

TiO₂ Sensoric Structures with Controlled Extension of Their Active Area by EBDW and RIE Techniques

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Abstract. Metal-oxide nanostructures with precisely controlled geometries can play an important role in the technological improvement of sensors for gas detection. In this article we deal with the preparation of sensoric structures of sputtered TiO₂ film the aim of which is for detection of environmental gases such as CO_x, NO_x or NH₃ and the like. Thin polycrystalline TiO₂ deposited on a resistive layer of SiO₂ was patterned by EBL and subsequently RIE etched to obtain controlled geometrical extension of its active area. The increase and enhancement of the TiO₂ active area was also controlled by its annealing and ICP RIE etching through a HSQ resist mask or eventually an aluminum mask.