sendance

permeable electronics

electronics closer to life

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Management/Team

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MedTech Consulting,
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Professor for Prosthetics,
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Prof. Martin Kaltenbrunner
Full Professor JKU
LIT Soft Materials Lab

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+ LIT Soft Materials Lab Spin-off
+ project started end of 2019
+ 11/2020: Edison 2020 in Gold
+ 03/2021: tech2b-ScaleUp and GmbH founded
+ First successful development projects
+ Funded by AWS PreSeed and FFG Basisprogramm

Technology & Product Vision

sendance-grid

+ soft, conformable and permeable sensor grids

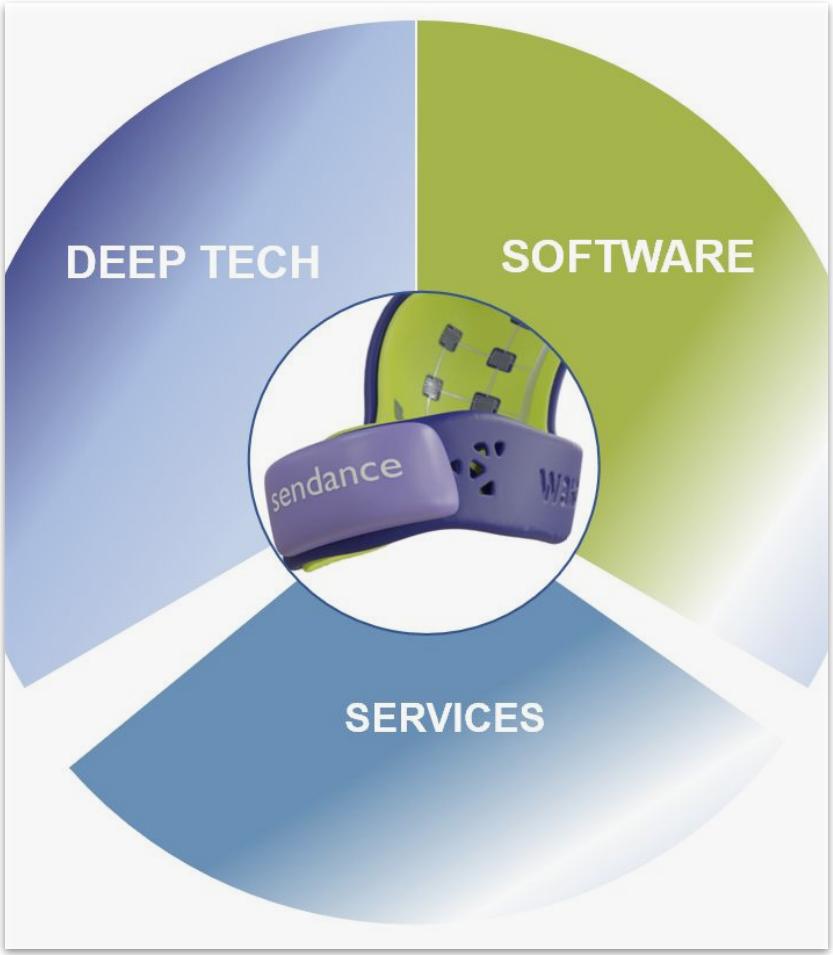
  → seamless integration in surfaces of objects

+ low-cost digital manufacturing solution

sendance-cloud

+ solution for data management and visualization

+ digital base for future services



sendance-grid as technology platform

+ brings sensors close to the skin
+ adaptable, soft, conformable, permeable
+ measures pressure, temperature, touch, pH...
+ opens up numerous applications

