

عنوان مقاله:

A Microfluidic based ZnO nanoparticle Ozone sensors: Design and simulation Approach

محل انتشار:

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خلاصه مقاله:

Ozone Detection plays a dominant role in improving the weather quality. Nowadays most conventional Ozone detectors are expensive and they consume high power. Previously, Ozone sensors were based on UV absorption with a moderate range of detecting. This kind of sensors was unwieldy, costly and with great energy utilization. Recently, many researchers focused on semiconductor gas detectors' characteristics. Thickness, weightless, minimal effort control framework, and stretchability are counted as flexible substrates' advantages. Furthermore, adding ZnO as the sensible material placed on the adaptable substrate is an essential choice in case of the various properties of ZnO. Designing a low cost and less power consumption sensor has become the goal. An Ozone sensor based on ZnO nanoparticles attracted many researcher attentions. In this paper, we present a method designing Microfluidic based ozone detection sensors. The ZnO nanoparticles were added to the substrate and the temperature changes in the presence of them, which gives us different sensor resistance in the ambient air including the Ozone gas. This sensor is one of the best according to its simple utilization, cheap price, and low power requirement. All steps of the design .have been simulated with the help of COMSOL Multiphysics software

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