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Effect of sputtering power on the properties of co-sputtered Zr-Ti-W metal alloy thin films

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The Zr-Ti-W metal alloy thin films were fabricated by co-sputtering technique at room temperature. The effect of sputtering power on the thin film properties was investigated by varied power as 100, 200 and 300 W at the constant deposition time. The thickness and surface morphology of thin films were characterized by field-emission scanning electron microscope (FE-SEM) and atomic force microscope (AFM), respectively. The composition of Zr-Ti-W thin films was also analyzed by energy diffraction spectroscopic (EDS). Moreover, the crystallographic of the samples was determined by X-ray diffraction technique (XRD). The results showed that the Zr-Ti-W metal alloy thin films exhibited low surface roughness, amorphous structure, and the compositions of the element were related with the sputtering power.

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