Supporting information for

**Understanding the contribution of hydroxyl to energy band of semiconductor: Bi$_2$O(OH)$_2$SO$_4$ vs. Bi$_6$S$_2$O$_{15}$**

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**Figure S1.** SEM images of as-prepared samples of (a) Bi₆S₃O₁₅ and (b) Bi₅O(OH)₃SO₄.
Figure S2. XRD pattern of as-prepared samples of (a) Bi$_6$S$_2$O$_{15}$ and (b) Bi$_2$O(OH)$_2$SO$_4$. 