

**FUNCTIONALIZED NANOMATERIALS ZNO:PDO FOR GAS SENSORS**

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Today, there is a growing tendency to use renewable resources. Thus, researchers from different research institutions are developing different nanotechnologies to be able to solve the given problem. One of the solutions may be to use electric batteries and environmentally ecological fuels. One of the ecological fuels can be hydrogen [1]. Thus, there is a need to obtain new sensors using cost-effective methods for hydrogen detection and reliable smart nanomaterials. Large-scale applications of hydrogen in production also require the availability of varieties of hydrogen sensors, as these sensors have several advantages over conventional hydrogen detection methods, including their lower cost, smaller size, and faster response. These advantages make them more suitable for portable hydrogen detection and in a wide range of applications. Such sensors are well established for use in industry, where they can be regularly calibrated and operated by trained personnel [2]. However, the emergence of a hydrogen economy provides the impetus for the production of low-cost, simple-maintenance, easy-to-install, easy-to-use, and accurate hydrogen sensors suitable for use by untrained individuals in a variety of applications. One of the sensors that can detect hydrogen are structures based on nanostructured ZnO films functionalized with Pd nanodots. [3]. The use of Pd nanodots made it possible to obtain sensors that can detect high hydrogen concentrations even at low operating temperatures [3]. Thus, in this paper it is proposed to obtain new sensors that can detect hydrogen based on ZnO:PDO nanomaterials. The study was supported by the by State Program LIFETECH “Innovations in Biomedical Engineering: Advanced Technologies and Applications for Data Acquisition, Processing and Analysis” No. 020404 at Technical University of Moldova and “Satellite systems and platform for monitoring plantations and water surfaces with the application of space technologies and drones” at TUM No. 020401.

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