Melexis is a dynamic company with 1500 enthusiastic employees, active in 19 countries. Melexis Microelectronic Integrated Systems designs, develops, tests and markets advanced integrated semiconductor devices to meet the world's growing demand for greener and safer cars, smarter appliances and more conscious buildings. We supply unique sensor and driver chips, communicating with analog, digital, wired or wireless interfaces, enhanced with advanced on board micro-controllers or DSP capabilities. Our core experience is derived from over twenty five years supplying leading-edge and innovative ICs to the automotive electronics market, recently expanding in other application fields such as smart appliances and building automation. Our engineers are committed to helping our customers achieve success which is, more than ever, accomplished by targeting designs toward a more sustainable future.

INTERNSHIP **MICRO-ELECTRONICS ENGINEERING – 2021/2022**

Bevaix (Switzerland, NE) – 3 to 5 months – between Oct 2021 and April 2022
Subject: Digital Fault Simulation

Project Description

The safety level required by automotive manufacturers on smart sensors implies building a full self-testing capability within the integrated circuit. The self-testing mechanisms shall cover most of the random fault occurring in the digital part. As an intern at Melexis, you will manage a digital fault simulation campaign on a microcontroller-based circuit. More specifically, you will:

- ☑ Define the fault injection strategy for the Melexis position sensors.
- ☑ Implement the simulation-bench, build models, specify faults, run simulations, and process the results.
- ☑ Automatize and run fault simulations using a state-of-the-art tool and flow.
- ☑ (Propose, implement and test possible new safety mechanisms aiming at improving the fault coverage).

Expected results

- ☑ A documented methodology and flow, based on ISO-26262 requirements and on Synopsys Zoix tool
- ☑ A documented specification of the transient and permanent fault simulation
- ☑ An automatized bench for the Melexis sensor simulation using the Synopsys Zoix tool on Linux
- ☑ A simulation report containing coverage figures and diagnostics ranking
- ☑ A documented proposal for fault coverage optimization (optional)

Requirements

- ☑ Knowledge of micro-processor or micro-controller architecture
- ☑ Knowledge of digital design
- ☑ Knowledge of Linux, Verilog and Python

Offer

Joining Melexis for your internship is the opportunity to build up your know-how in a high-tech, international and dynamic company, benefit from the experience and training of our experts and enjoy the welcoming and friendly atmosphere of our teams. Our Bevaix office is specialized in Hall Sensors and Wireless technology and counts 70 employees.

Can you make the difference?
If you believe you can make the difference, please apply through www.melexis.com/careers