Supplementary information

**Photo-assisted fabrication of zinc indium oxide/oxysulfide composite for enhanced photocatalytic H\textsubscript{2} evolution under visible-light irradiation**

Zongwei Mei\textsuperscript{1,2,3}, Ning Zhang\textsuperscript{1,2,3}, Shuxin Ouyang\textsuperscript{3,5}, Yuanjian Zhang\textsuperscript{4}, Tetsuya Kako\textsuperscript{1,2,3}

and Jinhua Ye\textsuperscript{1,2,3,5,*}

\textsuperscript{1} Department of Chemistry, Graduate School of Science, Hokkaido University, Sapporo 060-0810, Japan
E-mail address: Jinhua.Ye@nims.go.jp
\textsuperscript{2} Research Unit for Environmental Remediation Materials, National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan
\textsuperscript{3} International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan
\textsuperscript{4} International Center for Young Scientists (ICYS) & International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan
\textsuperscript{5} TU-NIMS Joint Research Center, School of Materials Science and Engineering, Tianjin University, 92 Weijin Road, Nankai District, Tianjin 300072, P. R. China
Figure S1. XRD patterns of (a) ZIO and (b) vacancy-rich ZIO.

Figure S2. SEM images of (a) ZIO and (b) vacancy-rich ZIO.
Figure S3. Frequency analysis for the particle diameter in (a) ZIO and (b) vacancy-rich ZIO.

Figure S4. UV-vis absorption spectra of (a) ZIO and (b) vacancy-rich ZIO.