

WEARABLE TECHNOLOGY

SMART PRINTED SENSORS MONITOR MOVEMENT SEQUENCES

Wearable technology has caught on to progress health and fitness. Accessories like smart bracelets or smart watches are trending as »personal health coaches«, prompting the bearer to provide for sufficient sleep and activity or a healthy diet. Sensor-embedded textile solutions are a far more challenging approach. Often, function will override appearance. A novel transparent sensor material developed by Fraunhofer ISC enables movement measuring sensors to be printed onto textiles. The new materials might offer a cost-efficient alternative with the extra benefit of more adjustable appearance options.

Prototype shirt with new sensor technology

- Designed to monitor movement sequences
- Novel piezoelectric polymer sensor printing pastes (Fraunhofer ISC)
- New evaluation electronics (Fraunhofer ISIT)

Advantages of new polymer sensor material

- Upscale for mass production possible: simple application on textiles via screen printing
- Free textile design with flexible and transparent sensor material
- Indiscernible integration into textiles: sensors much thinner than human hair
- No power source required: sensors harvest energy
- Free from toxic solvents

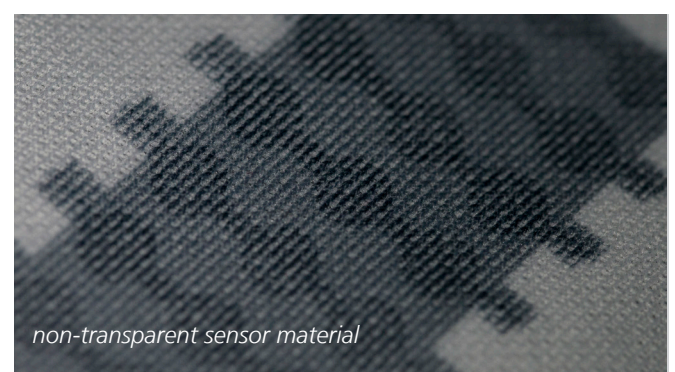
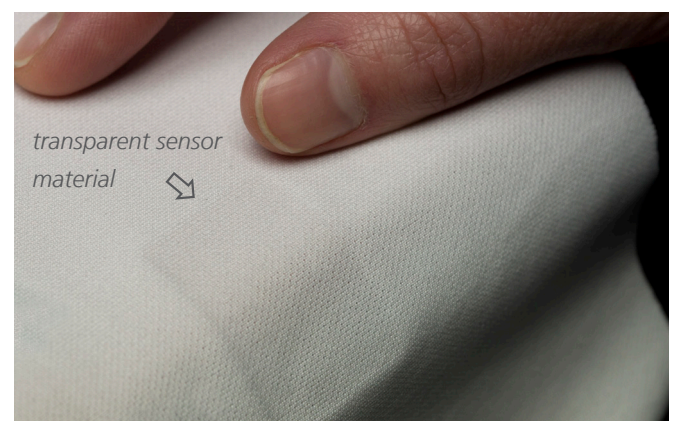
Multifunctional use

- Touch or motion sensors measuring pressure and deformation
- Temperature deviations sensitivity for monitoring temperature changes
- Proximity sensors for monitoring non-contact interaction

Possible applications

- For eldercare: monitoring of everyday life movement sequences
- For in-patients: monitoring body signals like temperature or breathing
- Supporting the health care system

We offer feasibility studies to validate the technology for customer applications and look for partners for further development. Contact us!



Fraunhofer Institute for Silicate Research ISC

Neunerplatz 2
97082 Würzburg
Germany

Gerhard Domann
Phone +49 931 4100-551
gerhard.domann@isc.fraunhofer.de

www.isc.fraunhofer.de