Supplementary Information (SI) for Sustainable Energy & Fuels.

Supporting Information

Electrosynthesis of NH_3 from N_2 using nanostructured $Bi_4Ti_3O_{12}$ catalyst

Meera Sebastian[a,c], Subrata Das[b,c], Nishanth Karimbintherikkal Gopalan[a,c,*]

[a]Centre for Sustainable Energy Technologies(C-SET), CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram 695019, India.

[b]Material Sciences and Technologies Division, CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram 695019, India.

[c]Academy of Scientific and Innovative Research (AcSIR), Ghaziabad 201002, India.

*Corresponding author. Tel.: +91471 2515508; Fax: +91471 2491712

E-mail address: nishanthkg@niist.res.in

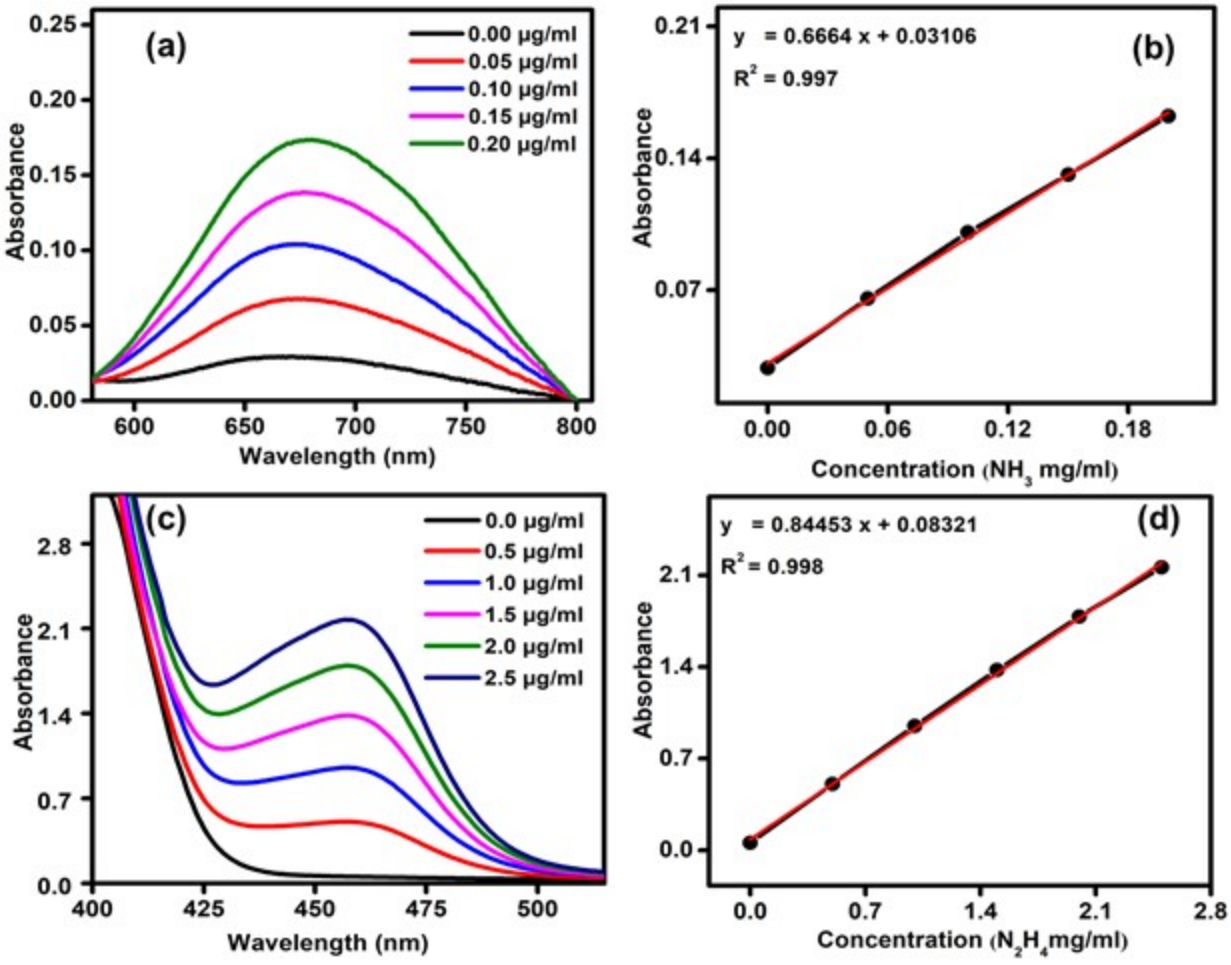

Fig. S1 (a) UV-Vis absorption spectra of various known concentrations of NH_3 and(b) calibration curve to find out the NH_3 concentrations. (c) UV-Vis absorption spectra of different known concentrations of N_2H_4 and (d) associated calibration curve to analyze the N_2H_4 concentrations

