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NANOCOMPOSITE CARBONACEOUS-PALLADIUM THIN FILMS FOR AMMONIA SENSING

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Nanocomposite carbonaceous-palladium (C-Pd) films, which were synthesized in two steps new method based on Physical Vapor Deposition and Chemical Vapor Deposition (PVD/CVD) processes. Films were deposited on alundum substrate. Investigated films were obtained at different parameters of CVD process but at the same conditions in PVD process.

These films are promising materials for ammonia sensor applications. Films were characterized by SEM (after PVD and PVD/CVD process), TEM (after PVD/CVD process) and sensing properties on ammonia for all these films were also measured.

Our SEM investigations of initial film obtained from PVD process reflect substrate surface's shape and are composed of angular grains few hundred nm in size. Microscopically studies of PVD/CVD films show that topography and morphology of the film strongly depends on the temperature of CVD process. Sensing properties of these films are connected to their structural and morphological properties.

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