

The effect of temperature and frequency modulation on the dynamic response of a resistive gas sensor

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Despite the complexity of human knowledge and strong progress that has happened, in the field of diagnostics, is powerless and what is known as an electronic nose with what we have expect today of the word "NOSE" is far and this is perhaps one of the wonders of the natural world. The technology that is used in this context is very interesting and intelligently. Many researchers work in the field and every day new ideas emerge in these areas. The objectives of this research can be summed up that includes: Enhancing the ability of the sensor ivity, reduce costs, enhance the ability of both features in a mixture with high precision, ivity limited range, change the sensor response curve due to changes in environmental conditions, longevity... and a major problem that the researchers to achieve an ideal nose is that in fact, the molecular structure of the gas sensors have detected and molecular structures are very complicated, the only difference is for example in a bond angle, however it shows the opposite properties. In other words, these sensors are not faced with a simple physical quantity .It's the kind of molecule has a different chemical composition (which is related to the number of atoms of angle, location of Atom bond...) to distinguish. This is perhaps the main difference with other sensors and gas sensors. This is perhaps the main difference with other sensors and gas sensors. Unfortunately, one of the problems of these sensors is the lack of ivity; So far, many methods have been conducted to establish the ivity of these sensors. Such that it can refer to the sensor array, the modulation temperature, create filters and.... In this project was used a gas sensor resistance to the appropriate or among the techniques of pulse modulation method by applying thermal or thermal transitions, techniques based on a combination of temperature and period of the sine wave, ramp, pulse and stair in 4 periods of 5, 10, 20 and 40 seconds and the by comparing between these methods, we achieve to best practices and the best period and also we try to apply

frequency modulation, answering to the question whether a different frequency waves on the surface of the sensitive layer can affect its ivity characteristics?

Keywords : ivity and gas detection, temperature modulation, gas resistance sensors, frequency modulation, transition temperature modulation, the temperature period modulation

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