

Supplementary Materials

Enhanced Photocatalytic activity of Nanocrystalline N - doped ZnSb_2O_6 : role of N doping, cation ordering, particle size and crystallinity

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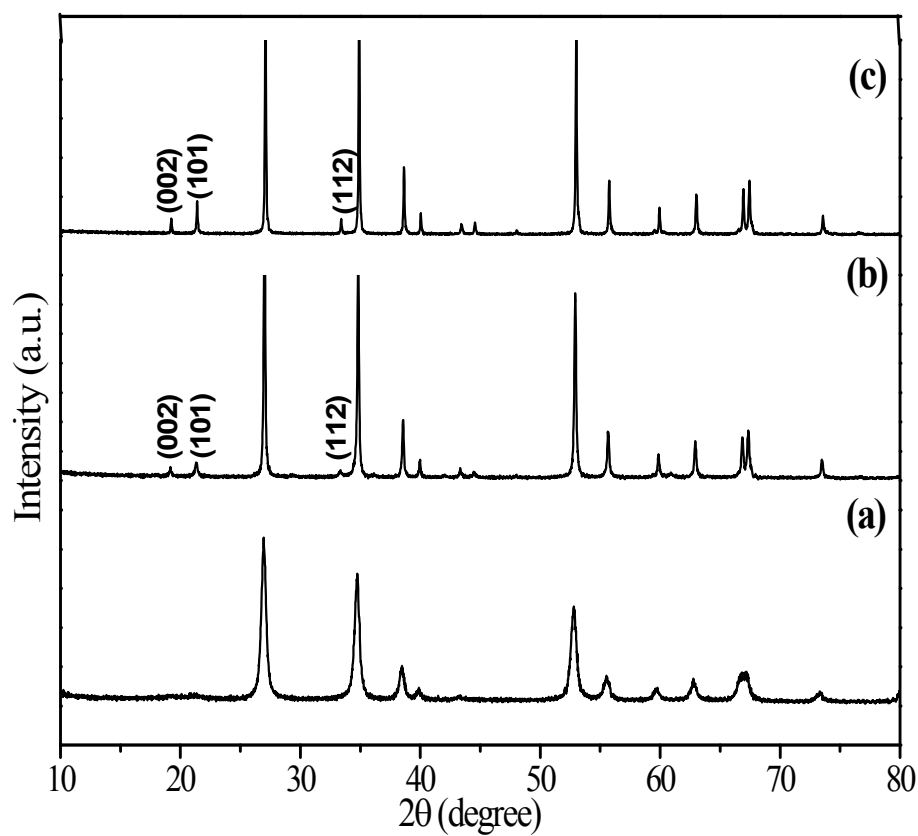


Figure S1. Nanocrystalline N – doped ZnSb_2O_6 O/F = 1 (a) 600°C (b) 700°C and (c) 900°C/12h.

