Short Communication

Study on Performance of Co-W/SiC Composite Coatings Electrodeposited on Copper

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In this paper, CoW/SiC composite coatings were electrodeposited from plating bath with various nano SiC concentrations. The effect of SiC concentrations on deposition rate, hardness, corrosion resistance and surface morphology of CoW/SiC coatings were studied. It was found that the appropriate concentration of SiC was beneficial to increase the deposition rate, refine the surface particles and improve hardness of the composite coatings. However, when the SiC concentration was greater than 12 gL⁻¹, the agglomeration effect of the suspended SiC particles greatly reduced the deposition rate and mechanical properties of the CoW/SiC composite coatings. The coating prepared at the concentration of 8 gL⁻¹ SiC possessed the best hardness and corrosion resistance.

Keywords: CoW/SiC composite coatings; plating technology; nano SiC; Corrosion resistance;

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