



Optical Properties, Electronic Structures, and Photocatalytic Performances of Bandgap-Tailored SrBi₂Nb_{2-x}V_xO₉ Compounds

Sung Won Hwang ^{1,2,†}, Tae Hoon Noh^{3,†} and In Sun Cho^{1,2,*}

- ^{1.} Departments of Materials Science and Engineering, Ajou University, Suwon 16509, South Korea
- ^{2.} Department of Energy Systems Research, Ajou University, Suwon 16509, South Korea.
- ^{3.} Department of Materials Science and Engineering, Seoul National University, Seoul 08826, South Korea
- * Correspondence: insuncho@ajou.ac.kr; Tel: +82-31-219-2468; Fax: +82-31-219-1613
- * These authors contributed equally to this work

Table 1. The BET surface area of samples.

	SBNV0	SBNV2	SBNV4	SBNV6	SBNV8
BET surface area (m²/g)	0.9	1.1	1.8	2.9	1.4

Table S2. Experimental and calculated bandgap values of samples.

	SBNV0	SBNV2	SBNV4	SBNV6	SBNV8
Experimental E _g (eV)	3.21	3.13	2.95	2.75	2.71
Calculated E _g (eV)	2.40	2.32	2.22	2.10	2.06





Figure S1. XRD patterns of SBNV06 powders calcined at 800, 850 and 900 °C for 6 h.



Figure S2. SEM images of (a) SNBV02, (b) SBNV04 and (c) SBNV08 samples.



Figure S3. Variation of the absorbance of the RhB dye solution with time for (a) SBNV0, (b) SBNV02, (c) SBNV04, (d) SBNV06, (e) SBNV08, and (f) SBNV10 samples.



Figure S4. (a) Pseudo first order reaction kinetics and (b) band-gap values, specific surface areas and reaction rate constants of the SBNV06 and WO3 samples. For the SBNV06, linear curve fittings were done at two different region, i.e., time of 0-150 and 200-300 minutes for comparison.