

Pulsed polarization based NO₂-sensors – Investigation of electrode processes

Nils Donker defended his doctoral thesis

Congratulations!

Nils Donker defended his doctoral thesis about “Investigation of electrode processes in a YSZ-based nitrogen oxide sensor working according to the pulsed-polarization working principle” (German original title: *“Untersuchung der Elektrodenprozesse in einem nach dem Pulspolarisationsprinzip arbeitenden Stickoxidsensor auf YSZ-Basis”*) on Wednesday, July 29th, 2026.

Dr. Donker’s work bases on a close collaboration with the Kurt-Schwabe-Institute for Sensor Technologies in Meinsberg, Germany (Dr. Jens Zosel and late Prof. Ulrich Guth). The collaboration was funded by the German Research Foundation (DFG).

Special thanks to Prof. Maximilian Fleischer for his support as the second examiner!

Dr. Donker already published several parts of his thesis in peer-reviewed journals:

N. Donker, J. Zosel, R. Moos, D. Schönauer-Kamin, Periodically Pulsed Polarization Gas Sensors Based on Au|YSZ: Mechanism of NO_x Detection, *Sensors*, **26**, 2280 (2026), doi: [10.3390/s26072280](https://doi.org/10.3390/s26072280)

N. Donker, D. Schönauer-Kamin, R. Moos, Mixed-Potential Ammonia Sensor Based on a Dense Yttria-Stabilized Zirconia Film Manufactured at Room Temperature by Powder Aerosol Deposition, *Sensors*, **24**, 811 (2024), doi: [10.3390/s24030811](https://doi.org/10.3390/s24030811)

N. Donker, A. Ruchets, D. Schönauer-Kamin, J. Zosel, U. Guth, R. Moos, Influence of Pt paste and the firing temperature of screen-printed electrodes on the NO detection by pulsed polarization, *Journal of Sensors and Sensor Systems*, **9**, 293-300 (2020), doi: [10.5194/jsss-9-293-2020](https://doi.org/10.5194/jsss-9-293-2020)



The evaluation board and the candidate.

From left to right: Prof. Schmidt, Prof. Döpfer, Dr. Donker, Prof. Moos, and Prof. Fleischer,

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