## **Supplementary Information**

Examination of photocatalytic Z-scheme system for overall water splitting with its electronic structure

Tadaaki Tani,\*a Yuichi Yamaguchi,b Taisei Nishimi,c Takayuki Uchida,d Akihiko Kudob

<sup>a</sup> Fellow, The Society of Photography and Imaging of Japan, 2933-2 Yoshidajima,

Kaisei-machi, Ashigarakami-gun, Kanagawa-ken, 258-0021, Japan.

<sup>b</sup> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science,

1-3, Kagurazaka, Shinjuku-ku, Tokyo, 162-8601, Japan.

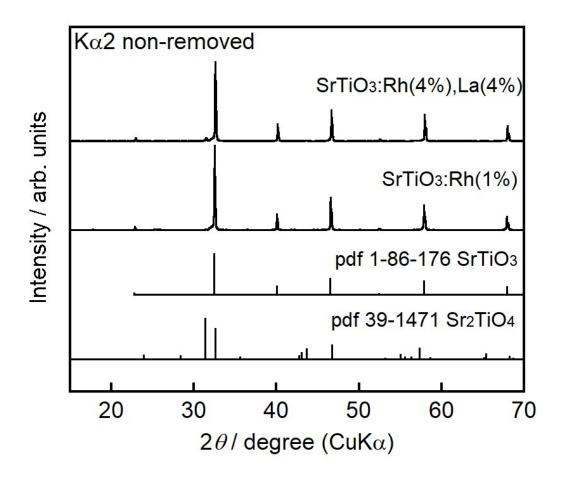
<sup>c</sup> Japan Technological Research Association of Artificial Photosynthetic Chemical

Process (ARPChem), Bld.12, Faculty of Engineering, University of Tokyo, 2-11-16,

Yayoi, Bunkyo-ku, Tokyo, 113-8656, Japan

<sup>d</sup> Graduate School of Engineering, Tokyo Polytechnic University, 1583 Atsugi,

Kanagawa, 243-0297, Japan.



**Fig. S1** XRD patterns of Rh-doped and Rh,La-codoped  $SrTiO_3$  particles. Peaks due to  $K\alpha 2$  in the XRD patterns were not removed.  $Sr_2TiO_4$  as an impurity phase was observed for Rh,La-codoped  $SrTiO_3$  possibly due to the fact that excess amount of  $SrCO_3$  as a starting material was used for preparation.

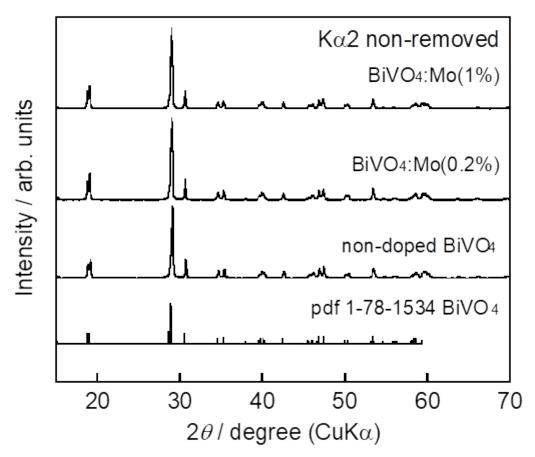


Fig. S2 XRD patterns of non-doped and Mo-doped BiVO<sub>4</sub> particles. Peaks due to  $K\alpha 2$  in the XRD patterns were not removed.