Master thesis/Diploma Thesis/Project Work

Topic: Test Structure Characterization of Novel Dual Channel Tunnel Devices

Dual channel tunnel transistors are an emerging type of electronic devices, where a vertical tunnel current is modulated between two parallel channels in an SOI MOSFET. The device behavior has been predicted by theory. This thesis aims to perform DC and pulsed measurements on existing FDSOI test structures to prove the new device concept experimentally.

- Literature research about dual channel tunneling devices
- Run measurements of dual channel test structures to prove dual channel tunnel behavior
- Data preparation, analysis, evaluation,
- presentation in group meetings

Your qualification:

- Self-organized and conscientious way of working
- High interest in nano-electronic device physics and self-starter mindset
- Basic understanding of semiconductor devices
- Fluent in either English or German
- Ability to work in an international team environment

The following Skills are a plus:

- Experience with electrical characterization

We offer:

- An inspiring international and open atmosphere
- Individual supervision
- Hands-on contribution to nano-electronic research
- Access to various industry-standard characterization and simulation tools
- Knowledge transfer from experts in the field
- Starting date: as soon as possible

Responsible Professor:

- Prof. Dr.-Ing. Thomas Mikolajick

About us: NaMLab gGmbH is a research organization and associated institute of the Technical University Dresden. NaMLab provides industry oriented and basic research in material science for electronic devices. Based on its key expertise in dielectric materials for semiconductor devices NaMLab focuses on the integration and application of materials applied to reconfigurable and energy efficiency devices. NaMLab‘s approach of placing the device rather than the material system itself into the center of its research activities differentiates it from other world class material research activities in the Dresden area.

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