

Efficient Photocatalytic Reduction of Dinitrogen to Ammonia on Bismuth Monoxide Quantum Dots

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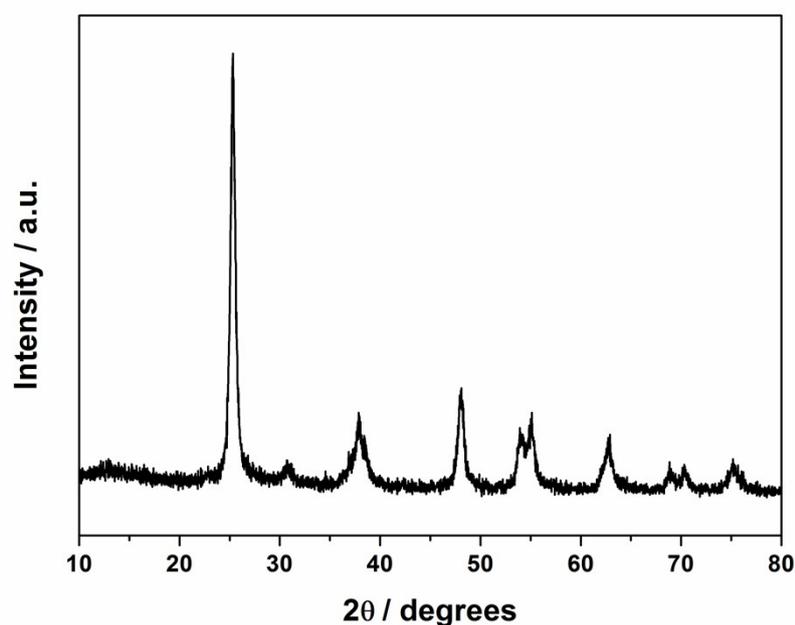


Figure S1 XRD pattern of the as-prepared 0.2%wt Fe-TiO₂ sample.

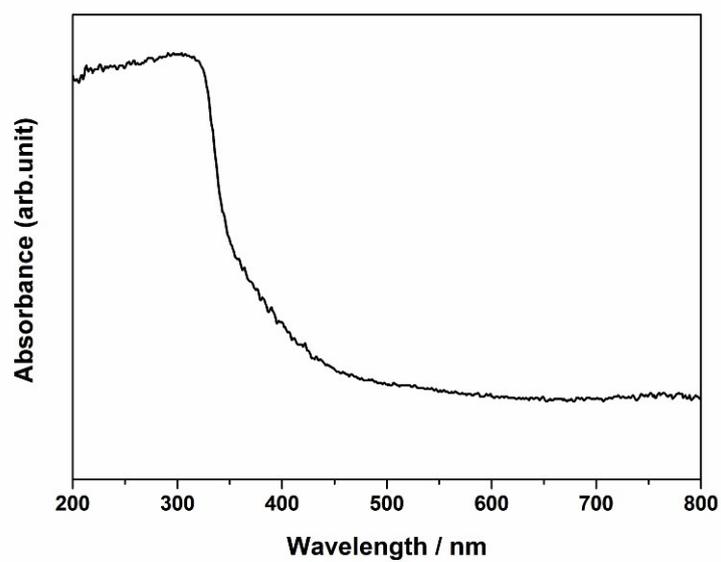


Figure S2. UV-vis diffuse reflection spectrum of the BiO particles.

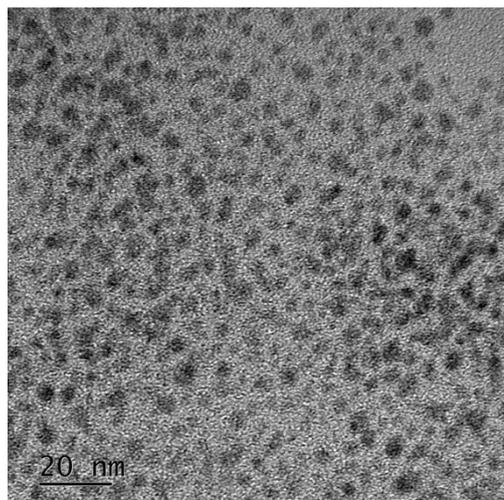


Figure S3 TEM image of the BiO quantum dots after cycles of photocatalytic reaction

