Electronic Supplementary Information:

Sunlight-Driven Photodegradation of Organic Pollutants
Catalyzed by TiO$_2/(\text{ZnS})_{x}(\text{CuInS}_2)_{1-x}$ Nanocomposites

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Table S1. Carbon concentration (mol%) of TiO$_2/(\text{ZnS})_{0.8}(\text{CuInS}_2)_{0.2}$ nanocomposites before and after sintering with/without water vapor. The data were recorded using the Elementar Analysensysteme (GmbH VarioEL).

<table>
<thead>
<tr>
<th></th>
<th>before sintering</th>
<th>N$_2$+H$_2$O</th>
<th>N$_2$</th>
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<tbody>
<tr>
<td>Content of carbon</td>
<td>30.80</td>
<td>5.697</td>
<td>9.33</td>
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**Figure S1.** XRD patterns of oleic acid-capped TiO$_2$ (A) and (ZnS)$_{0.8}$(CuInS$_2$)$_{0.2}$ nanocrystals (B) as well as TiO$_2$/(ZnS)$_{0.8}$(CuInS$_2$)$_{0.2}$ (C) nanocomposites after removal of oleic acid. The vertical lines at the bottom correspond to the standard XRD pattern of anatase TiO$_2$ (JCPDS No.21-1272).

**Figure S2.** Effect of pH value on the degradation efficiency of R6G catalyzed by TiO$_2$/(ZnS)$_{0.8}$(CuInS$_2$)$_{0.2}$ nanocomposites.
Figure S3. Degradation behavior of rhodamine B and methylene blue by TiO$_2$/\textit{(ZnS)$_{0.8}$(CuInS$_2$)$_{0.2}$} nanocomposites, individually. 5.0 mg of photocatalyst powder was added to 30 mL of dye (10 mg/L) aqueous solution in each case, and the experiments were performed under visible light. The UV light (\(\lambda<380\) nm) was blocked by a UV filter.

Figure S4. UV/vis absorption spectra of methylene blue (MB) and rhodamine B (RB) as a function of irradiation time in the presence of TiO$_2$/\textit{(ZnS)$_{0.8}$(CuInS$_2$)$_{0.2}$} nanocomposites.