Facile Fabrication of $CuWO_4$ Thin Film for Efficient Water Splitting

이병준, 이재성†
울산과학기술대학교
(jslee@unist.ac.kr†)

Photoelectrochemical cell (PEC cell) has been issued when it comes to increasing energy demands as well as environment aspects. PEC cell is ideal system which converts unlimited solar to chemical energy in a form of hydrogen by dividing water. Recently, copper tungstate ($CuWO_4$) has been researched because not only it has low bandgap (~2.3eV) facilitating it to utilize larger absorption range but also is stable in neutral pH compared to tungsten oxide (WO_3). However, existing synthetic methods requires too considerable energy when they induce heat from source like furnace.
Herein, a facile fabrication method to fabricate $CuWO_4$ so called hybrid microwave synthesis (HMS) is going to be adduced instead of using furnace in a heat treatment step. This method afford us to save energy during heating step with higher photocurrent and crystallinity than furnace one.