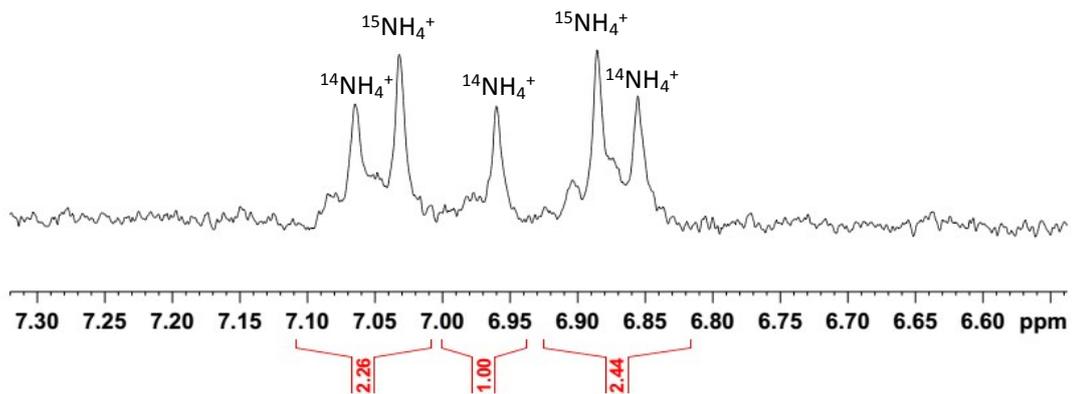


Figure S4 ^1H NMR spectrum of the obtained ammonia from photocatalytic N_2 reduction using 50% $^{15}\text{N}_2$ and 50% $^{14}\text{N}_2$ as the purge gas.

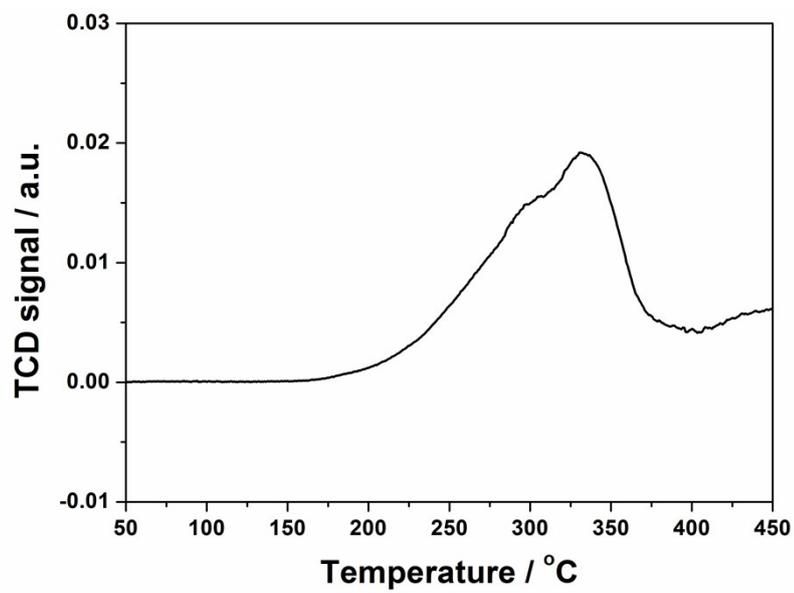


Figure S5 N₂-TPD profiles of the as-prepared BiO catalyst.

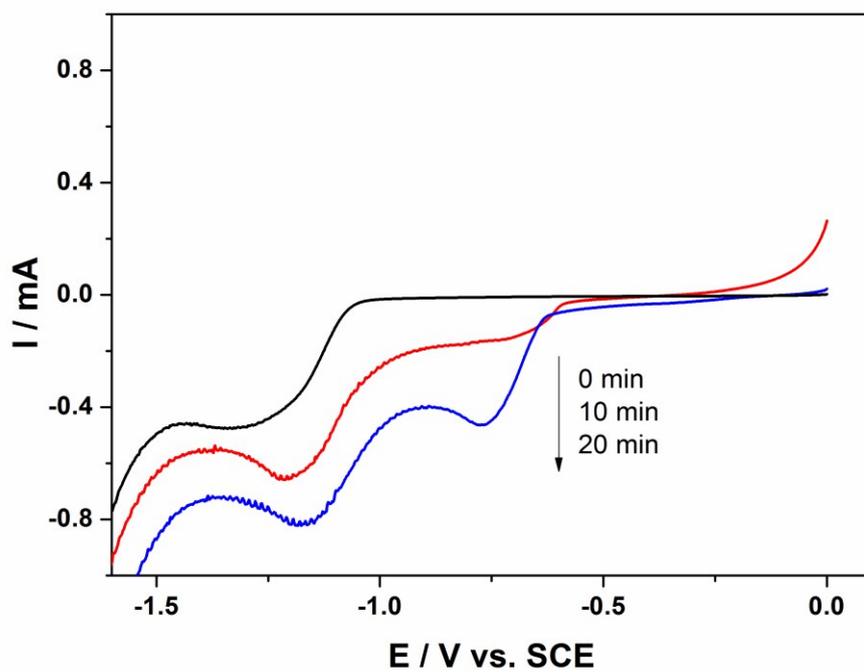


Figure S2

Figure S6 Changes of cathodic peaks for N₂ reduction on BiO electrode along with the scan time in N₂ saturated 0.5 M Na₂SO₄ at pH 3.8. Scan rate: 100 mV/s.

