Understanding high photoelectrochemical water splitting performance of 3D BiVO4 based photoanode

문준혁†
서강대학교 화공생명공학과
(junhyuk@sogang.ac.kr†)

Photoelectrochemical water splitting is a thermodynamically efficient technology that converts solar energy into chemical energy. $BiVO_4$ is the most promising water oxidation photoelectrode. The understanding of charge transport in $BiVO_4$-based photoelectrodes is essential for high efficiency water splitting systems. We fabricate 3D bicontinuous BiVO4-based heterojunctions using a polymer colloidal crystal template and analyze the dynamics of the charge carriers in this electrode by intensity-modulated photocurrent spectroscopy.