Supplementary Material (ESI) for Journal of Materials Chemistry

Photoelectrochemical water splitting using visible-light-responsive $BiVO_4$ fine particles prepared in an aqueous acetic acid solution

Akihide Iwase and Akihiko Kudo*

Department of Applied Chemistry, Faculty of Science, Tokyo University of Science,

1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601 JAPAN

Supporting information

Table S1. Preparation conditions and denotations of $BiVO_4$ samples

Denoted name of sample	Preparation solution	Stirring time	Calcination condition	Crystal system
0.5N-$BiVO_4$(s-m)	HNO_3 (0.5 mol L^{-1})	2 days	None	s-m[a]
1A-$BiVO_4$(s-t)	CH_3COOH (1 mol L^{-1})	11 days	None	s-t[b]
1A-$BiVO_4$(s-m)	CH_3COOH (1 mol L^{-1})	11 days	673K 5h	s-m[a]
2A-$BiVO_4$(s-t)	CH_3COOH (2 mol L^{-1})	9 days	None	s-t[b]
2A-$BiVO_4$(s-m)	CH_3COOH (2 mol L^{-1})	9 days	673K 5h	s-m[a]

[a] scheelite structure with monoclinic system, [b] scheelite structure with tetragonal system.

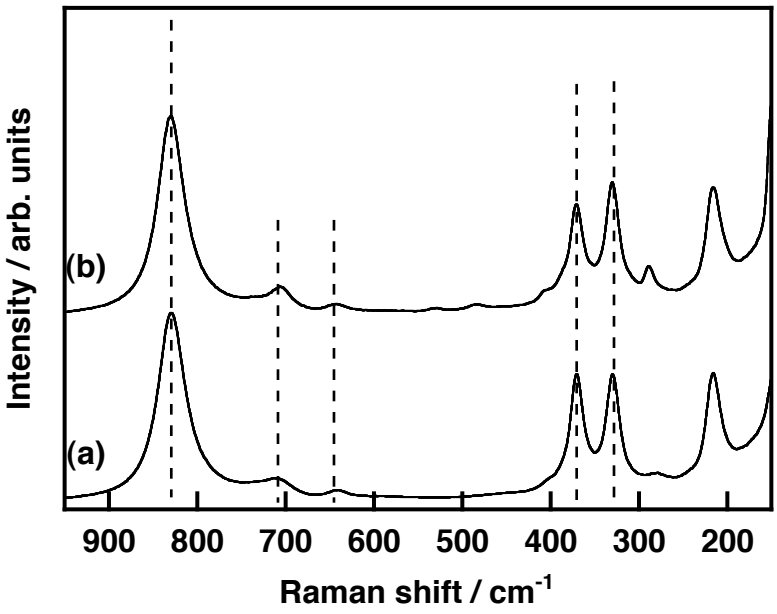

Figure S1. Raman spectra of $BiVO_4$ prepared in (a) 0.5 mol L^{-1} HNO_3 for 2 days and (b) 1 mol L^{-1} CH_3COOH for 11 days. Excitation wavelength: 785 nm. The sample (b) was calcined at 673K for 5h.

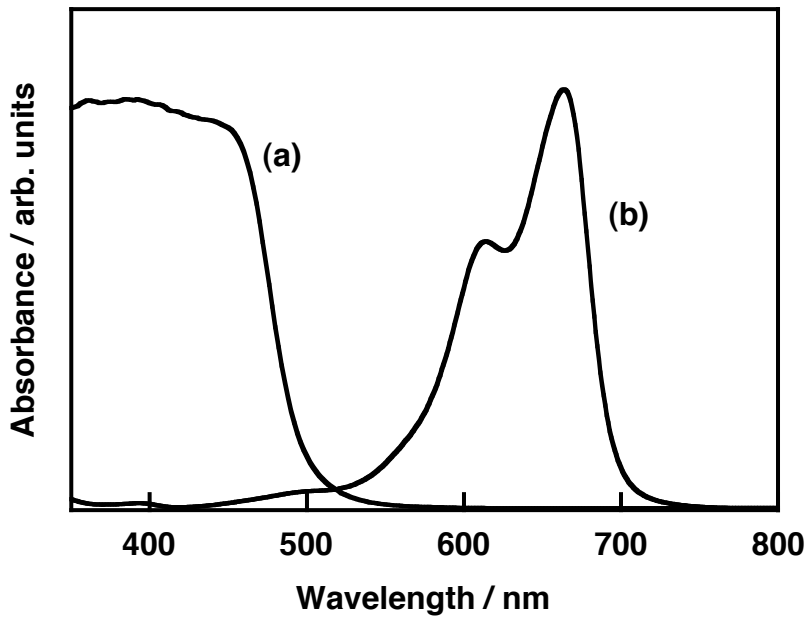

Figure S2. (a) A Diffuse reflectance spectrum of $BiVO_4$ prepared in 2 mol L^{-1} CH_3COOH for 9 days with calcination at 673K for 5h and (b) an absorption spectrum of methylene blue.