

Photoelectrochemical cell using surfactant combined tungsten species synthesized by hydrothermal method

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Photoelectrochemical cell(PEC cell) is one of the ideal method to obtain hydrogen energy from water. Tungsten oxide is a very attractive material in photoactive water splitting because of economic feasibility, high stability in aqueous solution, and photoactivity in visible light among various candidate semiconductors. For application to PEC cell we prepared surfactant combined tungsten species by hydrothermal synthesis. When we fabricate film with interesting powder, we have to add other organic binder to attach substrate properly. The surfactant act as molecular binder to substrates in calcination step without additional binder. These were characterized by XRD, SEM, TEM, UV spectra and electrochemical analysis.