

Thesis Master

Wearables and Smart Textiles



Our research group runs several long term projects in the field of smart sensors and wearables for applications in health and well-being. We offer different master thesis topics according to your special interests in the field.

Examples:

- (1) Thin film technology in the cleanroom of the UAS Kaiserslautern: The above picture at the very left shows a stack of polyimide-metal-polyimide with total thickness of only 4 μm . The process requires continuous improvements in terms of cleanroom processes, material selection and electrical testing.
- (2) Sensor systems: We develop smart sensors systems which need to fulfill certain electrical and mechanical requirements. Reliable mechanical and electrical interconnections between ultra-thin structures and medium sized items are challenging development tasks.
- (3) Sensor systems with wireless communication via Bluetooth or NFC are developed but need further improvements. Design and building of the thin film structure, the SMT-mounting of electronic components as well as the programming the NFC-computer interfaces are different tasks for students with appropriate background and competences (helpful: LabVIEW, Matlab, C, or C++).
- (4) One important application of such sensor systems is measuring the moisture of apparel. Different work packages are open to build a reliable system.
- (5) Another important use of such sensors is skin moisture determination. Picture at the very right shows first measurements of moisture content of dry and wetted skin. This will require different tasks as mechanical design, electrical interconnects, test trials with subjects and evaluation.

You should bring:

- Good knowledge of electrical engineering or related and further competences according to the workpackage of interest
- Reliable, independent and solution-oriented work
- Good command of English

That's what we offer:

- Exciting work and a friendly working environment
- Supervision and support for the final thesis
- Personal challenges and further development

If you are interested, please contact:

Antoni.Picard@hs-kl.de, UAS Kaiserslautern, Campus Zweibrücken