



Characterization of tellurium-based films for NO₂ detection

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Abstract

Sensing characteristics of tellurium-based thin films for NO₂ monitoring was studied systematically. The influence of contact materials, thermal treatment, temperature and thickness of the samples on the electrical conductivity and sensitivity to NO₂ with respect to scanning electron microscopy analyses is given. The possibility is shown to optimize the properties of the films for the development of a simple and stable NO₂ sensor device with rapid response/recovery time and low operating temperature. The sensing mechanism is discussed for the direct interaction of gaseous species with lone-pair electrons of chalcogen atoms.