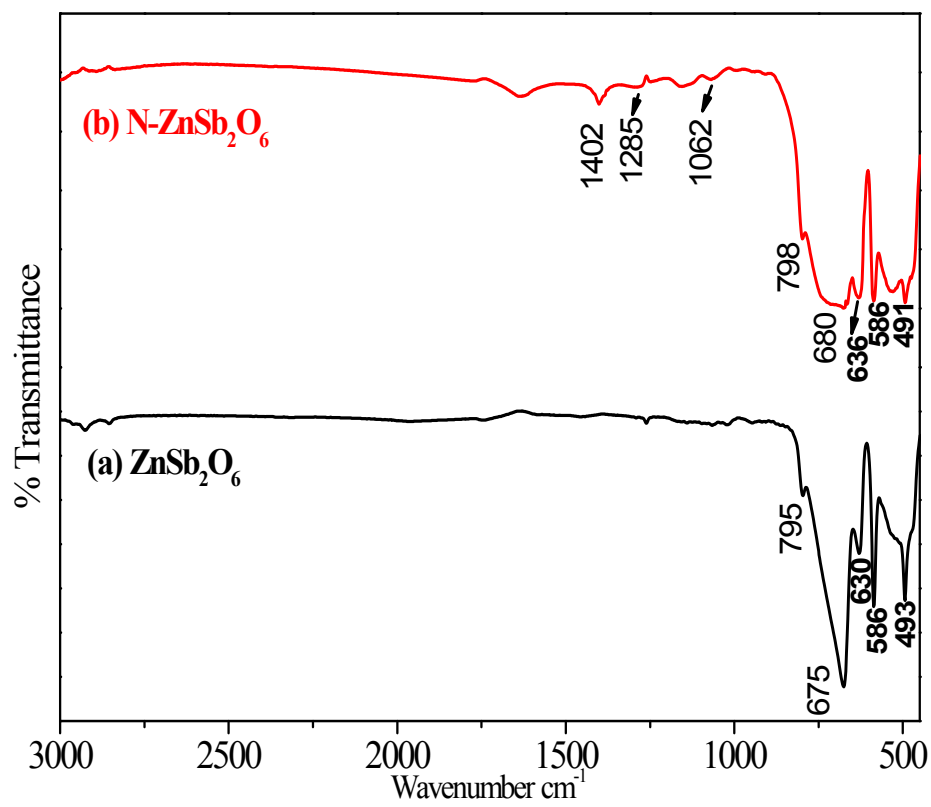


Figure S2. FTIR spectra of (a) ZnSb_2O_6 (b) N - doped ZnSb_2O_6

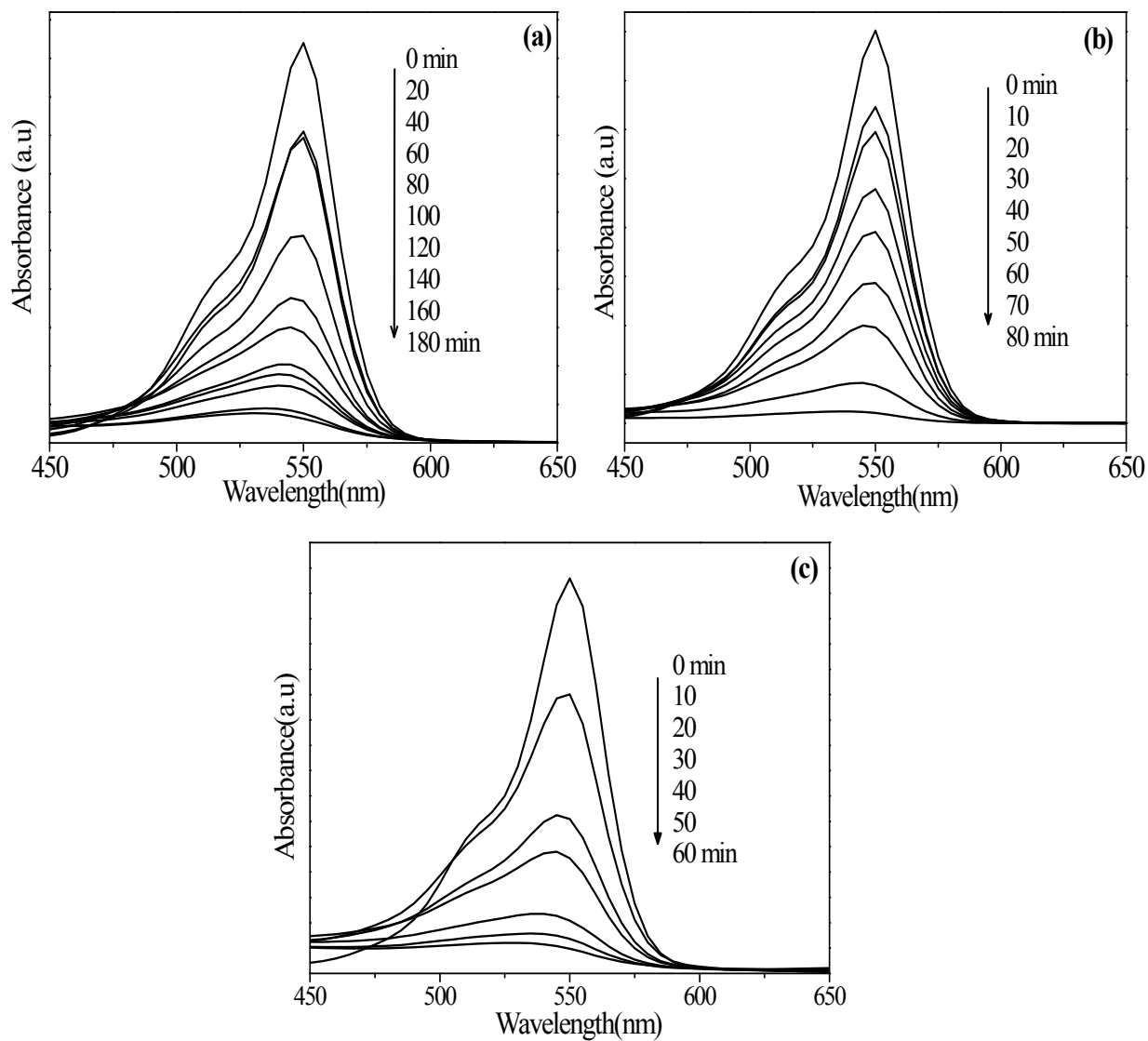


Figure S3. RhB photodegradation monitored by UV absorption spectra (a) ZnSb₂O₆ (b) nanocrystalline disordered N -doped ZnSb₂O₆ (c) ordered N - doped ZnSb₂O₆

