

## Nanostructured Co/BiVO<sub>4</sub> for Efficient and Sustainable Photoelectrochemical Chlorine Evolution from Simulated Sea-Water

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### Electronic Supplementary Information (ESI)

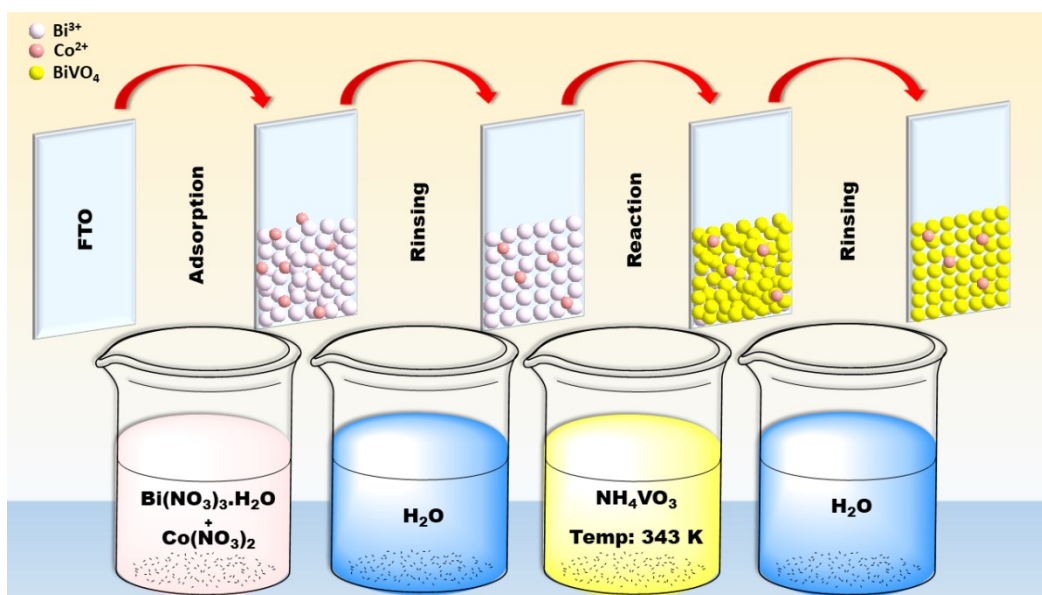


Figure S1: Schematic diagram of fabrication of photoanode by SILAR method.

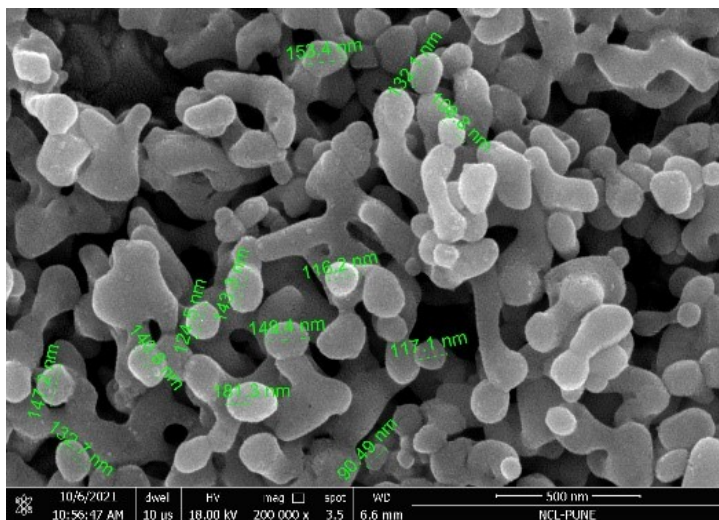


Figure S2: FESEM image of 0.05 Co-BV.

