

The Fraunhofer Institute for Integrated Circuits IIS, one of more than 60 application-oriented institutes that make up the Fraunhofer-Gesellschaft research network, is focused on providing the technological foundation for a wide range of innovative products.

The Power Efficient Systems department has an immediate opening within the Integrated Energy Supply group for a

Research Intern (f/m)

Topic: Development of regulation and control software for an electrodynamic shaker

For our research and development activities in the area of vibration-based energy harvesting, we utilize an electrodynamic shaker. The software that regulates the shaker currently lacks support for complex signal forms and has limited accuracy. For this reason a dSpace DS1104 controller was acquired to enhance the functionality of the electrodynamic shaker.

The system uses an accelerometer to detect the vibration. The data is then read by the dSpace system. The vibrations can be regulated by adjusting the output signal of the power amplifier. This thesis will cover the development of the electrodynamic shaker control software and the corresponding regulation system using MATLAB/Simulink.

Your responsibilities

- Commissioning of the dSpace system and the electrodynamic shaker
- Development of the software for controlling the frequency, acceleration, speed and lateral deflection
- Output of signal forms including sine, triangular, rectangular and noise
- Enhancement of the functionality to include display/playback of previously recorded acceleration data

Your profile

- Currently pursuing a degree in electronics engineering, mechatronics, physics or a similar field
- Hands-on experience with measurement technology and laboratory equipment
- Controller system know-how (P, I, D, PI and PID)
- Experience with MATLAB and Simulink

You also have the opportunity to write your thesis in the above-mentioned field while working at Fraunhofer IIS. This is assigned and completed in accordance with the guidelines of your university. Please consult the professor who is in the best position to monitor and supervise your thesis activities.

At Fraunhofer IIS, you will enjoy an open and friendly work environment and the latitude to develop your interests and skills.

Have we piqued your interest?

If so, we look forward to hearing from you. Send your complete application under reference code 789439 and don't forget to tell us how you learned about this opportunity:

Fraunhofer Institute for Integrated Circuits IIS

HR Recruiting - 789439

Am Wolfsmantel 33

91058 Erlangen – Germany

**Please submit your application in PDF format via e-mail:
personalmarketing@iis.fraunhofer.de**