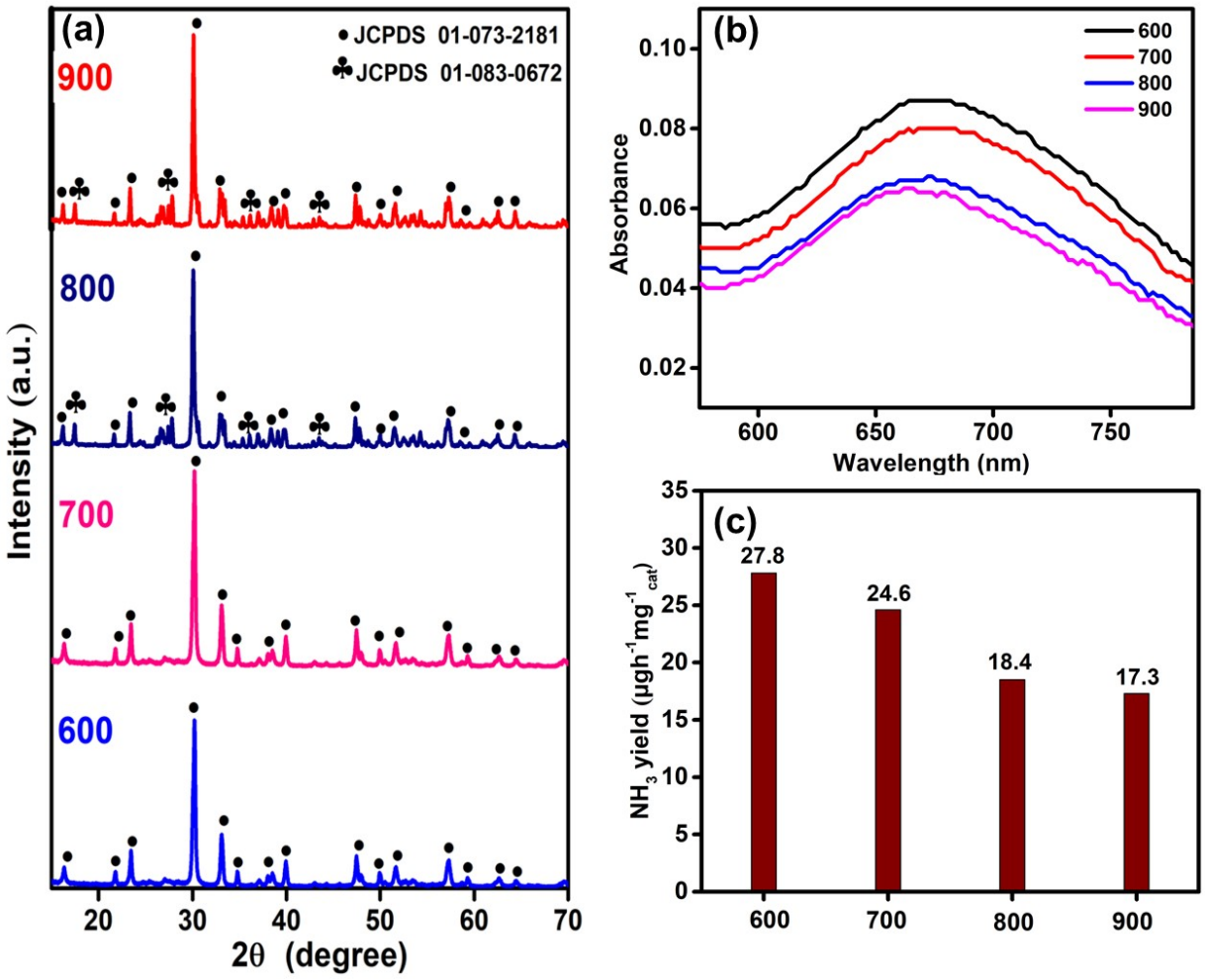

Fig. S2 (a)XRD analysis, (b) UV-Vis absorption spectra and (c) corresponding NRR yield obtained for the catalyst calcined at different temperatures

