Supporting Information

Hollow $BiVO_4/Bi_2S_3$ cruciate heterostructures with enhanced visible-light photoactivity

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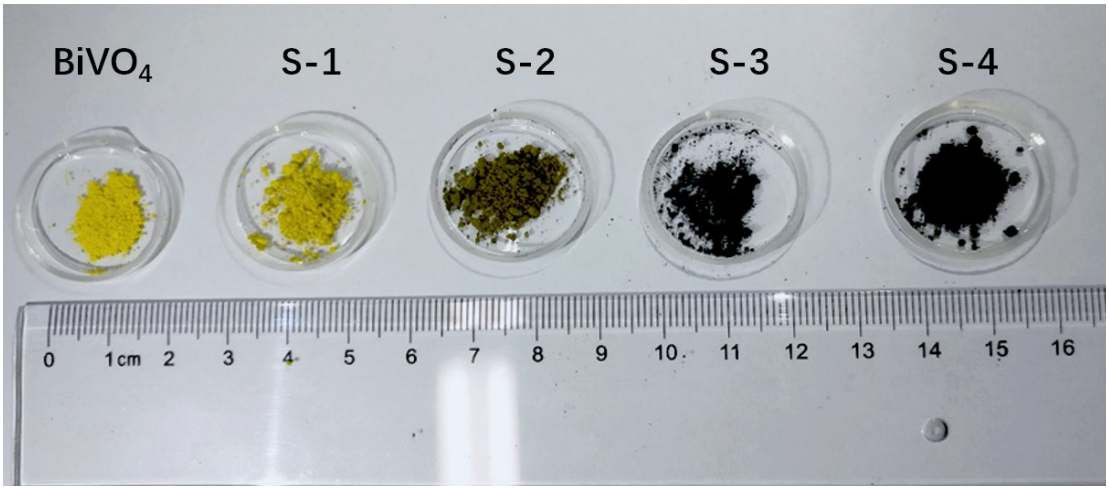

Figure S1. Pictures of as-prepared $BiVO_4$ and $BiVO_4/Bi_2S_3$ heterostructures (samples S 1-4).

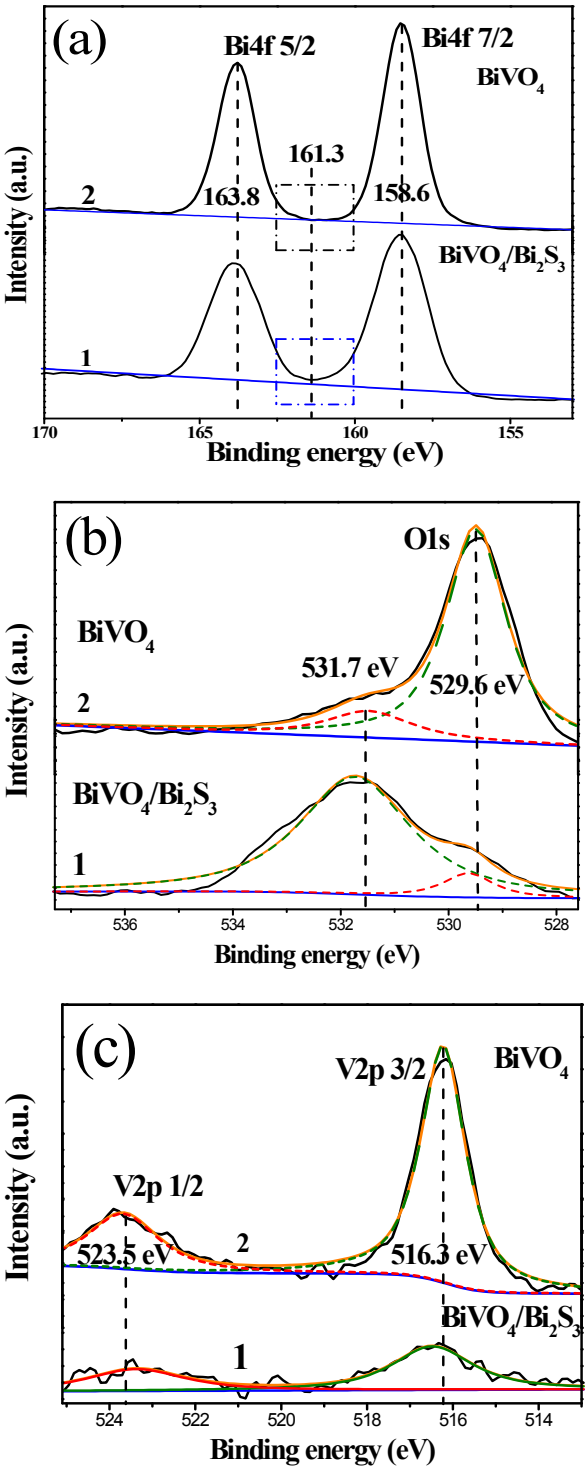

Figure S2. XPS spectra of $BiVO_4/Bi_2S_3$ heterostructures (a1, b1, c1) and $BiVO_4$ flakes (a2, b2, c2), and high-resolution spectra of the core levels of Bi 4f, O 1s and V 2p.