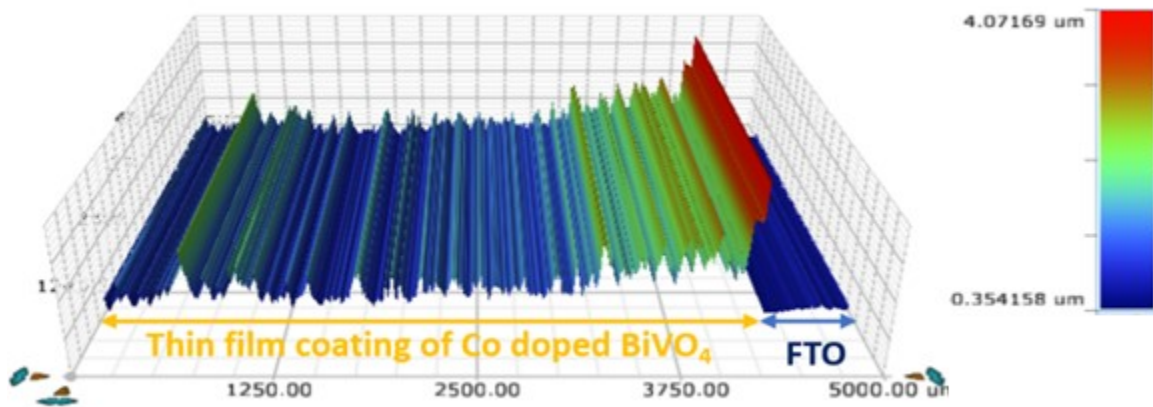


Figure S3: The surface roughness and thickness of 0.05 Co-BV.

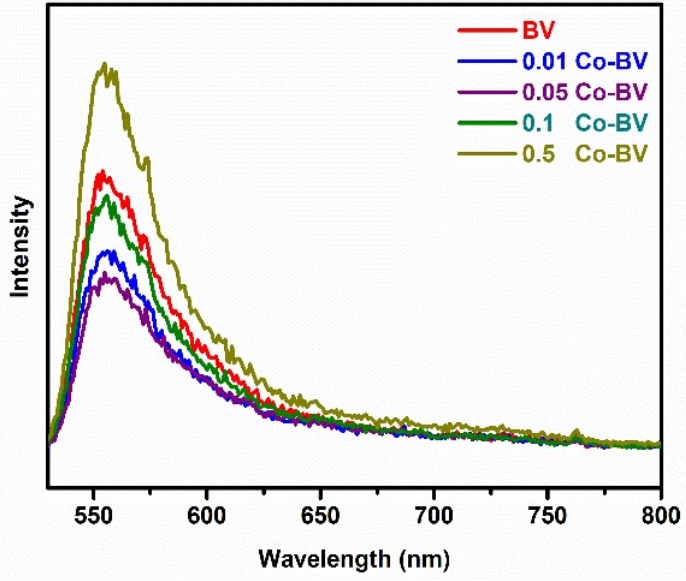


Figure S4: The photoluminescence spectra of the pristine BV and all doped sample.

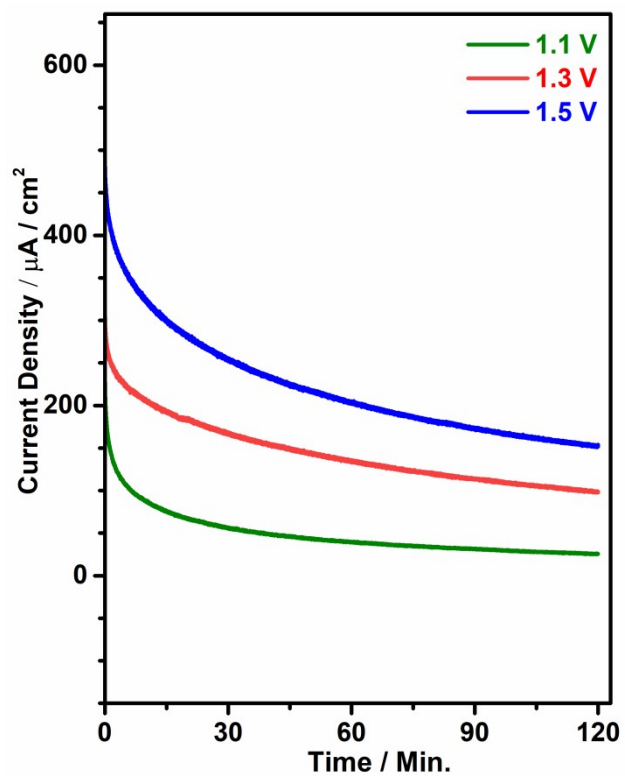


Figure S5: The chronoamperometry data of the 0.05 Co-BV at 1.1, 1.3 and 1.5 V Vs. RHE.

Table S1: Co-content determined from ICP analysis

Photo-electrocatalyst	ICP-(mol %)
0.01 Co-BV	0.011
0.05 Co-BV	0.052
0.1 Co-BV	0.104
0.5 Co-BV	0.486

Table S2: Lifetime decay of BV and 0.05 Co-BV.

Catalyst	Lifetime (ns)	CHISQ ( $\chi^2$ ) values
BV	$\tau_1 = 0.248$	1.12
	$\tau_2 = 3.61$	
0.05 Co-BV	$\tau_1 = 0.59$	1.15
	$\tau_2 = 4.05$	