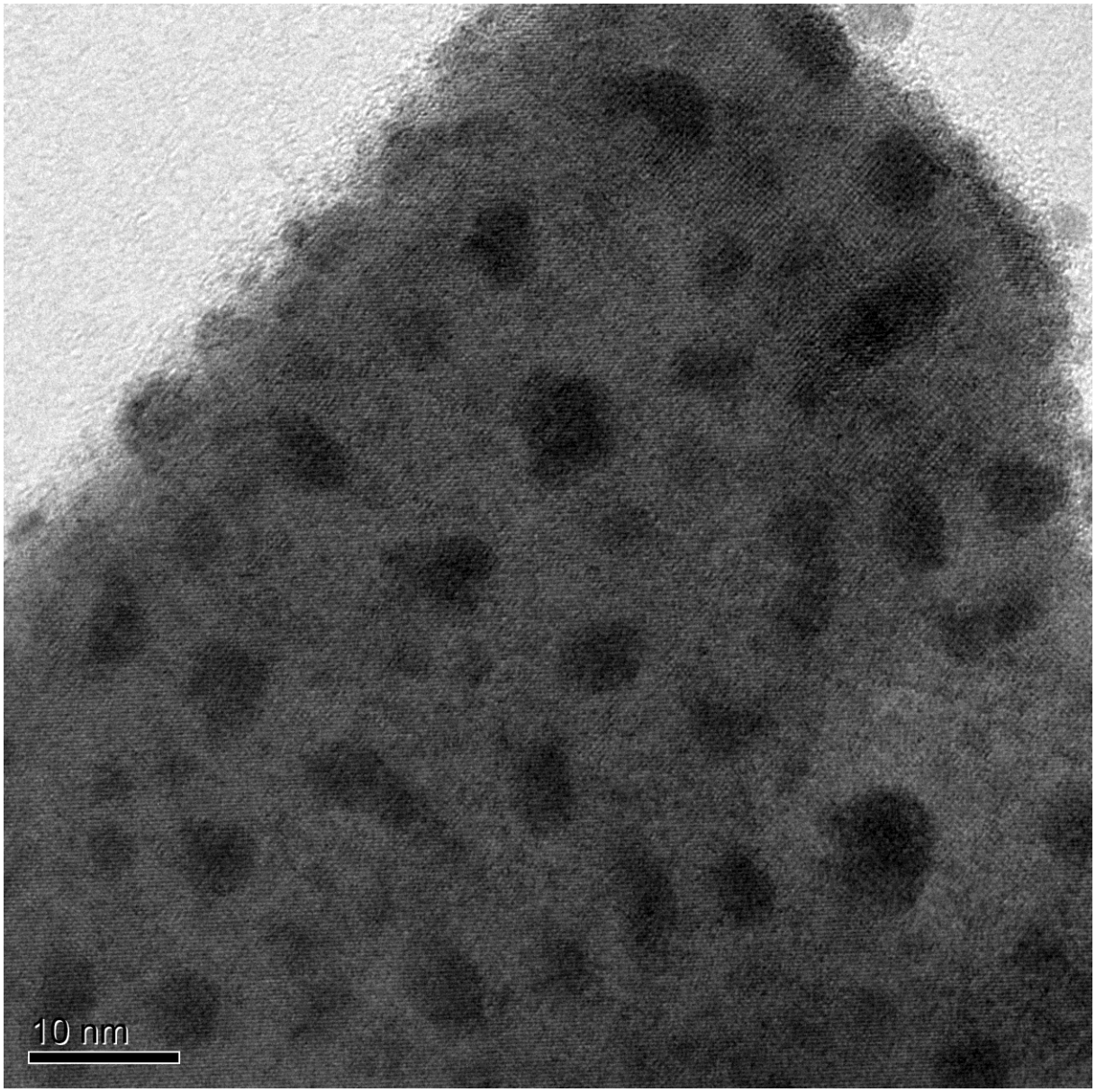


**Fig. S3.** The enlarged HRTEM image of nitrogen doped $Bi_3NbO_7$ nanosheets decorated with 3 mol% $Bi_2O_3$ $Bi_2O_3$ quantum dots.

