

# 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.

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## **Acknowledgments**

This research was co-funded by the European Regional Development Fund within the Innovative Economy Operational Programme 2007-2013 (No UDA-POIG.01.03.01-14-071/08-10). This research was performed in the framework of the EU COST Action MP0702 and financed by Polish Ministry of Science and Higher Education (577/N-COST/2009/0 research project). The optical research was performed using equipment co-funded by the European Regional Development Fund (METROLAB project, UDA-RPSW.02.01.00-26-010/12). The Raman research was performed using equipment co-funded by the European Regional Development Fund within the Innovative Economy Operational Programme 2007-2013 (No POIG 02.02.00-26-023/08-00).