Highly selective aerobic oxidation of cyclohexane to cyclohexanone and cyclohexanol over V_2O_5@TiO_2 under simulated solar light irradiation

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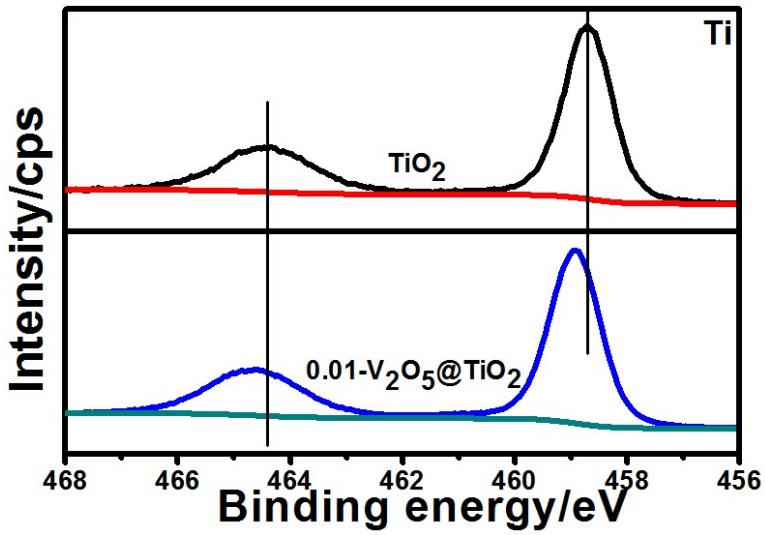

Figure S1. XPS spectra of Ti2p in the TiO_2 and 0.01-V_2O_5@TiO_2.

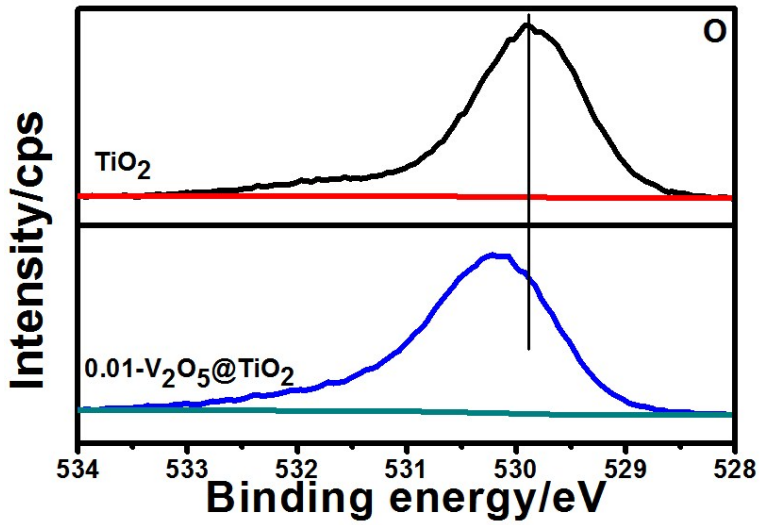

Figure S2. XPS spectra of O1s in the TiO_2 and 0.01-V_2O_5@TiO_2.

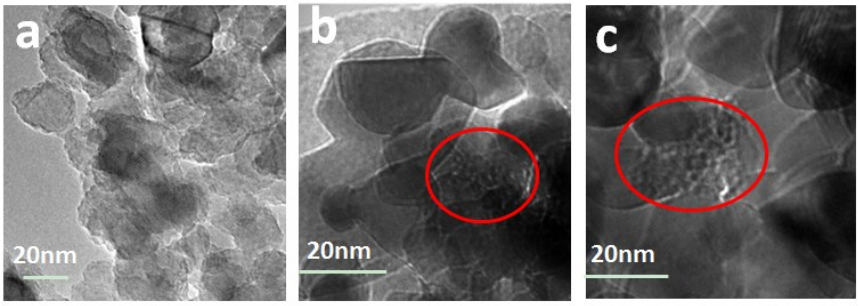

Figure S3. HRTEM images of 0.03-V_2O_5@TiO_2 (a), 0.05-V_2O_5@TiO_2 (b), 0.07-V_2O_5@TiO_2 (c).

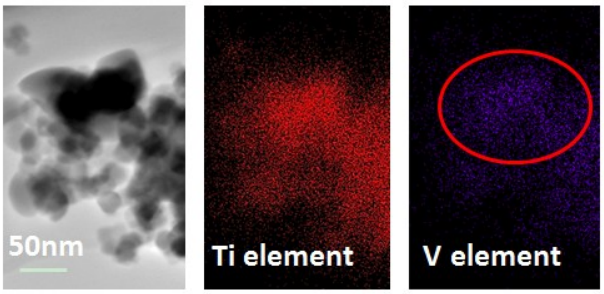

Figure S4. EDX images of 0.03-V_2O_5@TiO_2.

No obvious aggregation of V species in the catalysts of 0.03-V_2O_5@TiO_2 is observed in Figure S3a. However, with the increasing of V content, it is found from Figure S 3b and Figure S 3c that aggregation of V species exists in catalyst, which would be detrimental to photocatalytic oxidation of cyclohexane. Meanwhile, to further understand the catalysts of 0.03-V_2O_5@TiO_2, the element mapping was performed in Figure S4, from which we could see there are slightly aggregation in the catalysts.