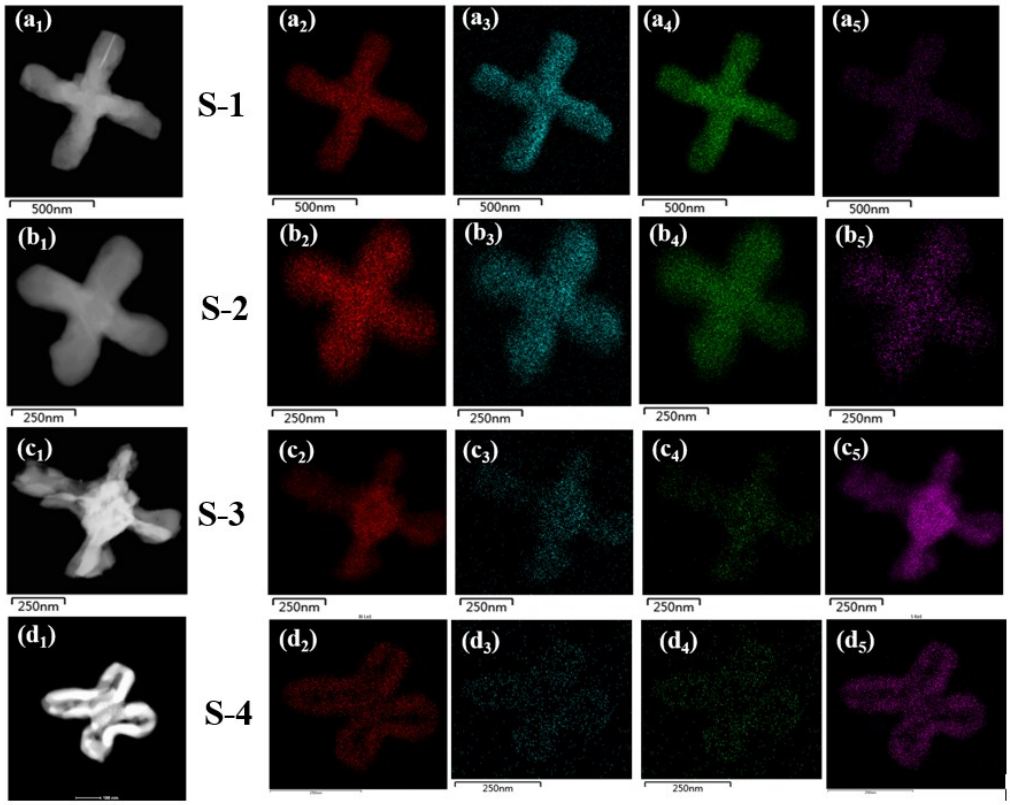

Figure S3. (a_1, b_1, c_1, d_1) HAADF images of sample S1-4. the correlative elemental mappings of (a_2, b_2, c_2, d_2) Bi, (a_3, b_3, c_3, d_3) O, (a_4, b_4, c_4, d_4) V, and (a_5, b_5, c_5, d_5) S elements.

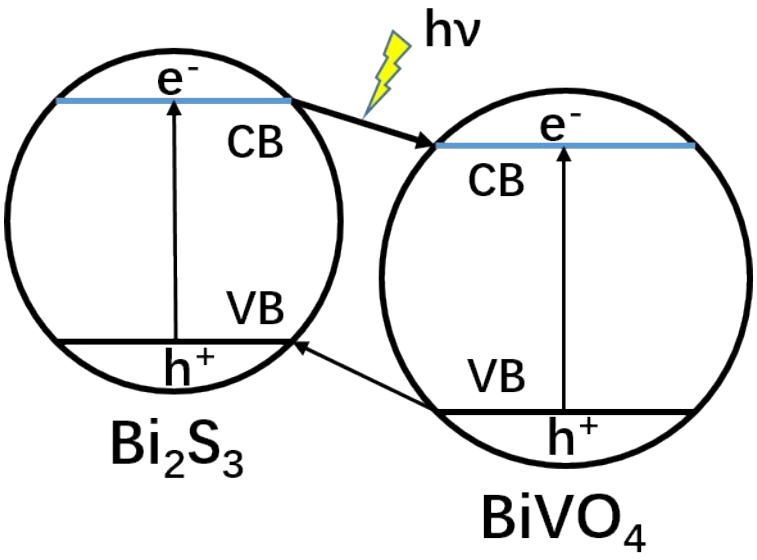

Figure S4. Diagram for energy band levels of $BiVO_4/Bi_2S_3$ heterostructures and possible charge separation process.