

عنوان مقاله:

Modification of fluorinated-doped tin oxide (FTO) photoelectrode by bismuth vanadate and some metal-organic frameworks such as cobalt imidazole to remove environmental contaminants such as phenolic derivatives by photoelectrocatalysis

محل انتشار:

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خلاصه مقاله:

The lack of clean water is one of the main obstacles in global social and economic development. Industrial discharge and other human activities introduce various types of pollutants into the natural environment and pollute water resource (۱). Conventional methods for wastewater treatment include physical methods, chemical methods, and biological methods, which despite being easy to use in their natural form, have their own challenges. Meanwhile, advanced oxidation processes (AOPs) have been considered as one of the most effective methods for removing toxic organic pollutants in wastewater and their mineralization. One of the advanced oxidation technologies is the photoelectrocatalysis (PEC) method. Photoelectrocatalysis (PEC) is an excellent pollutant degradation method that combines the advantages of photocatalysis (PC) and electrocatalysis (EC), which uses semiconductor materials as electrodes to efficiently separate charge carriers (۲). In this research we prepare a fluorine-doped tin oxide (FTO) photoelectrode modified by bismuth vanadate and some organo-metallic frameworks such as cobalt imidazole and investigate its photoelectrocatalytic behavior with the aim of removing some environmental pollutants such as phenolic derivatives (۲,۳,۴-trihydroxybenzoic acid (THBA)) by photoelectrocatalysis.

کلمات کلیدی:

BiVO<sub>4</sub>, Electrocatalysis, Photocatalysis, Photoelectrocatalysis, THBA

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