

Supplementary Data

Effect of Electrolytes on the BiOI/SnO₂ Heterostructure to Achieve Stable Photo-Induced Carrier Generation

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Keywords: kinetics; heterostructure; electrolyte; spectroscopy analysis; nyquist plot

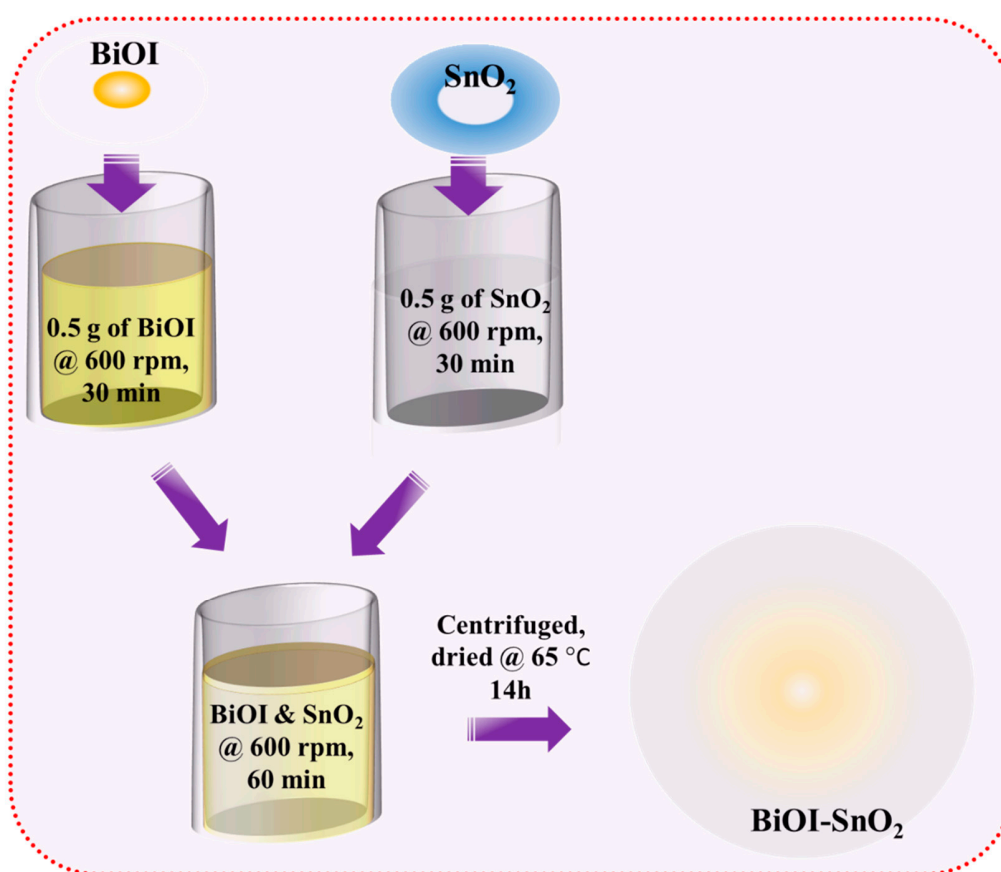


Figure S1. Schematic diagram of composite synthesis.

