

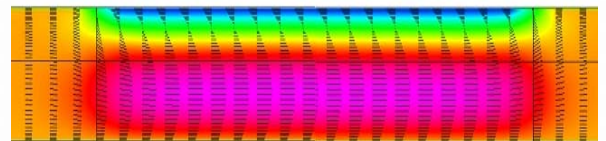
## DfT for Biosensor and for Biosensor Interface

### Objectives

Disposable biosensors require a high level of quality and reliability together with a reduced cost. Production testing needs to be enough efficient to remove all badly processed parts but without a dramatic implication on the cost. The capability of efficient structural test generation for detecting actual defects requires knowledge on anticipated defects, fault modeling and fault simulation, as well as insight where to insert Design-for-Test structures to enable controllability and observability. This means that the fault simulation of the entire multi-domain system is required under realistic defects to be expected in the fluidics as well as in the electrical domain.

### Partners involved

- University of Lancaster, UK
- University of Twente (MESA+) , NL
- University Montpellier II (LIRMM), France



CFD-ACE 3-D velocity simulation of the FlowFET in longitudinal direction.

### Summary of results

- Investigation of capacitive DNA sensors and flow-FETs
- High level modelling,
- Design & Test of an Oscillation Based System Architecture for DNA Sensor Arrays
- VHDL-AMS Fault Simulation for Testing DNA Bio-Sensing Arrays
- Company visits: Lionix, Philips Research Leuven, Micronit, C2V
- Publications: IEEE IMSTW'2005, IEEE Sensors 2005

### Offer to industry

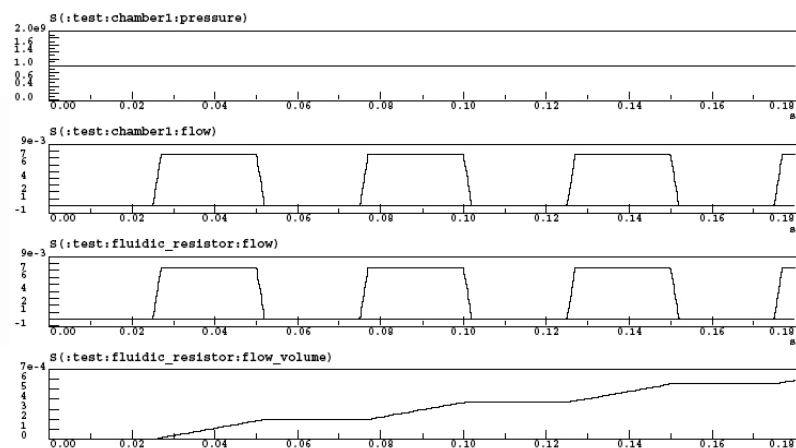
- Consultancy in DfT for Biosensors
- High Level Modelling using VHDL-AMS

### Contact

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### Project status

Phase 2 ongoing



VHDL-AMS simulation of a fluidic transport array (4 x 4), including pressures involved and flow. Last graph shows the accumulation of fluid in a reactor.