

## Intelligent tire: Micro production technology meets rubber



### Auf einen Blick

- "Autonomous driving" – Future goal is achieved by sensors integrated in tires
- New fields of application for micro production technology
- Coating of rubber has been barely researched so far

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**IMPT | Novel sensor concepts are supposed to facilitate strain and temperature measurement in future vehicle tires. In cooperation with Continental Reifen GmbH, IMPT is developing production concepts to implement micro components into rubber, which is a quite unusual substrate material.**

In the road traffic of tomorrow, innovative sensor concepts are expected to provide for an autonomous, efficient and safe driving of cars. The Institute of Micro Production Technology (IMPT) of Leibniz Universität Hannover is also doing research in this particular field. Together with Continental Reifen GmbH, the researchers are developing novel sensor concepts which combine micro production technology and tire design. The result: an "intelligent tire" with integrated strain and temperature sensors.

Thin-film technology is a key area in micro production technology, where rubber is a challenging substrate material. Normally, thin-film structures are formed on foils. However, when vulcanizing these foil strips onto a rubber matrix, they produce a defect in the tire and come off again.

A promising approach is to coat tires with metal, for example gold (see photo), as a basis for the design of micro systems.

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