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

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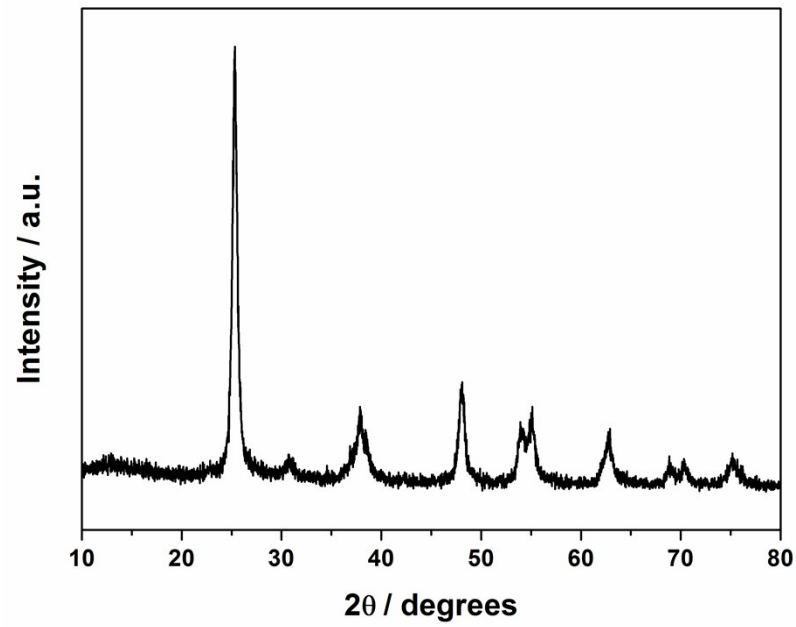

Figure S1 XRD pattern of the as-prepared 0.2%wt Fe-TiO_2 sample.

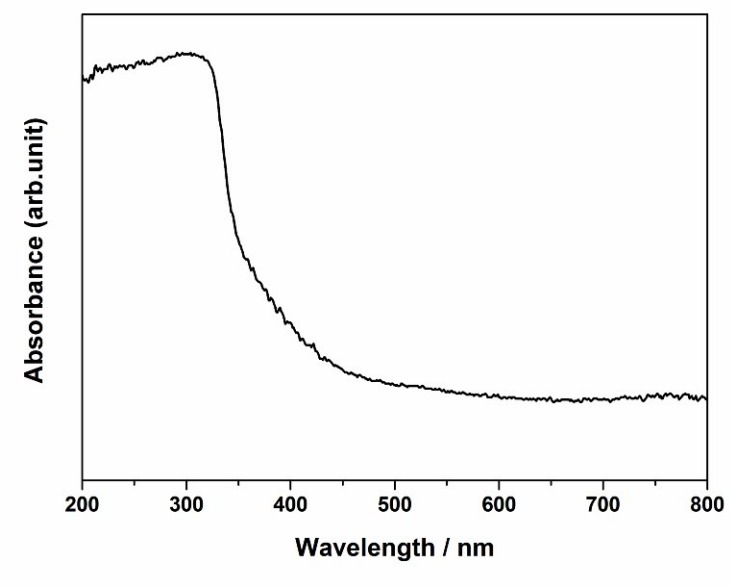

Figure S2. UV−vis diffuse reflection spectrum of the BiO particles.

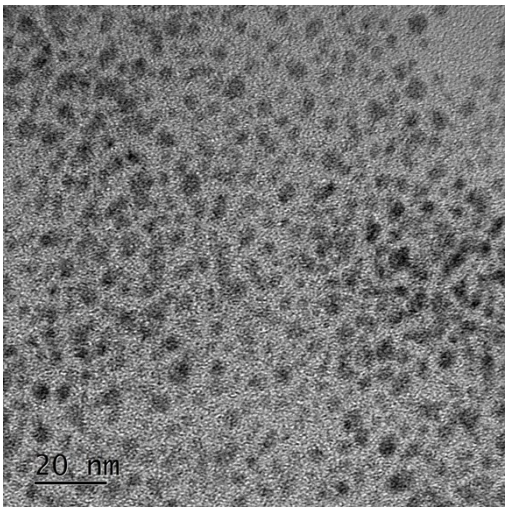

Figure S3 TEM image of the BiO quantum dots after cycles of photocatalytic reaction

