

Electrodeposition of composite coatings containing nano-sized SiC particles in Nickel matrix

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Abstract: Ni-SiC nano composite coatings were prepared by the conventional electrodeposition techniques using Nickel Sulfamate bath. The effects of parameters such as SiC content, Current density, Stirring speed and Surfactant on co-deposition of nano SiC were studied. The co-deposition of SiC particles were increased with increasing SiC in the plating bath under experimental conditions of pH and temperature. Use of surfactant not only increased the vol % of SiC but also enhanced the homogeneous distribution of nano particles in the matrix. Wear and corrosion resistance properties of composite coatings were increased with increasing vol. % of SiC in the matrix.