

Nanostructured Materials and Applications in Gas Deduction Systems

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Abstract: Science and technology are accepted as a means of overcoming the difficulties that people face throughout their lives. It has made many progresses in order to facilitate life and reduce the workload as much as the day-to-day invention of wheels. Especially with the industrial revolution realized in 1800 years, science and technology have gained great importance in the development and development of the country. With the industrial revolution, the increase in the use of fossil fuels led to the release of harmful gases in intense quantities. This situation has affected human health in a negative way by bringing out fatal diseases. Gas sensors are used in the detection of flammable, explosive and suffocating gases that are life threatening due to a variety of reasons (warfare agents, production processes, etc.). The gas sensors are the first to store gasoline or to detect leaks in gas tanks. They were produced by Oliver Johnson in 1926 [1-Benim Tez].

When everyday life is examined in micro dimension rather than macro dimension, it is possible to come across a house with an astonishing degree of beauty on the nano scale at the corner of our home, our office or any of our goods. In this case it is necessary to accept that many people in daily life are working with nanotechnology, which is a very misleading discourse. Nanotechnology is not only the reduction of the dimensions of the materials to be produced, but the quantum mechanical interactions in the material are dominant, so that the materials are provided with new physical and chemical properties.

Nanotechnology and the nano-sized materials and devices which are the products of this technology are used to reduce the size, weight, production costs and productivity of various tools and equipments used in everyday life. The ability to manufacture electronic devices such as solar cells, nano-tubes, light emitting diodes, which can be stretched in accordance with our clothes using a variety of nanostructures, demonstrates how nanotechnology has benefited us so much.

Gas sensors are not only used to detect the gases in the atmosphere but also many other areas such as gases, explosives, and diseases that may occur during the production process. Progress in the field of industry, environmental analysis and human quality of life without sensors is not possible. Basically a gas sensor consists of a sensor layer that can detect the gas present in the environment, a transducer that can convert the interaction between the gas and the sensor layer into understandable physical quantities, and a user interface that can visualize or audibly warn the user by processing signals from the transducer [1].



Biography: Dr Sadullah ÖZTÜRK is an Assistant Professor in the Department of Biomedical Engineering, Fatih Sultan Mehmet Vakıf Üniversitesi, Istanbul, Turkey. He did B.Sc.in Solid State Physics in the year 2006 from Marmara University. . He did M.Sc and Ph. D from Gebeze Institute of Technology in the 2009 and 2014 respectively. He has published 57+ journals and conference papers. He has received full scholarship for Ph.D. He was the founder and manager of the Limited Liability Company, company established under the supported project of Republic of Turkey Ministry of Science, Technology and Industry. The company produces gas detectors for household security. He is currently doing research in the areas of Gas production and testing of sensors.