

Flexible Sensor Development for Home-Based Spinal Monitoring

Description

Flexible thin-film sensors and wearable systems are increasingly used in medical monitoring due to their lightweight, flexible, and skin-conformal properties. In particular, they offer strong potential for monitoring back and spinal posture during daily life and home-based therapy. This project focuses on the design and fabrication of flexible thin-film sensors for back/spinal monitoring in home rehabilitation and training. The student will be involved in sensor design and fabrication, electrical and mechanical characterization, and the development of the associated hardware and software platform.

Fields of activity

- Design and optimize flexible sensor structures and PCB circuits
- Support sensor fabrication, process improvement, and performance characterization
- Develop the hardware/software interface, including communication, data processing, and visualization
- Contribute to AI-based data analysis and model development

Requirements

- Basic skills in CAD design and laboratory work, with strong interest in experimental research
- Background in mechatronics, electronics, communication systems, or software development is beneficial
- Familiarity with KiCad, PSoC Creator, Python, or microcontroller programming is an advantage
- Strong self-learning ability, motivation, and basic communication skills in English and German

Start: By arrangement
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