SUPPORTING INFORMATION

A Handwriting Method for Low-Cost Gas Sensors

F. Loghin [1], A. Falco [2], A. Albrecht [1], J. Salmerón [1], M. Becherer [1], P. Lugli [2], A. Rivandeneyra [1]

[1]Institute for Nanoelectronics, Technische Universität München, 80333 Munich, Germany

[2]Faculty of Science and Technology, Free University of Bozen-Bolzano, 39100 Bozen-Bolzano, Italy

Time response

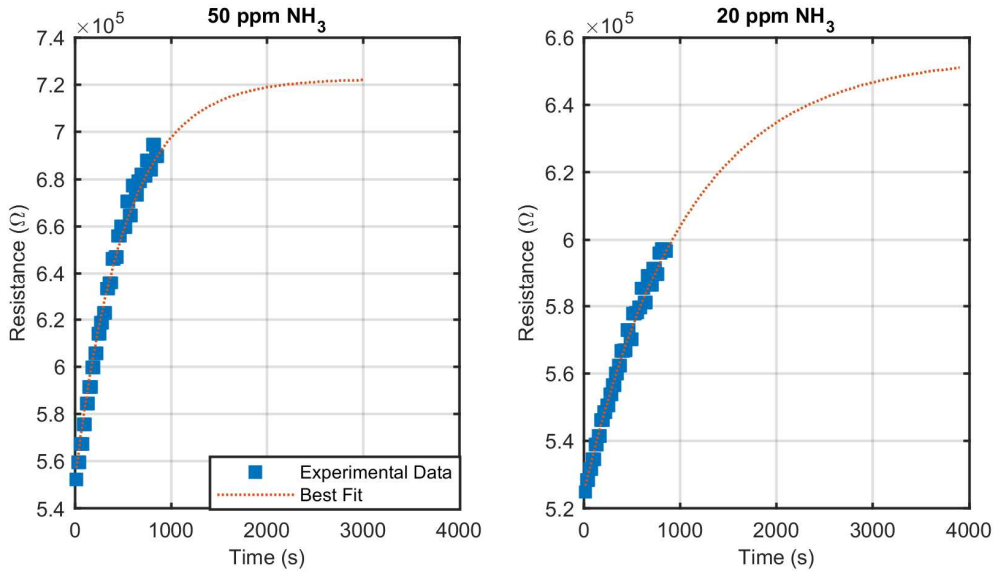

Figure S1. The time response, calculated as the time constant of the RC system, is equal to 520 s for 50 ppm and 1060 s for 20 ppm. As a result, the rise time can be approximated to 1200 s and 2430 s, respectively. The reason behind the slow response resides in the high area of the considered device and the relatively thick CNT film. Nevertheless, as evident from this analysis, the slope of the curve, for

higher concentrations is substantially higher: for a more timely detection of dangerous gases, an approach based on the instantaneous slope could be employed (see Fig. 4 and Fig. 5 in the manuscript).

