JSSS

Journal of Sensors
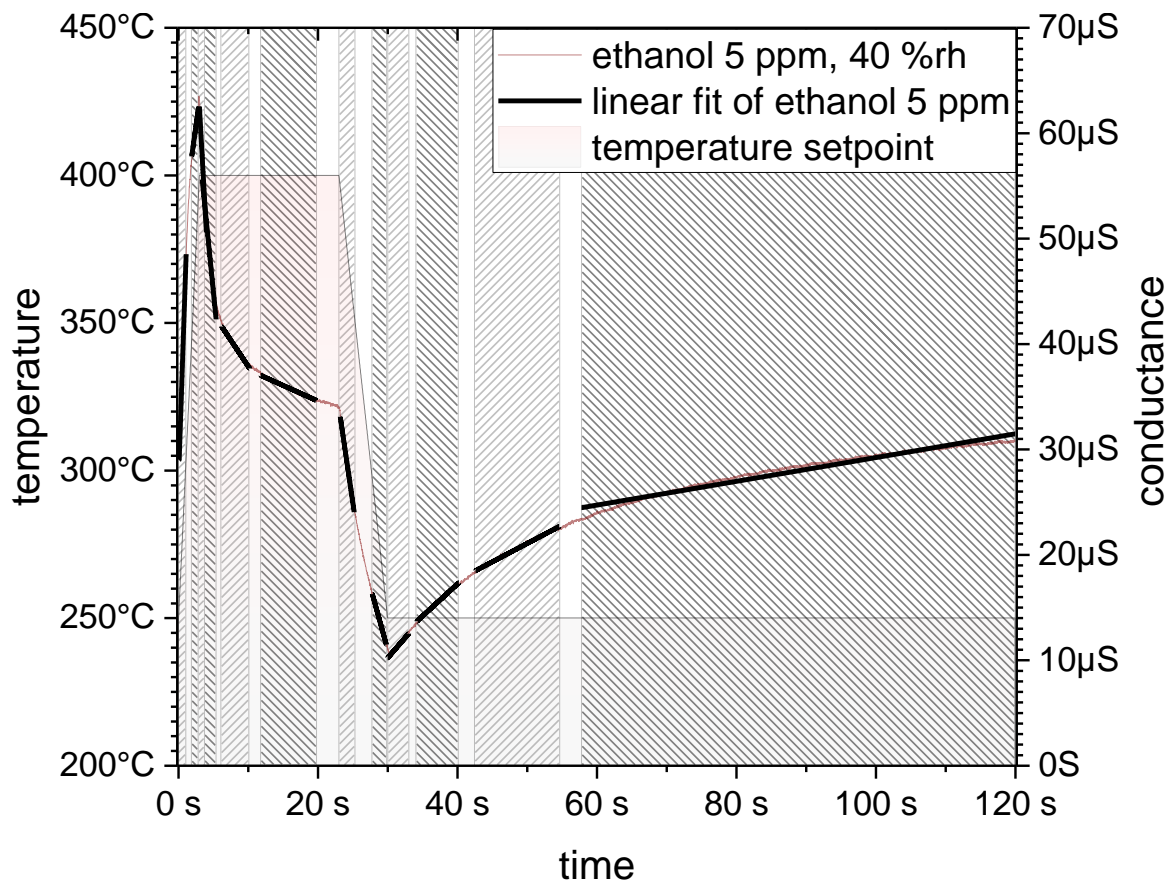and Sensor Systems

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Supplement of

A novel approach for detecting HMDSO poisoning of metal oxide gas sensors and improving their stability by temperature cycled operation

