RAMAN, FTIR AND OPTICAL SPECTROSCOPY STUDIES
OF CARBON – PALLADIUM NANOCOMPOSITES

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Palladium nanograins placed in carbonaceous matrix shows many interesting properties connected to ability of hydrogen adsorption/absorption. Carbonaceous-palladium (C-Pd) films can change their structure, electrical conductivity, capacitance as well as optical absorption, transmission and reflection properties. These effects are connected to an incorporation of hydrogen atoms into palladium lattice.

Samples of C-Pd nanocomposites were prepared in Tele&Radio Institute (Warsaw, Poland). Technology of material preparation is described in [1,2]. We studied the Raman spectra for samples with different weight content of Pd and deposited on different substrates [3,4]. Influence of the temperature and other technological parameters was also taking into account. Especially influence of the hydrogen on FTIR spectra was investigated [5-7]. The optical measurements were also performed [8].

As a result of our research a model of the optical hydrogen sensor has been developed and designed [7]. We conclude that C-Pd nanocomposites are promising material for photonics and optoelectronic application.

Bibliography


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