

Formation of copper-containing composite layers during exposure to low-temperature plasma

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The work examines the influence of the degree of erosion of the copper anode of the constant current plasmatron and the region of the plasma jet on the processes of forming a copper-containing composite near-surface layer. It is noted that when using the standard mode of operation of the plasmatron with a low erosion rate of the copper anode, the formation of copper-containing phases in the superfluous layers does not occur, regardless of the area of the plasma jet. When using the mode of enhanced erosion of the copper anode, a copper-containing composite structure is formed in the near-surface layers of the worked samples, the co-becoming of which depends on the position in the plasma jet. The proposed method of forming structures with active near-surface layers of different functionality, by varying anode material, can find wide application in modern technologies.

Keywords: copper, low-temperature plasma, anode, composite.

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