Electrochemical deposition of Mn^{2+} doped cadmium selenide

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The use of intentional impurities or dopants that control the behavior of materials lies at the heart of many technologies. Especially, Mn provides excellent systems to study for doping because it also has unique magnetic and optical properties. In this research, CdSe:Mn have been grown by the electrochemical deposition methods as a function of electrochemical deposition time, solution concentration, and deposition techniques. The characteristics such as the crystal structure, the compositional ratio, and energy band gap have been analyzed using the photoelectrochemical experiment, X-ray diffraction (XRD), scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDX), and the UV-Vis spectroscopy, respectively.