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Titel des Beitrags: Time stability of carbon nanotube gas sensors

Abstract: In this communication, we report on the long-term stability of a carbon nanotube (CNT) thin-film based NH3 gas sensor. These sensors were fabricated with a reproducible, large-scale, low-cost spray deposition process and are examined in terms of NH3 sensitivity and long-term stability. The devices are measured directly after fabrication; 1-year and 4-years post fabrication while being stored in ambient conditions without further encapsulation. The retention of up to 96% of response demonstrates the stability of such CNT-based devices. Hence, it solves a critical issue for stepping beyond the proof of concept stage. Not only can CNT-based gas sensors be utilized for years, but such sensors also do not require any special recalibration over the years.

Stichworte: aging CNT NH3 single-walled spray deposition

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