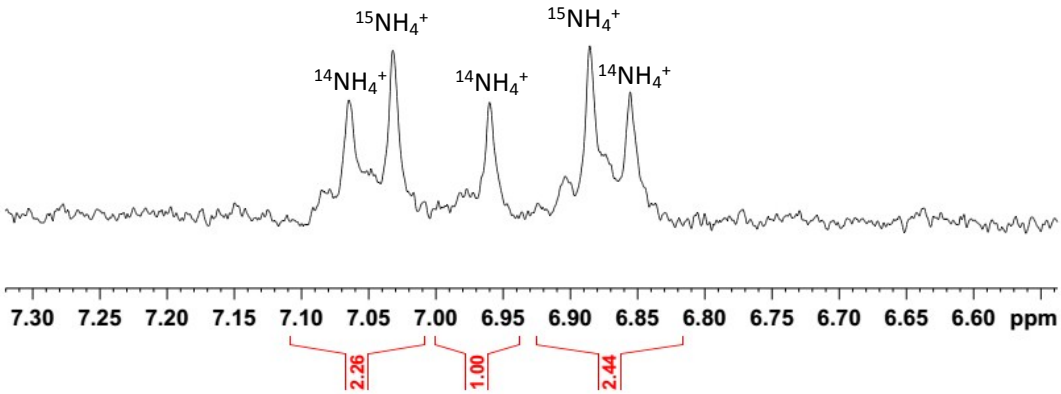

Figure S4 ^{1}H NMR spectrum of the obtained ammonia from photocatalytic N_2 reduction using 50% $^{15}N_2$ and 50% $^{14}N_2$ as the purge gas.

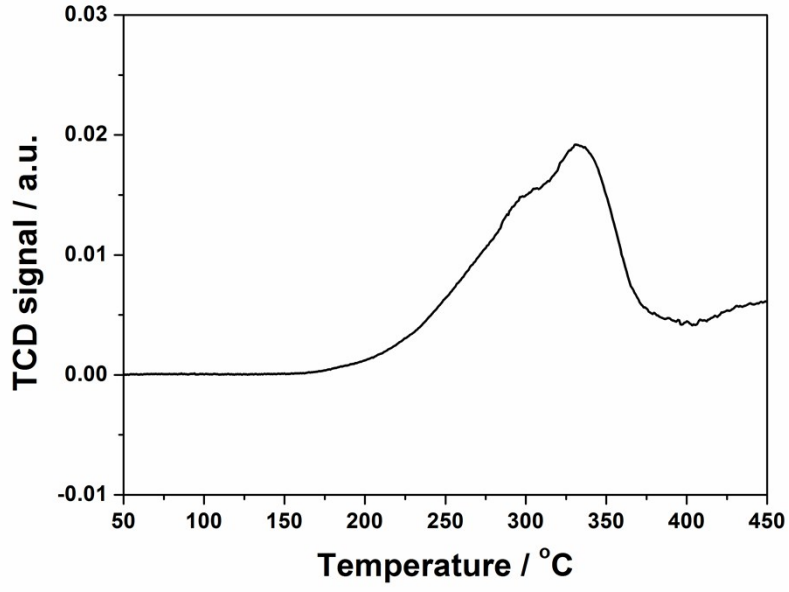

Figure S5 N_2-TPD profiles of the as-prepared BiO catalyst.

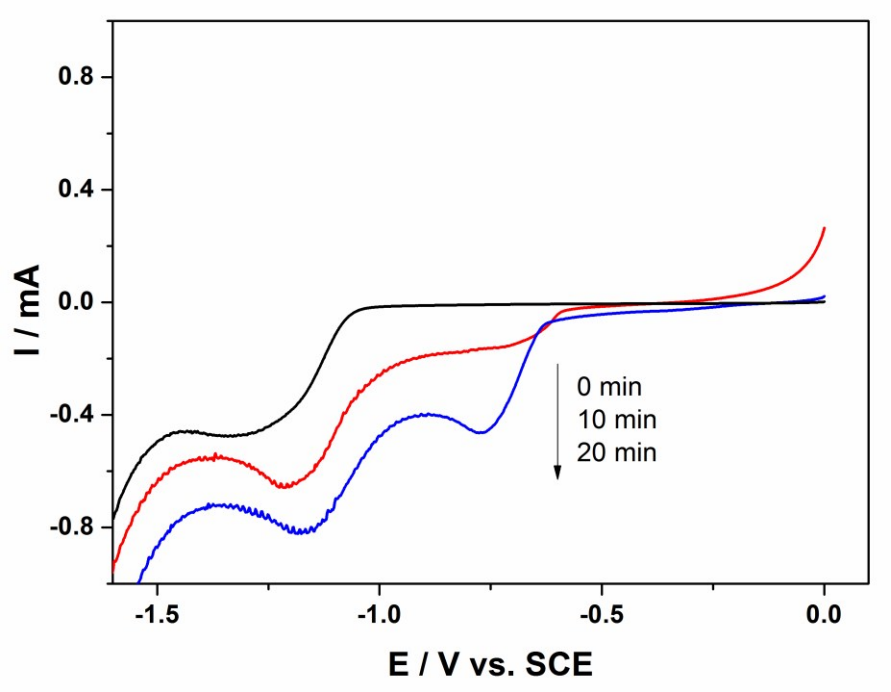

Figure S2

Figure S6 Changes of cathodic peaks for N_2 reduction on BiO electrode along with the scan time in N_2 saturated 0.5 M Na_2SO_4 at pH 3.8. Scan rate: 100 mV/s.

