



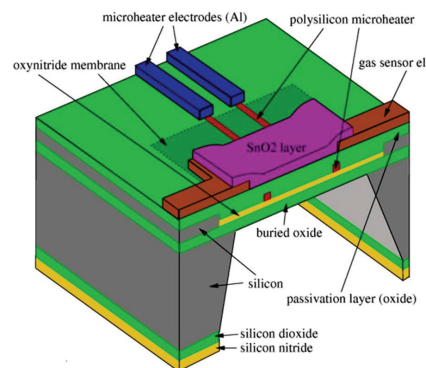
Low-power / High-temperature sensors and MEMS in SOI technology

SENSOI Université catholique de Louvain



BACKGROUND and BASICS

- Low-power and high-temperature sensors and MEMS designs are based on SOI and CMOS compatible materials and processes.
- Markets
 - General public sensors: UV, ozone, CO, e.g. in mobile devices.
 - Transport (automobile, aviation, train): sensors for monitoring their operating conditions, and their actuation, mechanical and electric control systems.
 - Health: sensors for the medical diagnosis (DNA, RNA, bacteria, viruses...).

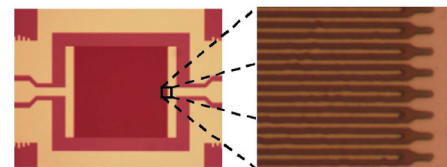
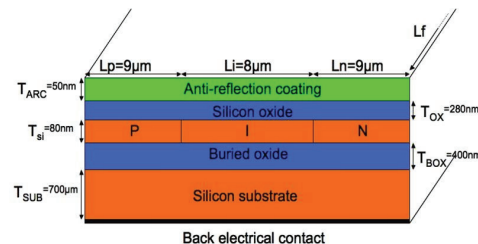


CONCEPT and SOLUTION

- Interdigitated electrodes for C, R or L measurements, very thin membranes and PIN diodes design concepts are used in our fabrication mostly on SOI technology.

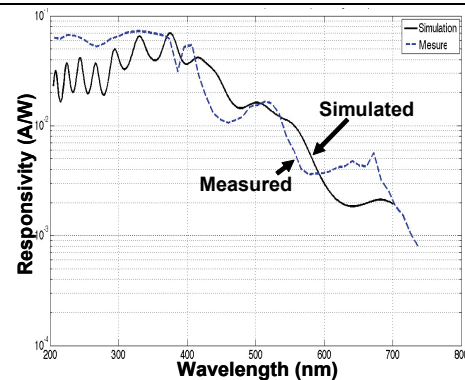
Benefits

- Temperature resistance
- Chemical resistance (metallic oxide passivation)
- Simplified fabrication
- 100% CMOS compatible (allowing IC integration);
- Thin layers that allow higher sensibility
- Low power consumption (wireless system integration)
- Miniaturization

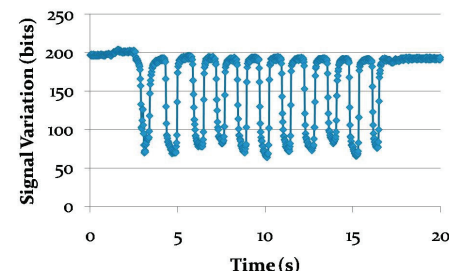


STATUS and OUTLOOK

- R&D projects (stage of design and development): Gas (CO₂, O₂), Bio (Bacteria), Pressure, Liquids (level, ionic concentration, pH).
- Pilot test in laboratory (ready to be tested in the field): Gas (CO, ethanol, ammoniac), UV (DNA concentration, turbidity), Condensation (breathing, humidity), DNA (hybridization), Magnetic field, Temperature (solid-state diode up to 350°C)
- What has to be done to reach successful products: For pilot group, slight adaptations to specific application needs; and Investments for R&D and Product lines.
- Type of partner sought: industry and research organization. And partners for the sensors production.
- The specific area: industry with needs in electronic miniaturized low-power, wireless or high-temperature sensors or MEMS for process control, monitoring, data acquisition (pressure, pH, gas, DNA, humidity, condensation, temperature, etc.)



Flow Through a Nose Tube



Contact

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