

Driving decarbonization and digitalization. Together.



Doctoral Thesis: Investigation, optimization and application of capacitive micromachined ultrasonic transducers (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. We are offering a doctoral thesis dealing with the development and application of CMUT devices. You will get acquainted with the theoretical concepts of such devices in sending and receiving mode. Simulations will guide the way towards optimized geometries and to a good understanding of the interaction with the environment. On this basis you will fabricate samples, based on our well-established pressure sensor MEMS-technology. The goal is to maximize the device performance, produce a specific prototype and characterize it in one of our target applications. The thesis will be written in cooperation with the TU Bergakademie Freiberg under the supervision of Prof. Dr. Christian Kupsch.

The tasks within the thesis will consist of:

- Study the theory of oscillating polysilicon membranes interacting with the environment
- Simulate and optimize send- and receive- systems.
- Fabricate the simulated structures and verify the hardware in the ultrasonic lab.
- Design prototypes and test them in one of our target applications (e.g. ultrasonic imager)

Profile

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

At a glance

Location: **Dresden (Germany)**
Job ID: **HRC0779322**
Start date: **Jul 01, 2024**
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. Alternatively, you can also scan the QR code with your smartphone:

Job ID: **HRC0779322**
www.infineon.com/jobs



Contact

Antonie Stredak



- Are **eligible for full-time PhD studies** and have a master's degree in physics, mechanical or electrical or microsystems engineering, physics or mechanical engineering.
- Are a highly motivated person striving for **in-depth understanding of silicon devices** based on a combination of theory, experiment and application.
- Have a basic know-how in **semiconductor technology** and **devices** as well as **digital signal processing**.
- Are a **team player**, well organized and ready to work with a variety of internal and external partners.
- Have good written and spoken language skills in **German and English**.

Know-how in the following topics is preferable - but not mandatory

- Background in MEMS and acoustics, especially ultrasound
- Programming skills: ANSYS, COMSOL, Python/Matlab

Benefits

- **Dresden:** 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 in office jobs; Home Office possibilities; Part-time work possible (also during parental leave); Spots in local kindergarden; On-site social counselling and works doctor; Health promotion programs; Fitness Room; 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, car sharing, charging station for e-cars and e-bikes; Accessibility, access for wheelchairs; Possibility to work remotely from abroad (EU)

Why Us

Driving decarbonization and digitalization. Together.

Infineon designs, develops, manufactures, and markets a broad range of semiconductors and semiconductor-based solutions, focusing on key markets in the automotive, industrial, and consumer sectors. Its products range from standard components to special components for digital, analog, and mixed-signal applications to customer-specific solutions together with the appropriate software.

– At Infineon Dresden we produce power semiconductor devices –

Every week thousands of silicon wafers pass through our highly complex production system. We also take innovation one step further and think ahead in areas such as automation and production concepts, business process and maintenance.

In Dresden we value work-life balance, not only with our flexible working time but also with our parent friendly office.

Infineon Technologies Dresden GmbH & Co. KG is one of the largest production sites of Infineon Technologies AG with more than 3,200 employees. Every week thousands of silicon wafers pass through the highly complex production system in our high end clean room. The site in Dresden was one of the world's first high-volume production sites for power semiconductor devices on 300mm wafers.

For more information about our site in Dresden please check out the following link:

www.infineon.com/cms/dresden/en/

We are on a journey to create the best Infineon for everyone.

This means we embrace diversity and inclusion and welcome everyone for who they are. At Infineon, we offer a working environment characterized by trust, openness, respect and tolerance and are committed to give all applicants and employees equal opportunities. We base our recruiting decisions on the applicant's experience and skills.

We look forward to receiving your resume, even if you do not entirely meet all the requirements of the job posting.



Please let your recruiter know if they need to pay special attention to something in order to enable your participation in the interview process.
[Click here](#) for more information about Diversity & Inclusion at Infineon.