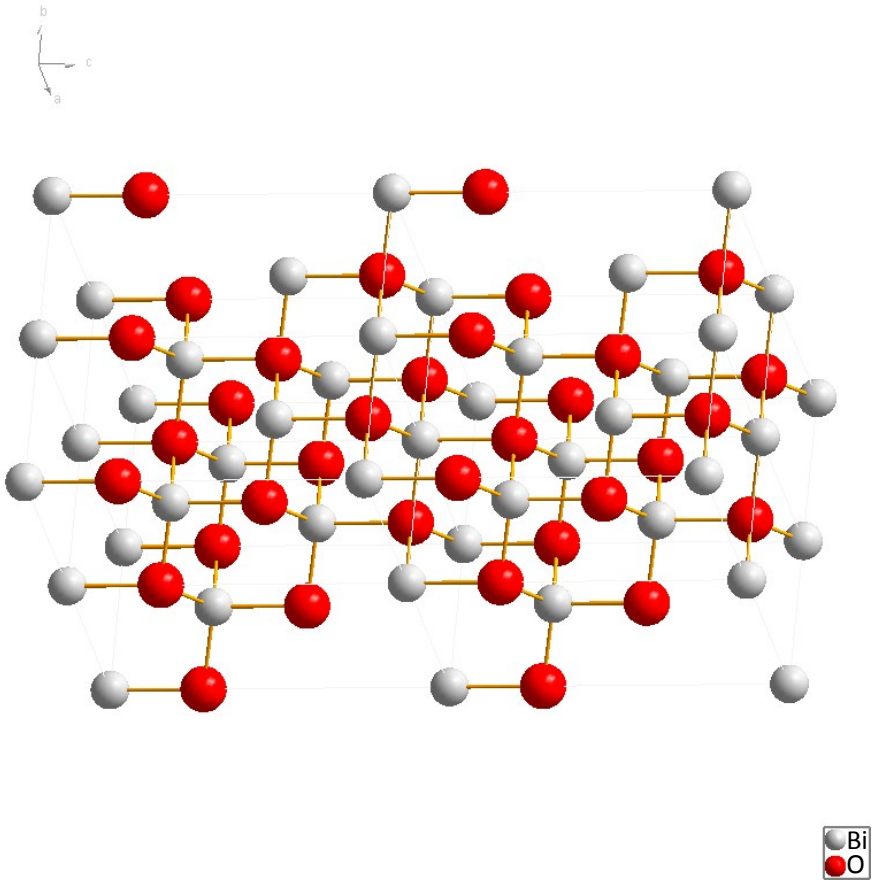

Figure S7 Schematic crystal structure of BiO which clearly shows the coordination environment of Bi and O atoms.

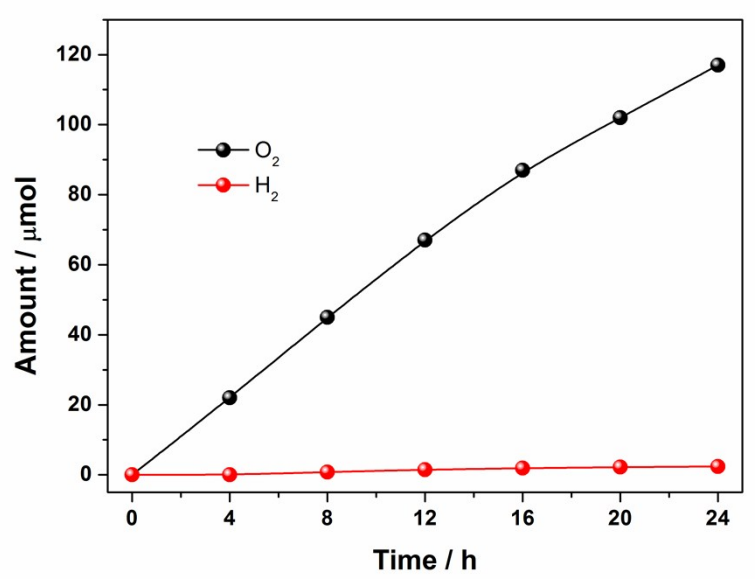

Figure S8 Hydrogen and oxygen evolution during the photocatalytic ammonia synthesis process in a closed reaction system.