

## Nanoparticles for Solar Water Splitting

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Particle type photocatalysts attract great attentions in the fields of renewable energy; especially, in the generation of hydrogen from solar water splitting. Various types of photocatalysts have been used in hydrogen production from water splitting reactions under UV or visible light conditions. However, light sources give sometimes crucial effects on production of hydrogen due to the different ranges of catalytic activity of photocatalysts. In this study, the standard solar light condition (1000W/m<sup>2</sup>) mimicked with a solar simulator is used to produce hydrogen with various Zn type photocatalysts. Heterostructured photocatalysts show higher hydrogen production rate under the standard condition than the single component system. The photocatalysts are characterized with XRD, XPS, UV-Vis spectroscopy, SEM, and TEM in order to understand the band gap structures of the composite photocatalysts.