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Enhanced room-temperature ammonia vapor-sensing activity of nebulizer spray pyrolysis fabricated SnO₂ thin films: an effect of Er doping

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Abstract: In this work, we have coated 0, 1, 3, and 5 wt% of Erbium (Er)-doped tin oxide (SnO₂) films on glass using a simple nebulizer spray pyrolysis method to make an ammonia vapor sensor with remarkable sensitivity. X-ray diffraction, Atomic force microscopy, Ultraviolet–visible spectroscopy and photoluminescence methods were employed to inspect the thin-film samples. Room-temperature ammonia vapor sensing was performed by a computer connected to the homemade gas-sensing system. The results obtained show that Er doping in SnO₂ films gradually decreased the crystallite size with an increase of the

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