



## Doctoral Thesis: Characterization and Modelling of Aging Behavior of Power Semiconductor Devices (f/m/div)\*

### Job description

The industrial doctorate at Infineon: Pursue a doctoral degree at a university and gain professional experience simultaneously - an ideal start for your career. Advance your research with us and profit from our vast network of doctoral candidates and the expertise of a university. Mentorship is handled by both professors and dedicated Infineon employees. As semiconductor devices are used in a wide variety of applications with different voltage and temperature conditions, certain conditions are leading to a drift of their electrical parameters, which in turn can lead to the fail of the entire circuit. It is important to predict such drifts over lifetime of the product. We are offering a doctoral thesis dealing with experimental investigation of novel aging mechanisms of power semiconductor devices in future integrated technologies. Based on electrical measurements physical aging models for the device behavior have to be developed and validated. The thesis will be written in cooperation with Technical University Chemnitz and under the supervision of Professor Thomas Basler.

The tasks within the thesis will consist of:

- **Extension of an existing measuring station** in order to perform high voltage and dynamic measurements
- **Execution of electrical device characterization** for various load conditions
- **Development of physical aging models** for different degradation mechanism for future power semiconductor devices by means of electrical, physical and device simulation methods
- **Validation of aging models** by modeling the characteristics of different novel integrated technologies

The learnings out of the thesis will be/lead to

- Deep insights into the physical and electrical behavior of power semiconductor devices
- Know-how and experience in the field of reliability and quality
- Insights in a global semiconductor company

### Profile

A doctoral student is a research enthusiast,  
> whose interests are scientific research combined with the passion for Infineon's innovative products and applications.

### At a glance

Location: **Munich (Germany)**  
Job ID: **346317**  
Start date: **as soon as possible**  
Entry level: **0-1 year**  
Type: **Full time**  
Contract: **Temporary**

Apply to this position online by following the URL and entering the Job ID in our job search:

Job ID: **346317**  
[www.infineon.com/jobs](http://www.infineon.com/jobs)

### Contact

**Silke Jaschik**  
Student Attraction Manager



- › who enjoys working in an industrial environment in combination with an Infineon partner university.
- › who appreciates open communication and the contribution of an international environment.
- › and is thus an excellent candidate for a further academic or industrial career after completion of their thesis.

As the ideal candidate you:

- Have a degree in the field of **Microelectronics, Electrical Engineering, Physics** or something similar
- Possess **knowledge of semiconductor devices and circuit technology**
- Already gained **experience in electrical measurement techniques**
- Are familiar with **programming languages** like LabView and C++
- Have **very good English language skills** and are **proficient in German**

## Benefits

- **Munich:** Coaching, mentoring networking possibilities; Wide range of training offers & planning of career development; International assignments; Different career paths: Project Management, Technical Ladder, Management & Individual Contributor; Flexible working conditions; Home office options; Part-time work possible (also during parental leave); Sabbatical; On-site creche and kindergarden with 120 spots, open until 6pm; Holiday child care; On-site social counselling and works doctor; Health promotion programs; On-site gym, jogging paths, beachvolleyball, tennis & soccer court; On-site canteen; Private insurance offers; Wage payment in case of sick leave; Corporate pension benefits; Flexible transition into retirement ; Performance bonus; Reduced price for public transport and very own S-Bahn station; Access for wheelchairs

## Why Us

**Part of your life. Part of tomorrow.**

We make life easier, safer and greener – with technology that achieves more, consumes less and is accessible to everyone. Microelectronics from Infineon is the key to a better future. Efficient use of energy, environmentally-friendly mobility and security in a connected world – we solve some of the most critical challenges that our society faces while taking a conscientious approach to the use of natural resources.

Infineon´s **Quality Management** department acts proactively to satisfy the needs of our customers to increase their success and to ensure 'best in class' product quality. Internally the department develops a living quality culture at all levels within the different divisions and at our partners.

*\* The term gender in the sense of the General Equal Treatment Act (GETA) or other national legislation refers to the biological assignment to a gender group. At Infineon we are proud to embrace (gender) diversity, including female, male and diverse.*