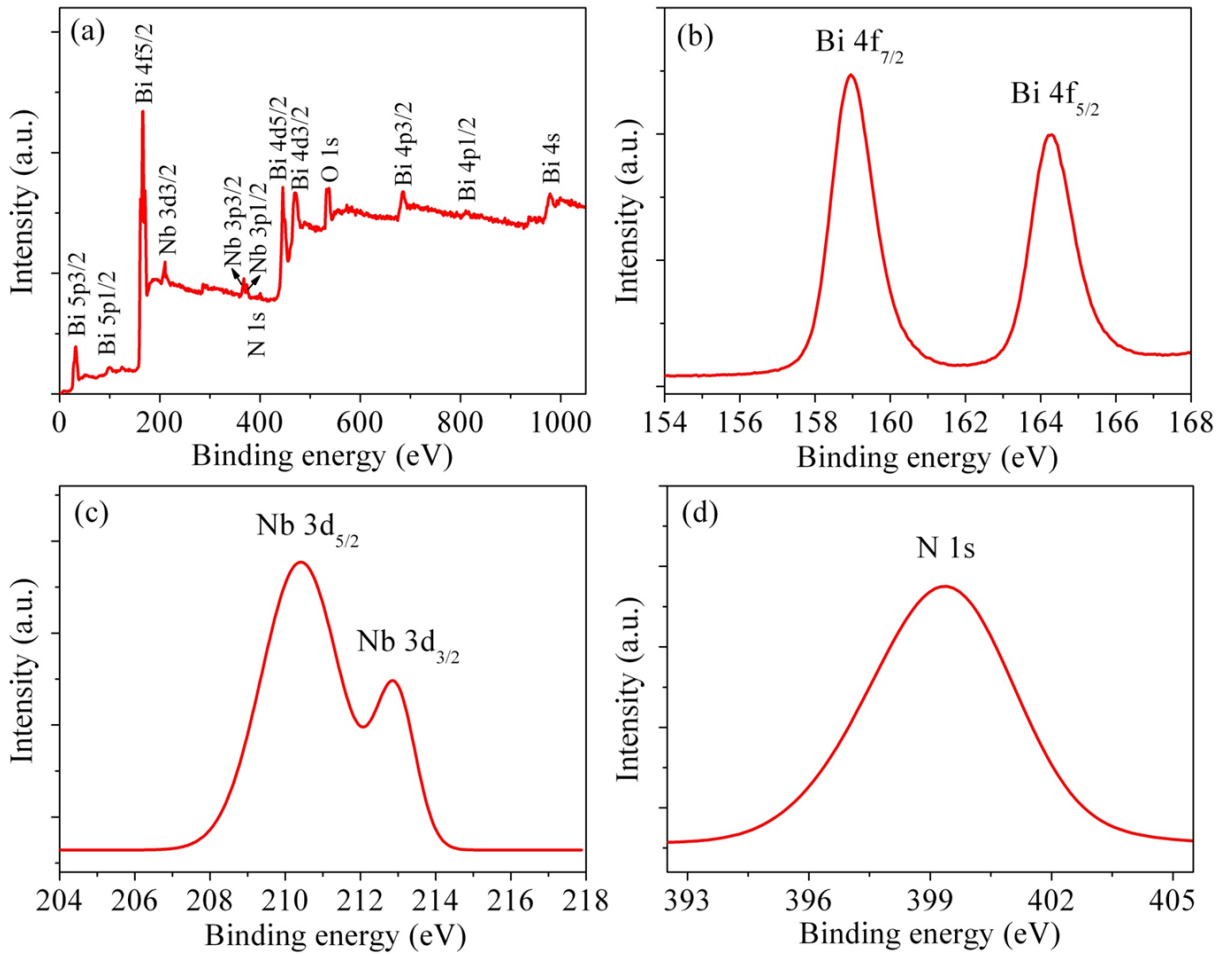


**Fig. S4.** XPS spectra of a) survey spectrum, b) Bi 4f, c) Nb 3d and (d) N 1s for as-prepared 3mol% $Bi_2O_3$/N-$Bi_3NbO_7$ samples.

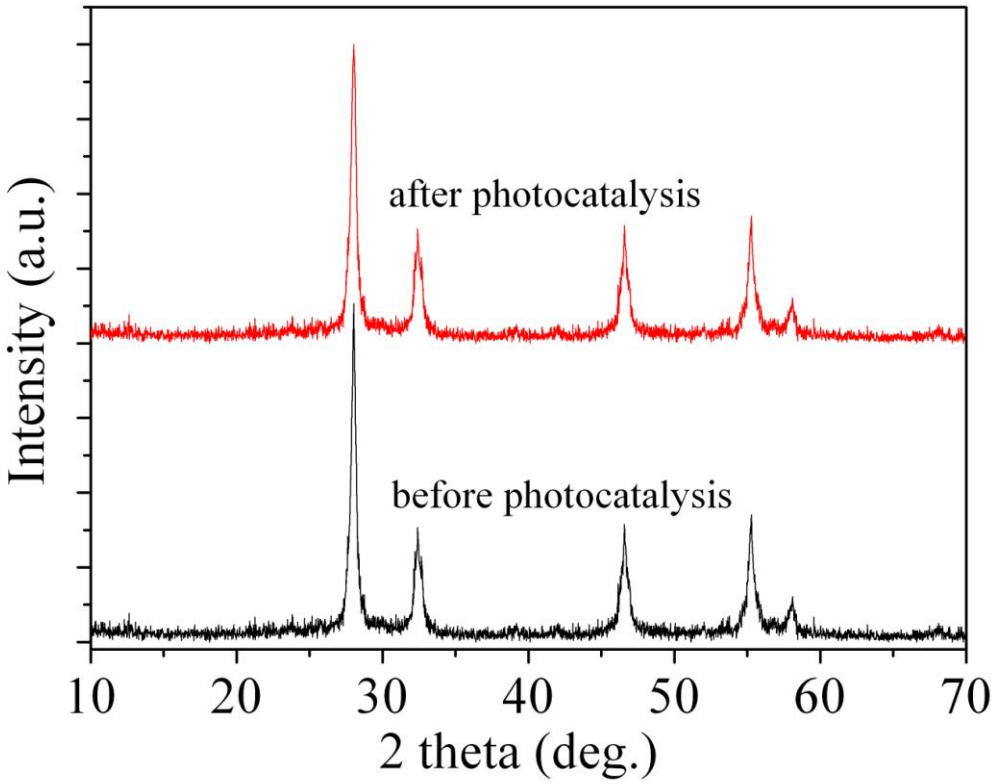


**Fig. S5.** The XRD patterns of 3 mol% $Bi_2O_3$ quantum dots decorated nitrogen doped $Bi_3NbO_7$ nanosheets as photocatalysts before photocatalysis and after photocatalysis for five cycling runs.