

Invitation to Project Seminar Measurement,
Sensor and Embedded Systems

Energy-efficient Electronic Systems for the Tactile Internet

Abstract:

The Tactile Internet presents unique requirements especially for electronic systems. Not only do they need to be as small as possible to enable data gathering on the human body, they also have to be ultra-low latency. To achieve this, a collaboration of several research groups within the CeTI cluster of excellence combined their expertise: analog and digital integrated circuit design, electronic packaging and textile manufacturing. This combination not only led to great results within the respective domains but also created new solutions at the interfaces, making the result more than the sum of its pieces.

I am going to present some results of the first research phase with some technical details, show some of the application areas within a unique, interdisciplinary ecosystem and give an outlook towards the next steps such as “zero energy” sensor nodes and the trend towards circular economy.

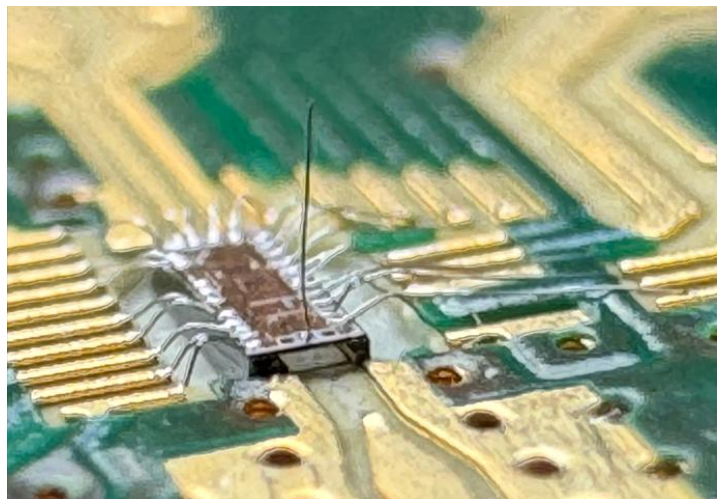


Figure: Left: Sensor glove with fully integrated textile sensors and processing unit Right: 60GHz receiver ASIC with bondwire antenna [1] © IEEE

Speaker: Dr.-Ing. Jerns Wagner, Chair of Circuit Design and Network Theory and Centre for the Tactile Internet with Human-in-the-Loop (CeTI), TU Dresden, Dresden, Germany

Place: SPQ-0302

Date: 13.11.2025, 2.30 pm

Audience: All interested members of TUBAF

[1] H. P. E. Morath, A. M. Castro-Chong, F. Protze, J. Wagner, Y. Vaynzof, F. Ellinger, 'Advancing Wireless Robotic Skin: A 60 GHz Receiver with Bondwire Antenna supplied by a Perovskite Solar Cell', IEEE ICECER, 2024, Gaborone