

New Dynamic Oxygen Sensor

MicroMountains iNNOVATION fORUM
Micro Technology

23.02.2010

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Heraeus Sensor Technology provides micro-structured thin- and thick-film systems

— **Coating Technologies**

PVD, Sputtering and Screen Printing

— **Structuring Technologies**

Microlithography and Laser Scribing

— **Assembling and Joining of Ceramic, Metal and Glas**

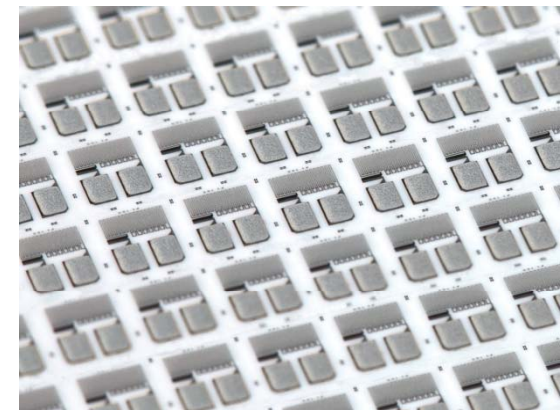
for Applications up to 1100°C

— **Standard Thin Film Elements and Primary Housed Elements**

Pt Temperature Sensors, Pt Heaters, Flow Sensors, Multi Sensor Platforms, Surface Conductive Sensors

— **Custom specific micro-structured thin- and thick-film solutions**

- for applications between -200°C and +1100°C
- for Bio-Tech applications
- transfer from basic research to serial production
- serial production up to several mn. pieces p.a.



Advantages of the Dynamic Oxygen Sensor

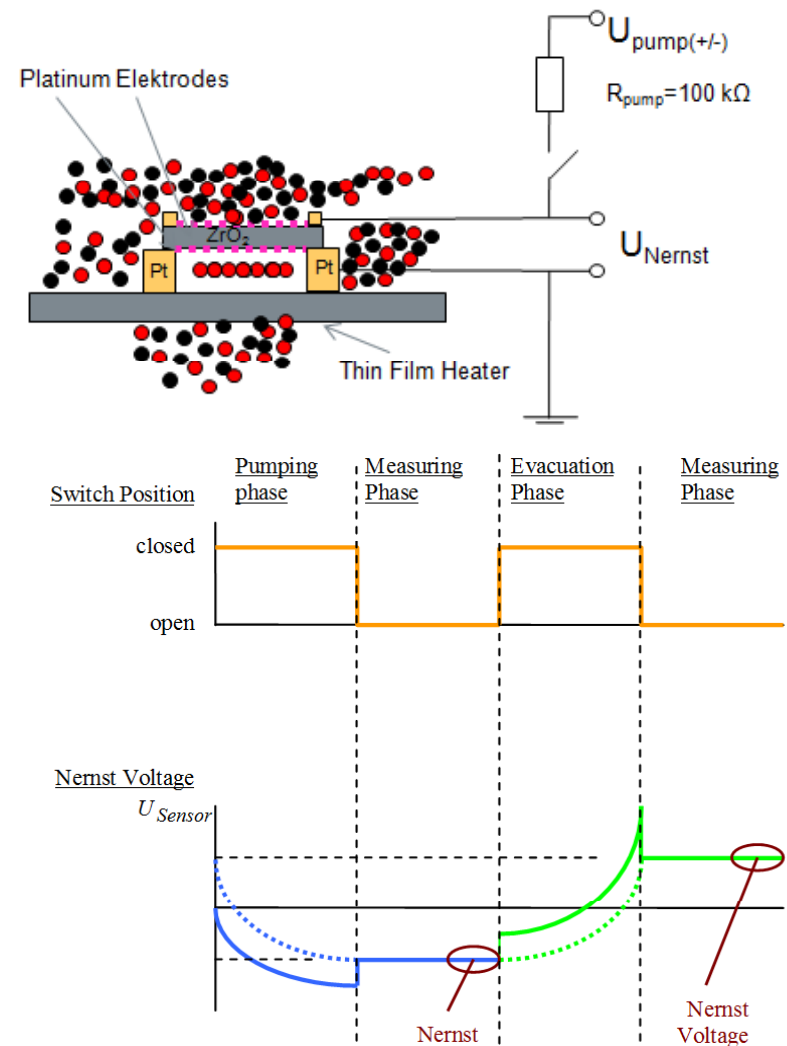
(Developed together with J.Dittrich Elektronik GmbH & Co KG)

- No reference atmosphere needed
- No consumable material
- From 0,5% to 100% O₂
- One point calibration
- Suitable for self-control
- High temperature stability
- Long life-time



Working Principle

- Oxygen ionization at the triple point
- O_2 -ion conductivity of ZrO_2 at high temperatures
- Pumping O_2 -ions through the ZrO_2 layer leads to Nernst-Voltage
- Nernst-Voltage after given pumping time dependant of the O_2 concentration



Contact



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