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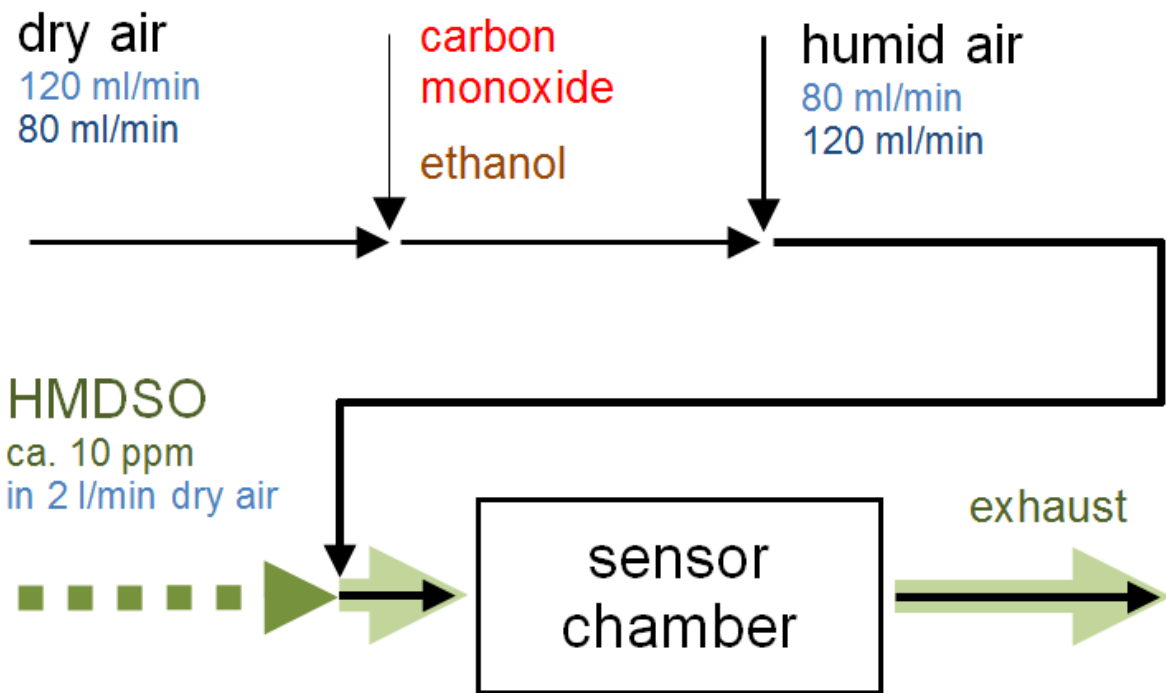
1

2

3 Fig. S-1: Temperature cycle and conductance over time at an exemplary gas exposure – the

4 black lines represent the linear fits carried out in the shaded sections for feature extraction.