Patents

+ patent on ***sendance-grids***

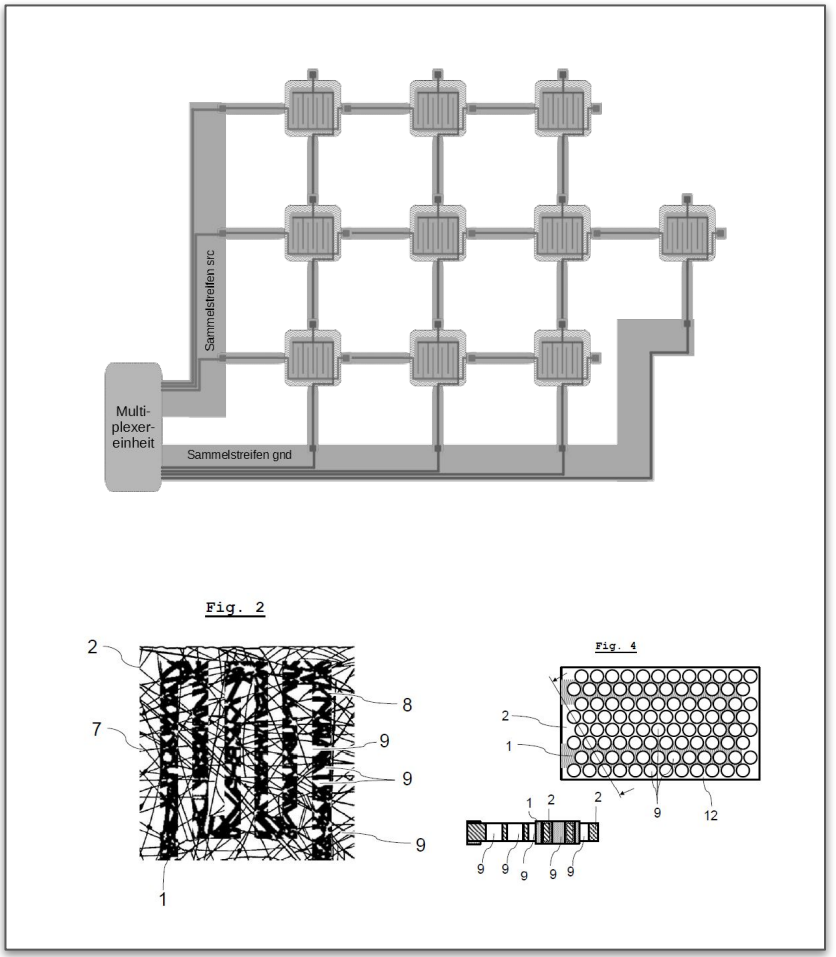
  → covers sensor grid on free-formed body

  → filed 06/2021

+ patent on permeable electronics

  → covers electronics on permeable substrates

  → license agreement with JKU Linz



Pilot application

Custom orthotic devices

+ still usually hand-crafted
+ transformation to digital manufacturing under way

  → 3d-Scan and 3d-Print
+ increased centralization and standardization
+ verification of safety and functionality critical

Pilot application

Permanent monitoring of fit

+ improves the fitting process of the orthotic device

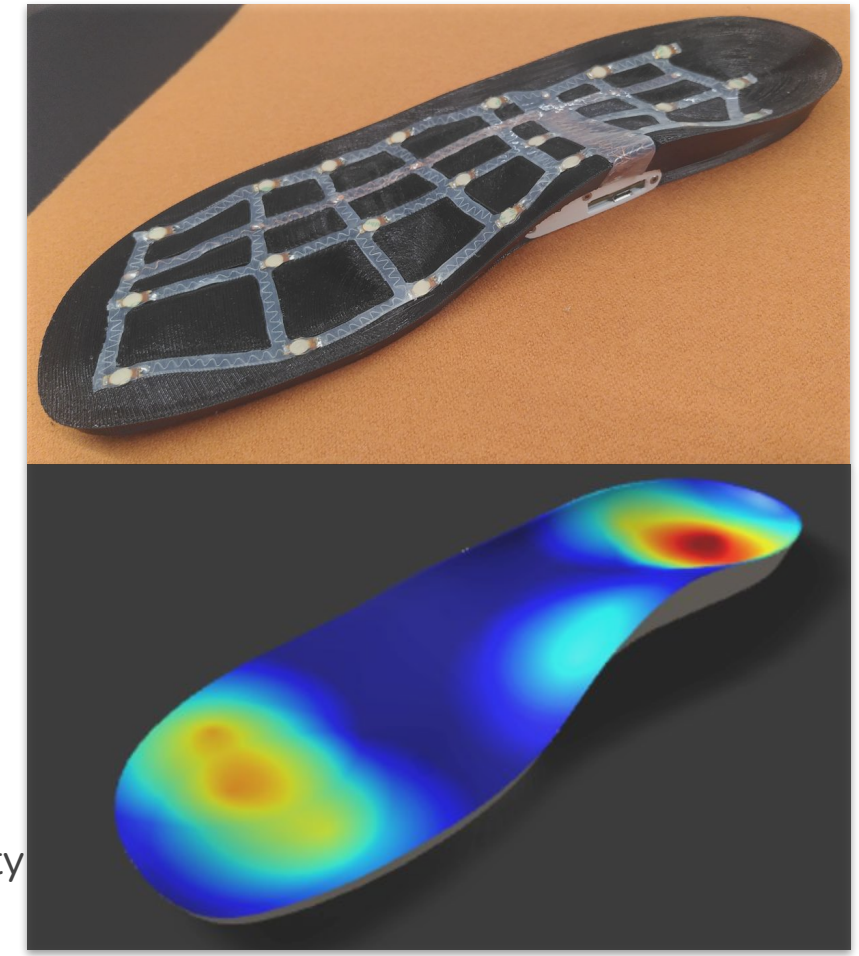
  → increased productivity of orthotic technician

