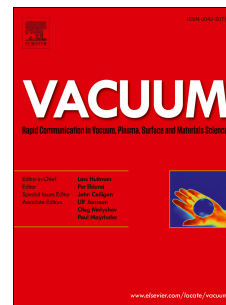


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Structure and properties of porous nickel and copper films produced by vacuum deposition from the vapour phase

A.I. Ustinov, T.V. Melnichenko, K.V. Lyapina, A.E. Shishkin



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**Structure and properties of porous nickel and copper films produced by vacuum deposition from the vapour phase**

Ustinov A.I.<sup>a,\*</sup>, Melnichenko T.V.<sup>a</sup>, Lyapina K.V.<sup>a</sup>, Shishkin A.E.<sup>b</sup>

<sup>a</sup>E.O. Paton Electric Welding Institute of NAS of Ukraine, 11 Bozhenko Street, Kiev  
03680, Ukraine

<sup>b</sup>G.V. Kurdyumov Institute for Metal Physics of National Academy of Science of  
Ukraine, 36 Academician Vernadsky Blvd., 03680 Kiev, Ukraine

\*Corresponding author. Tel.: 380 44 200 6180; fax: 380 44 205 2277.

11 Kazimira Malevicha Street, Kiev 03680, Ukraine

E-mail address: ustinov3@yandex.ua (A.I. Ustinov)

**Abstract:** The porous thick nickel and copper films were deposited by electron beam physical vapor deposition (EB-PVD) in vacuum. The microstructure and deformation behavior of the films were investigated using scanning electron microscopy and high temperature dilatometer. It is shown that porous structure of vacuum condensates is unstable, and at heating it transforms from open-type porous structure into porous structure of closed type. It is assumed that such thermal instability of porous structure can be due to the presence of high density of vacancy-type defects in the structure of such materials. Change of structural state of vacuum condensates during heating at application of continuous load influences the conditions of their superplastic deformation. Possibility of application of such foils as interlayers in pressure welding is discussed.

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