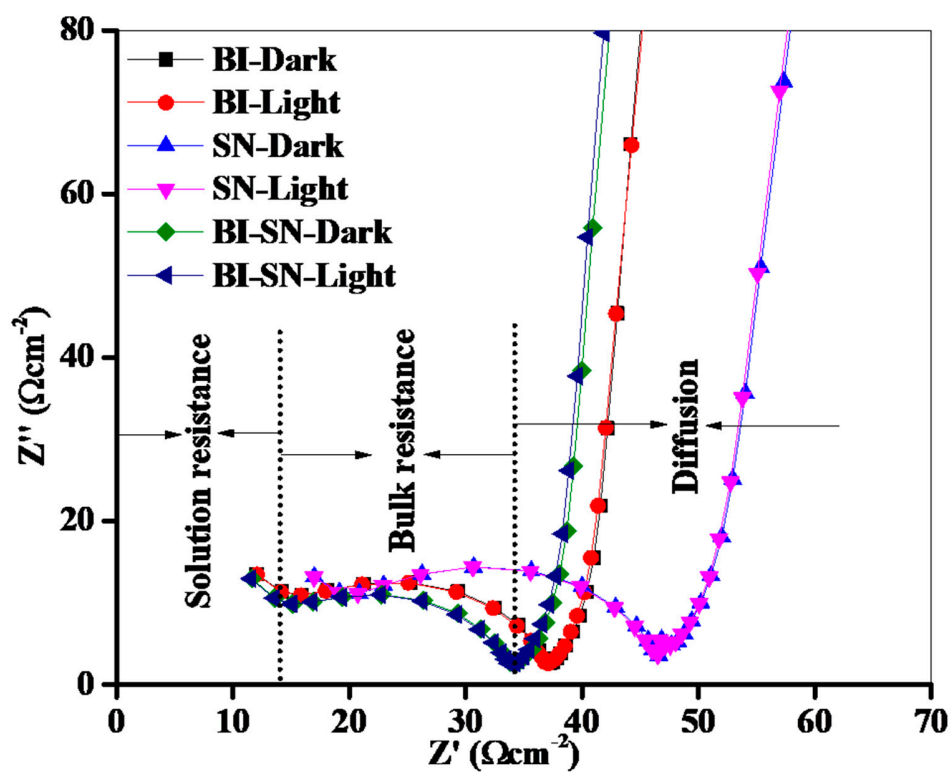


Figure S2. Identified regions in EIS spectra of BiOI (BI), SnO₂ (SN), and BiOI-SnO₂ (BI-SN) nanostructures under dark and light state in 0.1 M KOH and 0.1 M Na₂SO₄ electrolyte.

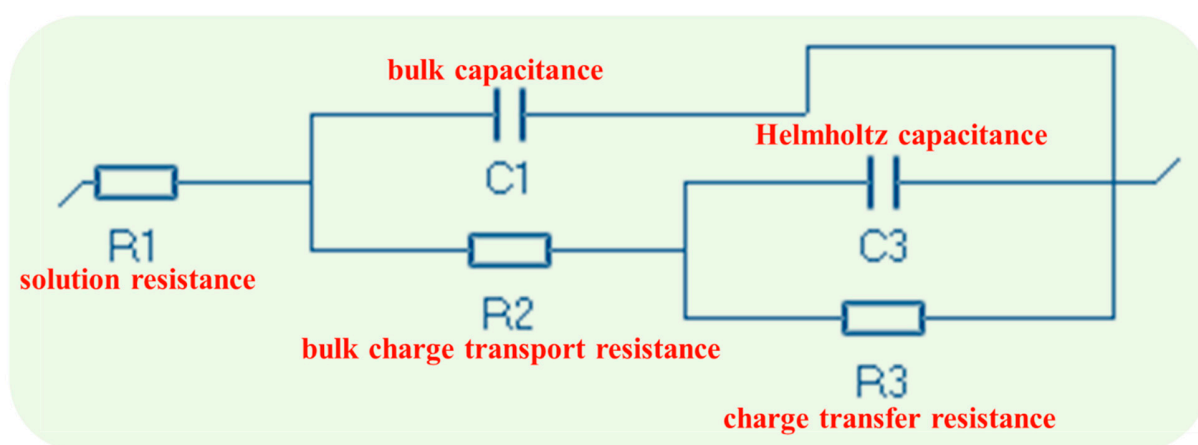


Figure S3. Nyquist plots fitted with a physical model for BiOI (BI), SnO₂ (SN) and BiOI-SnO₂ (BI-SN) nanostructures under dark and light state in 0.1 M KOH and 0.1 M Na₂SO₄ electrolyte.

Table S1. Comparison of Tafel analysis with published literatures.

S.No	Electrolyte	Photoelectrode	Tafel Slope (mV dec ⁻¹)	References
1	1.0 M NaOH	α -Fe ₂ O ₃	71	[1]
2	3.0 M NaCl	Graphene/Glassy Carbon	74	[2]
3	0.1 M NaOH	TiO ₂	270	[3]
4	0.1 M NaOH	FeNi/TiO ₂	190	[3]
5	0.5 M Bu ₄ NBr/0.4 mM trans-Stilbene in acetonitrile	Si Nanowires	240	[4]
6	0.5 M Na ₂ SO ₄	ZIF-67/TiO ₂ nanorods	552	[5]
		BiOI	63.7	
	0.1 M KOH	SnO ₂	63.4	
7		BiOI-SnO ₂	50.6	Present work
	0.1 M Na ₂ SO ₄	BiOI	59.6	
		SnO ₂	57.3	
		BiOI-SnO ₂	48.2	

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