

## **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 this devices a hybrid Memristor-CMOS architecture for adoption as 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 part 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 / physics
- Well-grounded knowledge on semiconductor manufacturing and device physics
- Basic knowledge in analog circuit design
- 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

### **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.

### **Period:**

- Planned starting date: January 2024
- Duration: 3 years

For further information please contact: [jobs\(at\)namlab.com](mailto:jobs(at)namlab.com)

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