

Junior Scientist (PhD candidate) position at NaMLab Memristor Device Development for Neuro-Transistor Integration

NaMLab is looking for a PhD candidate in the field of device development of memristive and memcapacitive devices. The ultimate goal of this research is the implementation of neuro-transistors that feature dynamic behavior inspired by biological neurons. By utilizing these devices a hybrid Memristor-CMOS architecture for adoption as a versatile non-conventional computation platform will be developed in close collaboration with two project partners at TU-Dresden. The work will cover all aspects from device level to system level in order to gain a comprehensive understanding of the practicality aspects for adopting the aforementioned device concepts in unconventional computing systems. Device manufacturing, electrical characterization and modeling of the electrical behavior are integral parts of the research.

Responsibilities:

- Development and optimization of memristor and memcapacitor devices
- Integration of the devices into cross-bar structures and co-integration with NFET devices from the project partner IHM
- Electrical characterization and modeling of the manufactured devices
- Communication with project partners and reporting
- Concept development and basic circuit design

Your profile:

- M.Sc. / M.Eng. in electrical engineering / nanotechnology / physics
- Well-grounded knowledge on semiconductor manufacturing and device physics
- Good technical comprehension and creativity
- Ability to work in a team environment

The following skills are a plus:

- Expertise in electrical characterization
- Experience in working in a clean room environment
- Basic knowledge in analog circuit design

We offer:

- Access to various high-end fabrication and characterization tools
- Individual supervision and possibility to adjust the thesis focus
- Knowledge transfer from experts in the field
- Working in an established team environment
- The salary will be based on German research organization standards.

Check also our video on research on capacitors at Namlab:

https://www.youtube.com/watch?v=_e8pqf5RTqw

We value and encourage the diversity of our employee skills and therefore welcome all applications - regardless of age, gender, nationality, ethnic and social origin, religion, ideology, disability, sexual orientation and identity.

The position is initially limited to 3 years. We offer you a long-term perspective with a versatile and interesting field of activity in microelectronics research.

For further information please contact:

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Please send your application to: jobs@namlab.com