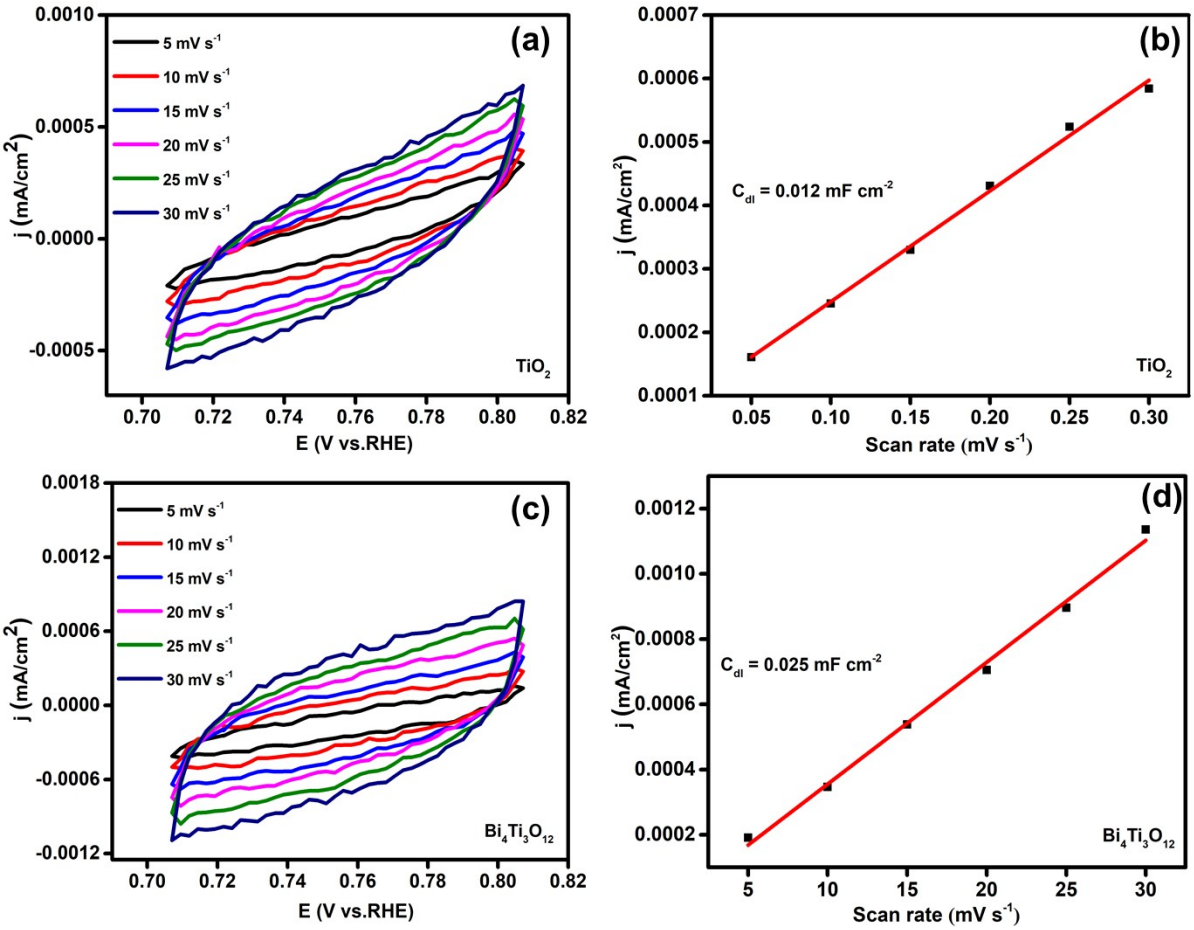

Fig. S3 Electrochemical double-layer capacitance (C_{dl}) measurements with different scanning rates of 5~30 mV s^{-1} for TiO_2 (a,b) and $Bi_4Ti_3O_{12}$ (c,d).