

Nanotechnology-boosted chemoresistive gas sensors: principles, devices and systems

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ABSTRACT

In this presentation some basic ideas and benefits behind the development of advanced miniaturized chemoresistive gas nanosensors, mostly based on metal oxide nanomaterials, with the aim of their implementation in sensing systems, will be presented. The fabrication and characterisation of these nanomaterials, their integration into devices and the performance of the resulting devices towards different gases will be shown and critically discussed. Ongoing efforts towards reducing power consumption, towards integrating different sensors in single chips, with the goal of developing miniaturized electronic noses, and the exploration of novel sensing material, like conductive Metalorganic Frameworks (MOFs), will be presented.