5

dry air
120 ml/min
80 ml/min

carbon
monoxide

ethanol

humid air
80 ml/min
120 ml/min

HMDSO
ca. 10 ppm
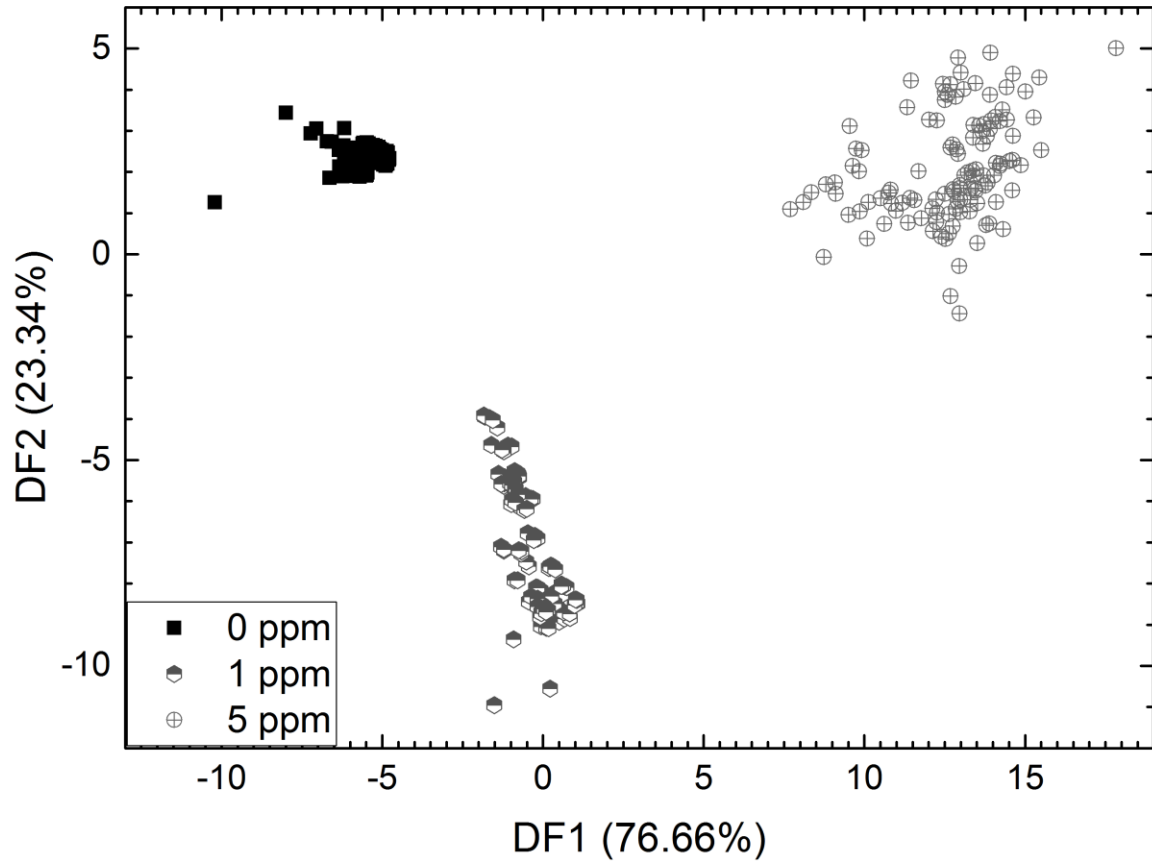in 2 l/min dry air

sensor
chamber

exhaust

1

2   Figure S-2: Setup for the measurements examining the poisoning stability of the temperature

3   cycle for robust gas measurement.

