

Photocatalytic Water Reduction on Copper Indium Sulfide Nanoflake

김지혜, 이재성[†]

UNIST

(jlee1234@unist.ac.kr[†])

Photoelectrochemical(PEC) water splitting system has been considered as promising alternative energy source like hydrogen. There are several requirements for the development of the material, able to convert water to hydrogen with the light such as narrow band gap which utilize large portion of sun light. 2) appropriate band alignment for hydrogen reduction. 3) earth abundant and low cost of fabrication and 4) electrical and chemical stability in aqueous solution for commercial usage.

Copper Indium Sulfide(CIS) has 1.5eV of band gap. It is proper to use visible light that contains 60% of energy of sunlight. It can be synthesized by solvothermal method and hydrothermal method. By using solvothermal synthesis, we can transform copper oxide to copper indium sulfide. On the other hands, hydrothermal method directly synthesizes the copper indium sulfide on the FTO glass. The morphology of copper indium sulfide is nanoflake in commons. We are trying to But they have significant differences. We will find out the effect of morphology in photocatalytic ability.