LOW COST SENSORS FOR THE DETECTION OF GASEOUS HYDROGEN

PATENTED TECHNOLOGY

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ABSTRACT

The research group *Carbon Materials and Environment* which belongs to the Inorganic Chemistry Department and the University Materials Institute of the University of Alicante has developed a new procedure for the preparation of sensors in order to detect gaseous hydrogen in a simple, economical and efficient way. The main advantages of this technology are the robustness, simplicity and reliability of the prepared sensors and it can be used in the following industrial sectors: automotive, energy, gas separation, gas production and fine chemistry. The research group is looking for companies acquiring this invention for: commercial agreement or technical assistance or manufacturing agreement or technical cooperation or a combination of some of these services

ADVANTAGES AND INNOVATIVE ASPECTS

The method employed to prepare this kind of sensors has proven to be very simple to give rise to highly sensitive sensors which perform with very high reproducibility under realistic conditions. The nature of the suspension of the CNMs has a paramount influence over the samples behaviour. As an example, the sensors prepared from the water suspension show an enhanced sensitivity with respect to DMF-based systems, due to the higher degree of dispersion of
the SWCNTs and the characteristics of the nanoparticles/polymer/SWCNT system.

MARKET APPLICATIONS

The present invention deals with a novel, simple and efficient procedure for the synthesis of devices for the detection of gaseous hydrogen with special interest for the industry related to sensor fabrication and the detection of chemical substances, which moreover presents a low production cost per sensor.

Among other applications, the prepared sensors may be used as safety devices in any industry or application which uses, produces, or stores hydrogen, such as:

- Hydrogen-powered vehicles
- Hydrogen fuelling stations
- Hydrogen generation and storage stations
- Transportation and storage systems (deposits, low and high pressure cylinders, compressors, pipelines, etc.)
- Industrial vehicle battery charging zones
- Electrical power station transformers
- Systems for the analysis and measurement of gases

COLLABORATION SOUGHT

The research group seeks companies interested in acquiring this technology for its commercial exploitation through different technology transfer pathways.