

## SensTex - Thermal moisture sensor for application in thin, textile-like layers

The determination of moisture and temperature in thin textile-like layers is interesting for a wide range of applications. Especially for body-worn applications, the so-called wearables, a measurement method with the following characteristics is needed:

- resistant to fluctuations in salinity
- insensitive to stray electric fields or other interferences
- detection area can be easily limited in space
- simple application
- low energy consumption
- Wireless signal transfer such as Bluetooth or Near Field Communication (NFC)
- Low-cost manufacturing possibility

The patented THMS measuring method (for Transient Heat Moisture Sensing) is based on a thermal process and meets all the criteria mentioned. These applications range from low-power and low-cost NFC-based sensor tags for measuring wound secretions in dressing materials to fitness tracker-like measurement systems for measuring sweat or the sweat rate in garments.



Figure 1: NFC-THMS sensor tag  
on patch material.



Figure 2:  
BLE-THMS Smart Sweatband.

**Projectduration:**

09/2019 – 05/2022

**Project management:**

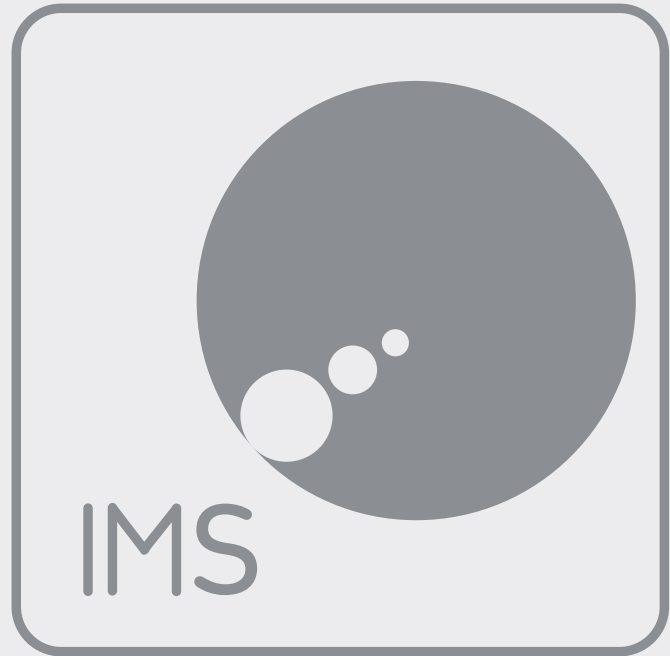
Prof. Dr. Antoni Picard  
Hochschule Kaiserslautern  
University of Applied Sciences  
Amerikastrasse 1  
66482 Zweibrücken  
Germany

phone: +49 631/3724-5414

e-mail: Antoni.Picard@hs-kl.de

**Principal Investigators:**

Dr. David Schönfisch (HS KL)



**Funding:**

Federal Ministry for Economic Affairs and Climate Action