## **Supplementary support**



Fig. S1 Top and cross-section SEM images of optimized BiVO<sub>4</sub> photoandoe



Figure S2 TEM images of BiVO<sub>4</sub>/TiO<sub>2</sub>(N<sub>2</sub>) NTs

	¢		elements	Weight(%)	Atom (%)
		ОК	26.45	70.60	
		Si K	0.67	1.02	
		Ті К	7.14	6.37	
		νк	10.78	9.04	
		Sn L	11.24	4.05	
		Bi M	43.71	8.93	
(	) 2	4 6	total	100.00	100

Fig. S3 EDX spectrum of BiVO<sub>4</sub>/TiO<sub>2</sub>(N<sub>2</sub>) NTs



Fig. S4 Photoelectrochemical cyclic voltammetry curve of the  $BiVO_4/TiO_2(N_2)$  NTs under illumination of visible irradiation in 0.1 M Na<sub>2</sub>SO<sub>4</sub> solution