Gas Exchange setup

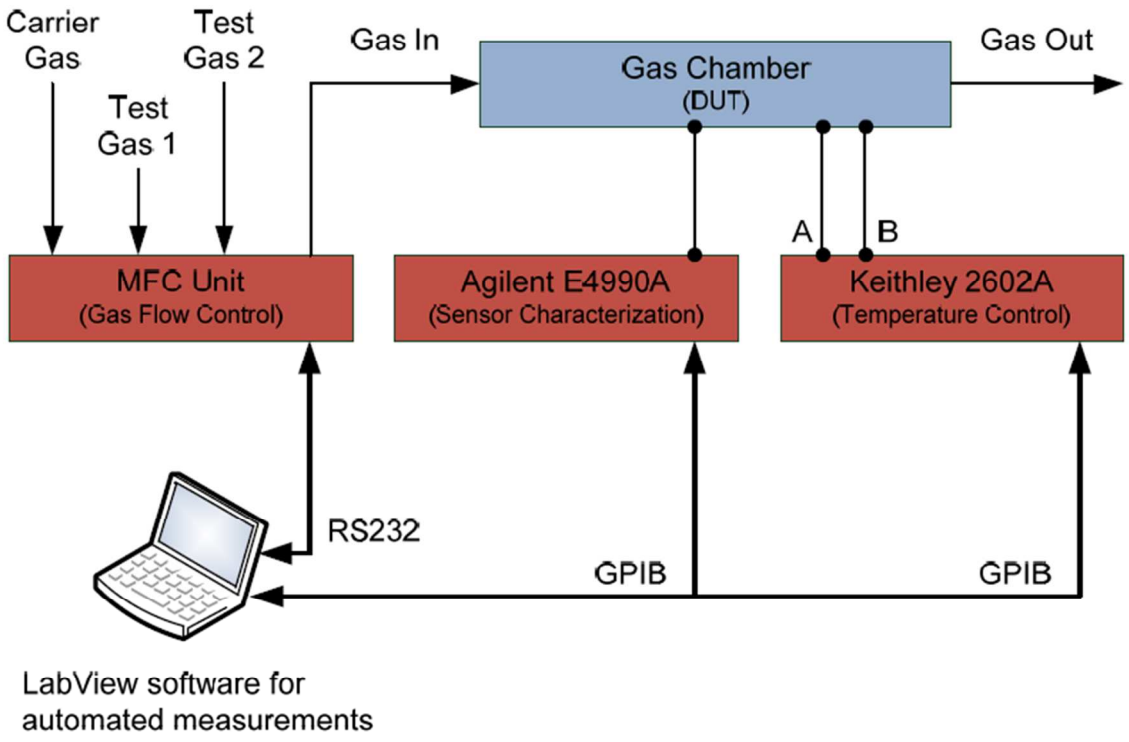

Figure S2. Adapted, with the author's permission, from: Abdellah, A. (2012). Scalable Thin-Film Manufacturing Technologies for Organic Electronics (Doctoral dissertation, Technische Universität München).

Repeatability

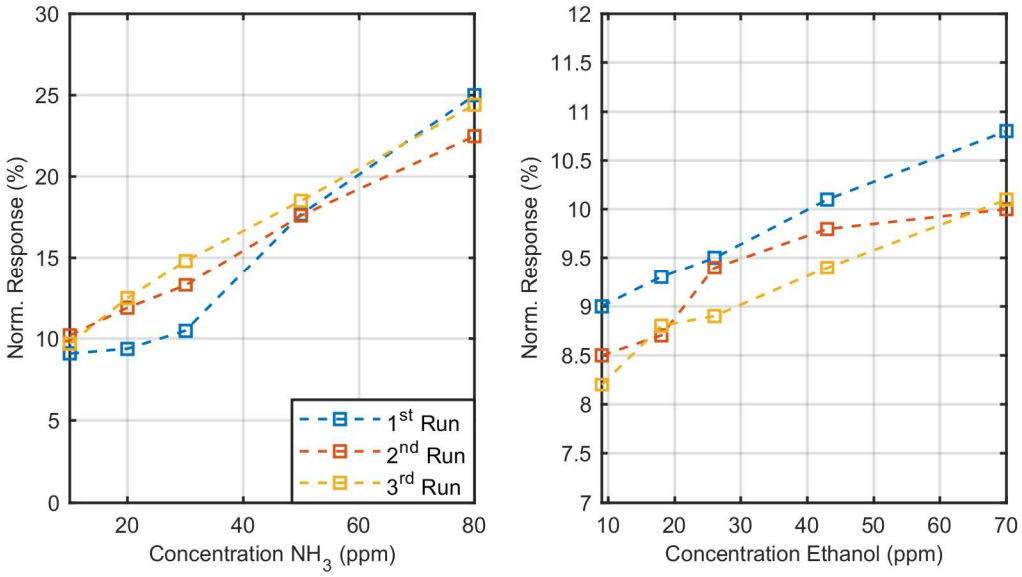

Figure S3. The plots show the normalized responses extracted from different measurements performed on the same sensor in different times. Between one measurement and the other, the samples were kept in office environment, without particular care, to simulate more real-life conditions.

Stability of the baseline

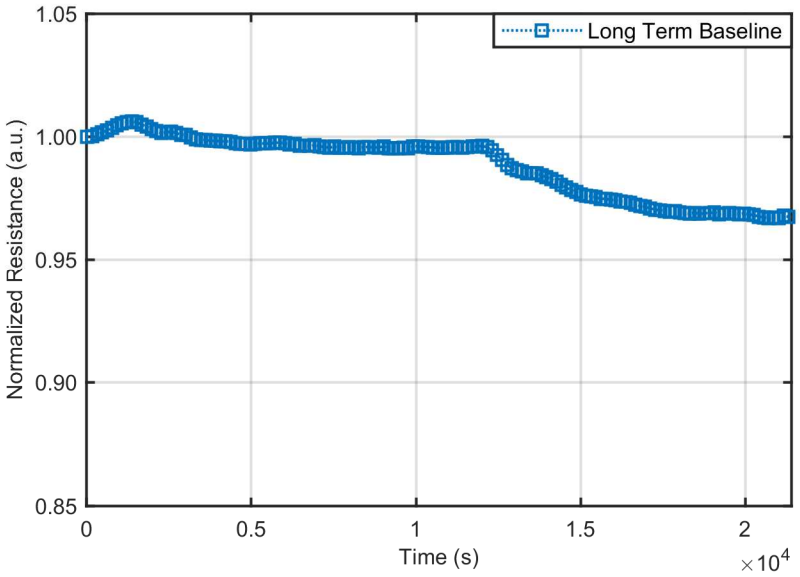

Figure S4. The figure reports the measurement of the sensor's baseline over an extended period of 6 hours, denoting only minor change in the base resistance (most likely due to a temperature variation in the measuring chamber).