

# TiO<sub>2</sub> nanotubes for chemical sensing

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## **ABSTRACT**

The importance of high performance gas sensing devices is rapidly increasing for a wide range of applications, including detection of toxic and explosive compounds in public spaces, military facilities, and chemical processing plants. Herein, we report the synthesis of highly ordered TiO<sub>2</sub> nanotubes and their gas sensing properties. The formation of pure and doped nanotube arrays considering the parameters of the electrochemical procedure is studied. The gas sensing properties of prepared materials towards different gaseous compounds are investigated. The morphology, structure and composition of nanotubes affect their sensing performance. The working mechanism of fabricated sensors is also proposed.