4
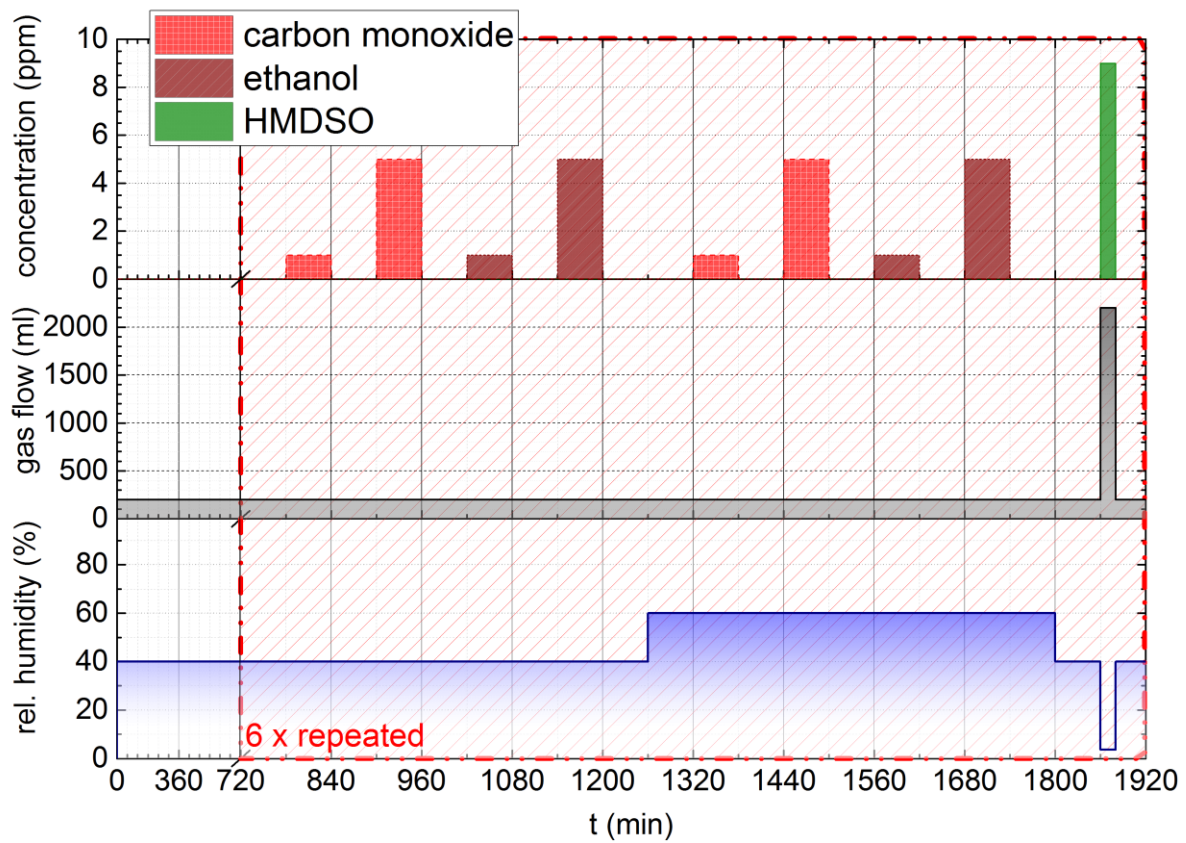
1

2   Figure S-3: Gas profile for the measurements examining the poisoning stability of the
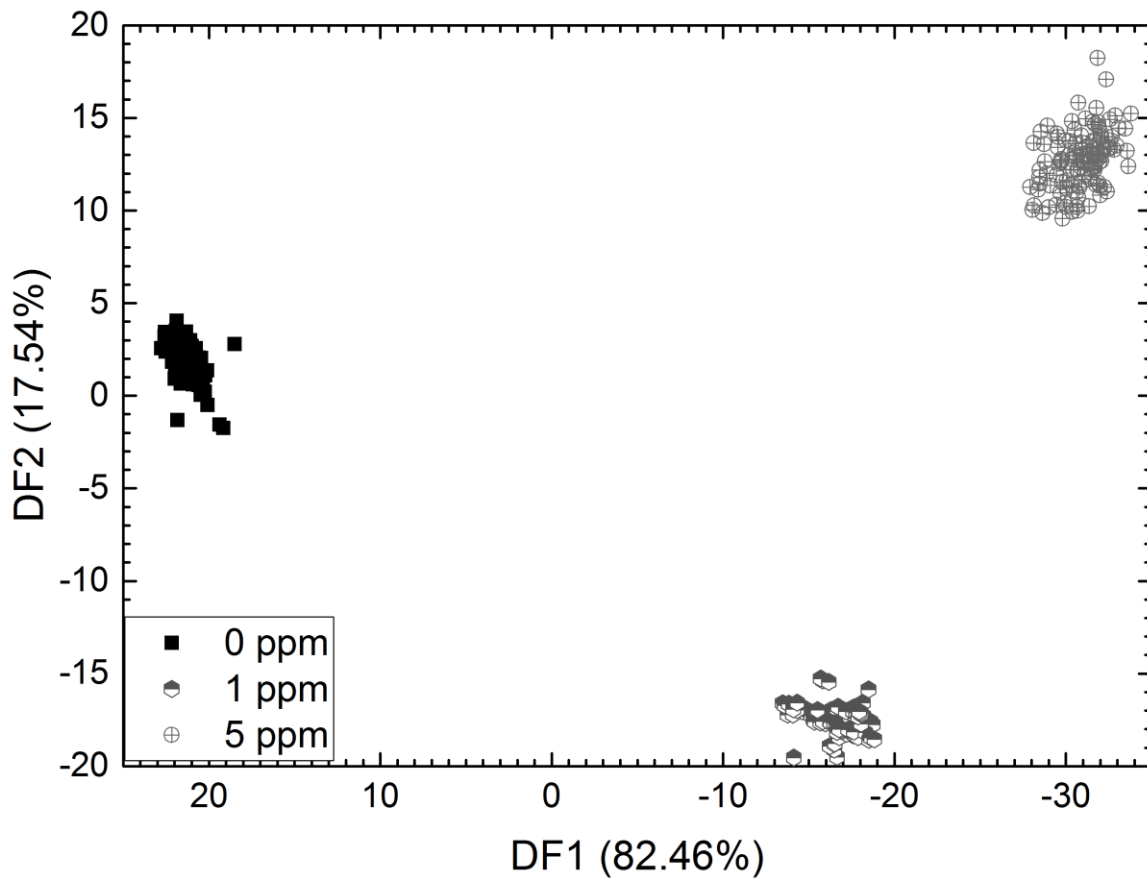3   temperature cycle for robust gas measurement.
4

1

2　Figure S-4: LDA plot showing the discrimination of different gas concentrations based on
3　non-normalized data from different poisoning states of sensor 1. The DFs were calculated
4　with data from all poisoning states. The 12 features used for this LDA are based on actual
5　conductance values.

6

1

Figure S-5: LDA plot showing the discrimination of different gas concentrations based on normalized data from different poisoning states of sensor 1. The DFs were calculated with data from all poisoning states. The 12 features used for this LDA are based on normalized conductance values, i.e. a linear projection of all conductance values of a temperature cycle to the interval [0; 1] (cf. Fig. 7).