

Temperature changes in C-Pd nanocrystalline films

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ABSTRACT

Nanostructural carbonaceous-palladium films (C-Pd films) can be used in detectors of hydrogen and hydrogen compounds. Resistivity or capacity values are usually detected signals that depend on a change of experiment conditions, such as atmosphere composition, temperature or applied voltage. Therefore, it is very important to know what is the influence of these factors on the structure, topography and morphology of films. These properties are connected to a conductivity of studied film.

In this paper we present a study of topographical and morphological changes connected to the temperature of environment. Topography and morphology changes were performed with scanning electron microscopy (SEM). Resistivity study versus temperature was investigated in a specially prepared setup. Temperature-resistivity measurements were done in air and nitrogen atmosphere for temperature from 20 to 200 °C.

In Fig.1 a, b SEM images for films before and after resistivity - temperature measurements in air atmosphere are presented.

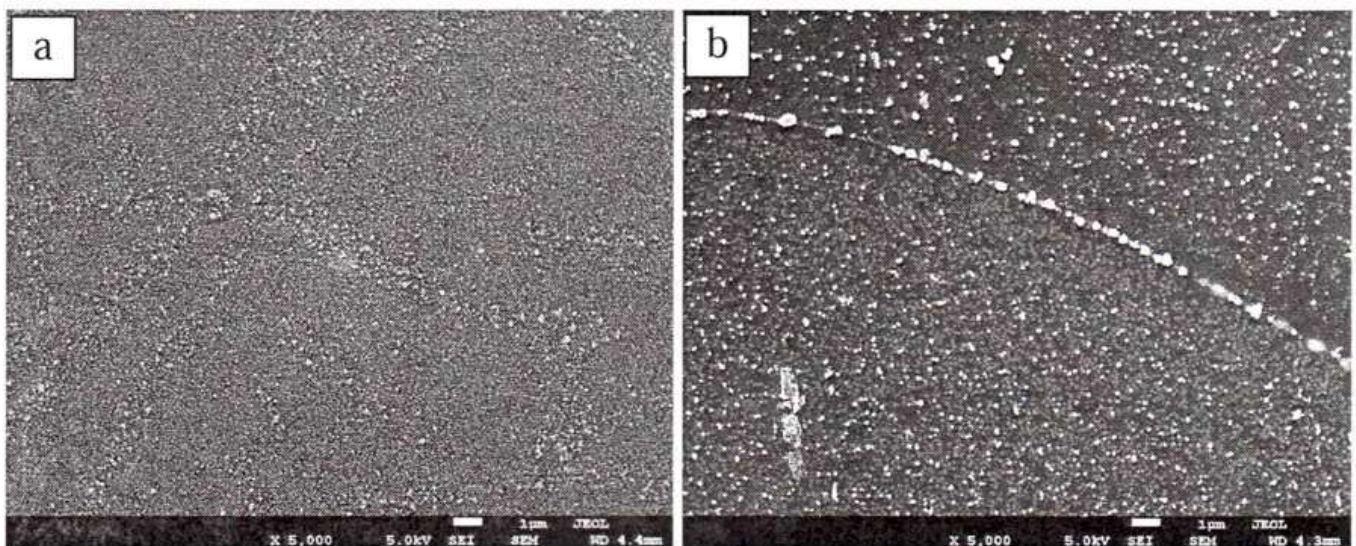


Fig.1. SEM films a) before, and b) after resistivity - temperature measurements in air atmosphere

For samples placed in nitrogen no changes in topography and morphology due to temperature were found.

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