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# Tungsten Coated on Copper Substrate Through the Double-Glow Discharge

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## Abstract

In this paper, the high melting point W coated on low melting point Cu substrate is performed through the double-glow discharge technology. We use a pure tungsten wire as a target connected on the source cathode electrode, whereas Cu foil is connected to the source substrate cathode electrode. During the deposition the argon gas is always input into the chamber as the discharge and sputtering gas. Different from the reported coating technology through the double glow discharge, in this work we employed the two pulsed power source to support the glow discharge. The crystal composition and microstructure of W coated Cu are examined by the x-ray diffraction (XRD), scanning electron microscopy (SEM). The composites via the cross section is detected by energy dispersive spectrometer (EDS), the distribution of elements along the penetration thickness is then obtained. The results indicated that a thick and no-delaminated W-Cu layer can be efficiently prepared by the double-glow plasma technology.

**Keywords:** double, glow discharge, W coated Cu, preparations

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