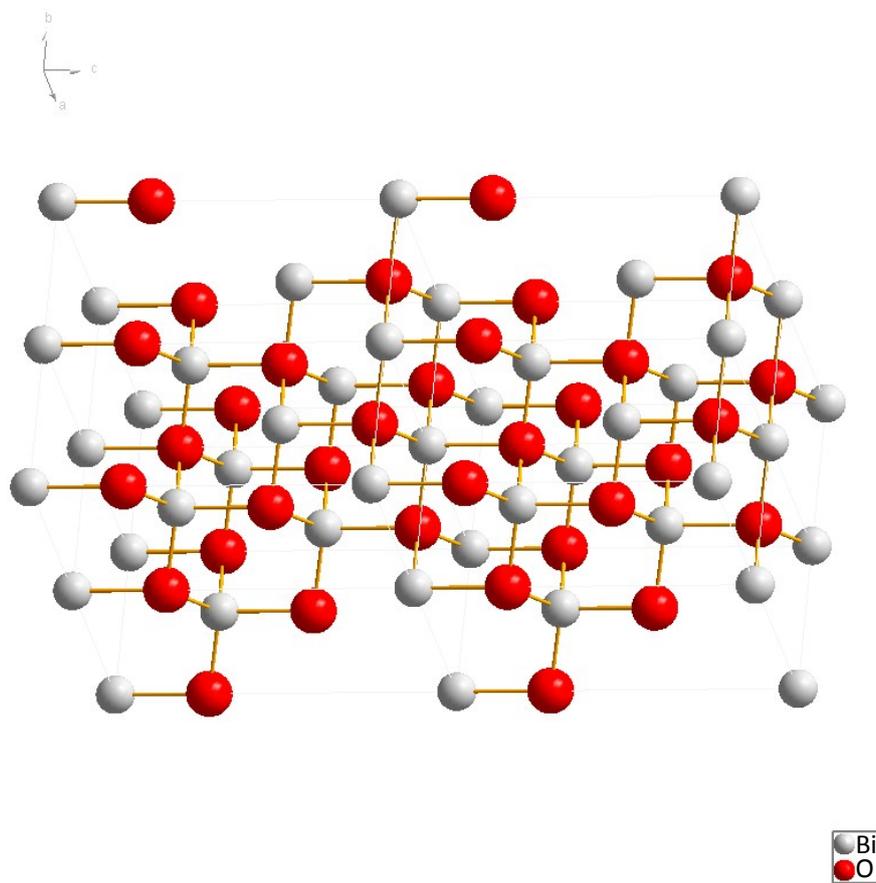


Figure S7 Schematic crystal structure of BiO which clearly shows the coordination environment of Bi and O atoms.

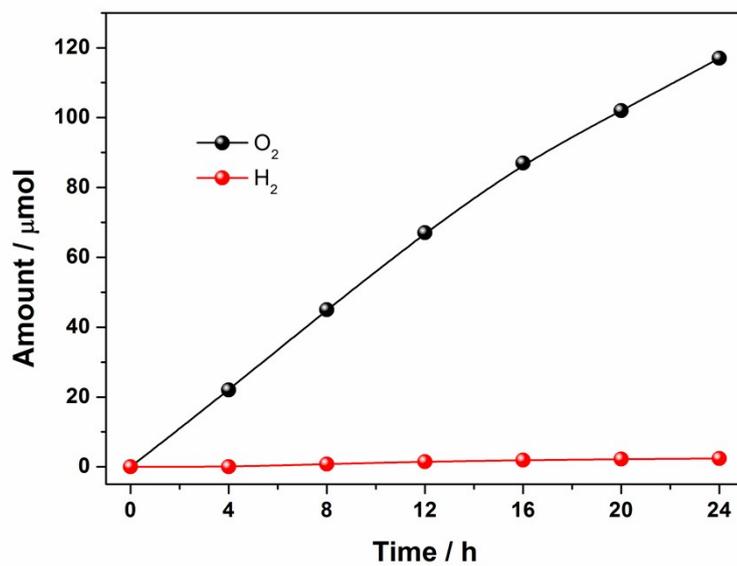


Figure S8 Hydrogen and oxygen evolution during the photocatalytic ammonia synthesis process in a closed reaction system.