  → improves communication and adherence

+ avoids pressure marks and verifies functionality

  → reduces costs for reworking

  → necessary as verification of safety and functionality



Future application: interactive furniture

Sensors in varnish layer

+ permeable touch sensors and leads

  → interactive furniture

  → perfect to clean/disinfect

+ easy integration in manufacturing process

  → no drilling, cutting or milling

  → connectors at hidden positions

Future application: feeling mattresses and cushions

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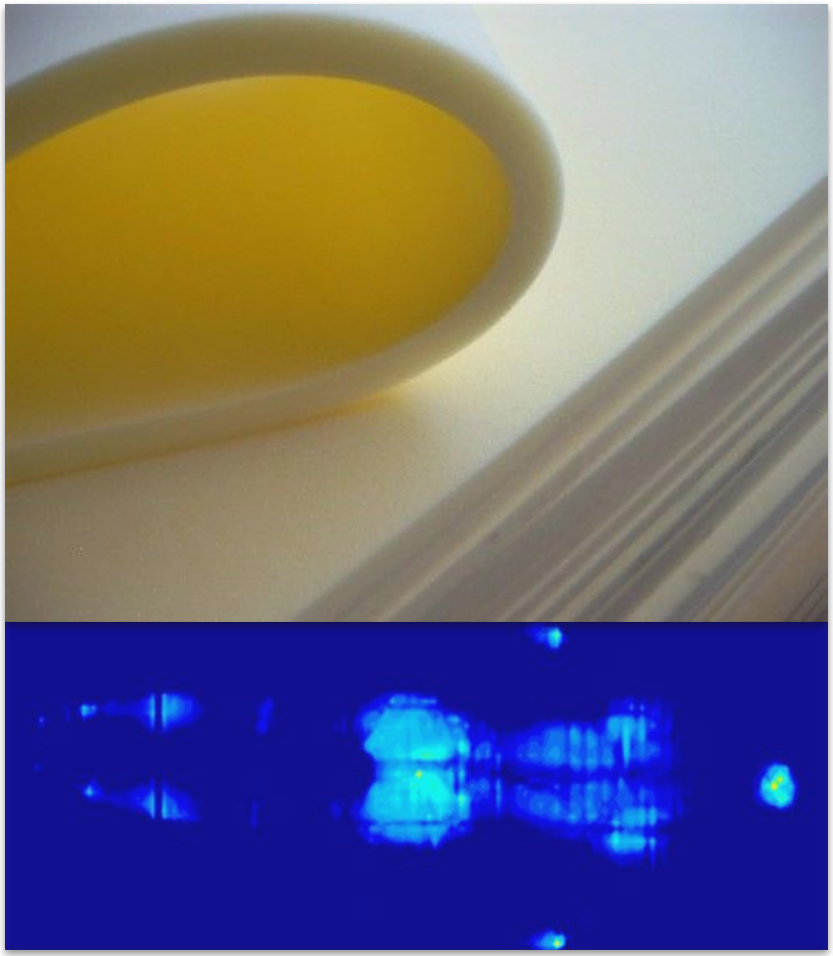
Sensors in polymer foam/rubber

+ soft and conformable force sensors and leads

  → decubitus prophylaxis in mattresses, wheelchairs...

  → posture analysis

  → humidity sensors for incontinence monitoring



Future Application: digitized plastic products

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Polymer products with integrated electronics

+ permeable substrates for electronics

  → seamless integration in casting/moulding

  → seamless integration in fibre composites

+ easy integration of electronics

  → sensors, LEDs, leads…

  → in surface or volume

Future application: intelligent diapers/wound dressings

disposable sensors in absorbent materials

+ absorbent layer in diapers

  → detect urine

  → analyze pH to detect urinary tract infection

+ wound dressings

  → measure temperature, humidity, pH

  → support for home care

Vision

The vision of ***sendance***

+ integrate sensors close to the human body
+ increase life quality of elder people
+ decubitus, chronic wounds, implants
+ “soft” electronics in service of better health
+ co-existence nature - human - technology