Sächsisches Textilforschungsinstitut e.V.

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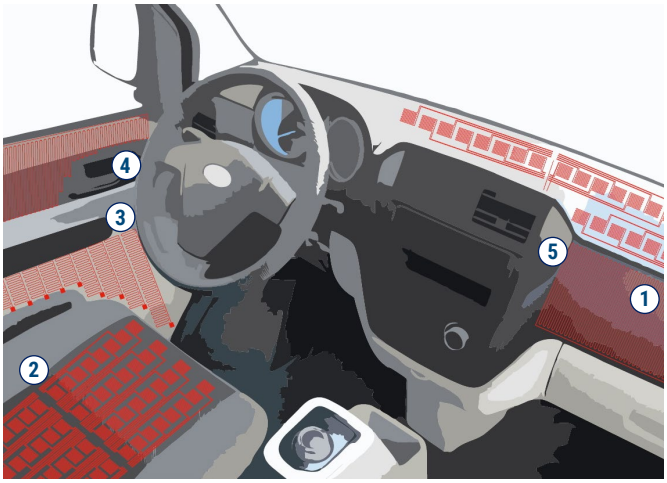
INSIDE – Individually controllable seat and interior heating using digital manufacturing processes in order to develop an efficient, zone-specific heating system for future-oriented electric mobility

Problem / Motivation

- Conventional heating systems in electric vehicles substituted with printed surface and point heating elements being individually controllable and selectively adjustable
- Direct interior heating through printed heating elements increases heating performance and reduces loss of range in electric vehicles
- Objectives: weight reduction, increased efficiency, and energy savings in comparison to conventional heating systems

Solution

- Production of customised heating conductor structures by means of inkjet and laser technology on textile substrates and lightweight components
- Developing the selective control of the heating conductor systems
- Scaling the process for industrial production
- Integration and validation of the heating conductor systems in selected test vehicles



Visualisation of integration possibilities in a car cockpit (1. Dashboard, 2. Driver's seat, 3. Driver's door, 4. Window area, 5. Storage compartments)

Project Launch

07/2023

Project Partner

Fraunhofer Institute for Electronic Nano Systems ENAS

University of Technology Chemnitz, Department Sports Equipment and Technology

C-marx GmbH

ARI Motors GmbH

Hamamatsu Photonics Germany GmbH (affiliated partner)

Zschimmer & Schwarz Mohsdorf GmbH & Co. KG (affiliated partner)

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