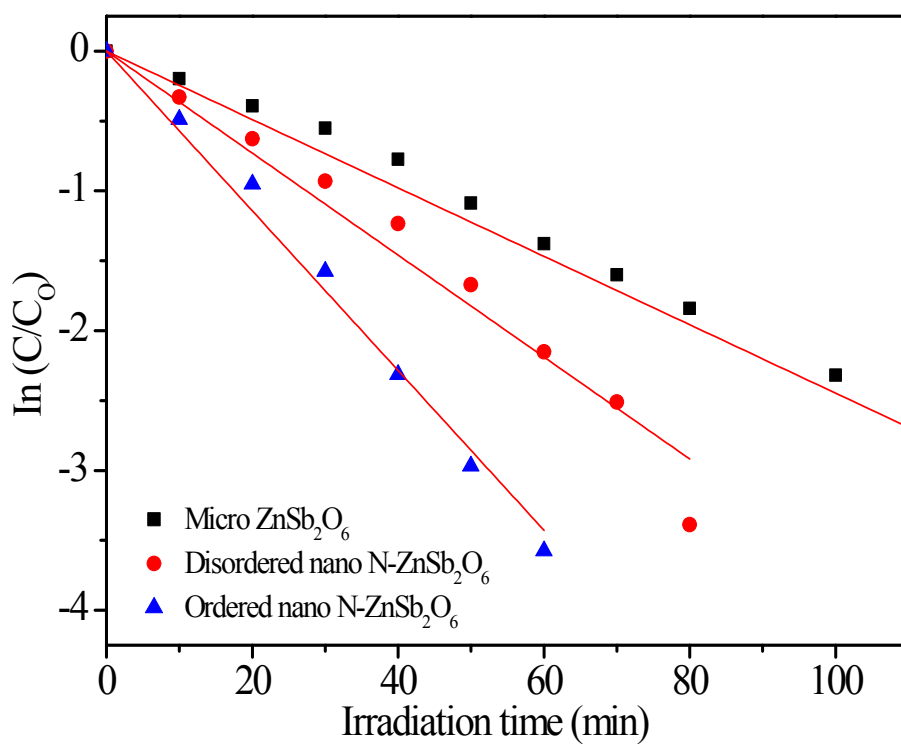


Figure S4. Plot of $\ln C / C_0$ with time indicating first order kinetics

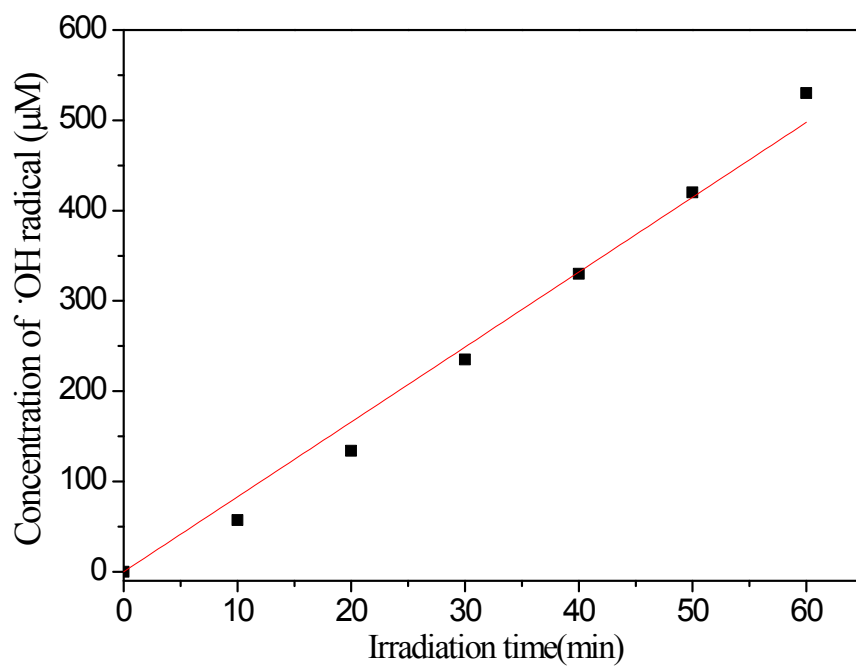


Figure S5. Concentration of ·OH radicals from ordered N-doped ZnSb_2O_6 with irradiation time

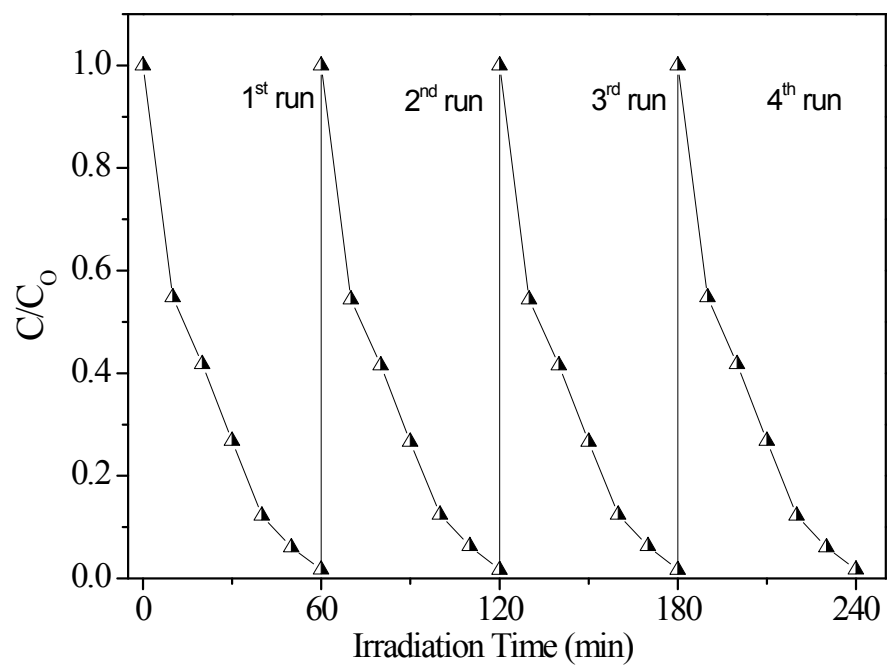


Figure S6. Recyclability of N – doped ZnSb₂O₆ photocatalyst

Table S1. Crystallite size of nanocrystalline N - doped ZnSb₂O₆

O/F ratio	Crystallite size (nm)
#2	14
#1	15
#0.5	17
*600° C	26
*700° C	38
*900° C	72

As prepared, * O/F = 1

Table S2. BET surface area of microcrystalline ZnSb₂O₆ and nanocrystalline N- doped ZnSb₂O₆

O/F ratio	BET Surface area m ² /g
#2	34.6
#1	35.2
#0.5	31.9
*600° C	27.8
*700° C	24.7
Solid state	2.3

As prepared, * O/F=1

Table S5. Photocatalytic activity of microcrystalline ZnSb₂O₆ and nanocrystalline N- doped ZnSb₂O₆

Compound	Degradation %	Complete degradation time (min)	k x10 ⁻² min ⁻¹	•OH radical concentration (μM)
Ordered N-ZnSb ₂ O ₆	99	60	6.34	8.5
Disordered N-ZnSb ₂ O ₆	99	80	4.93	6.8
ZnSb ₂ O ₆	96	180	1.72	2.9