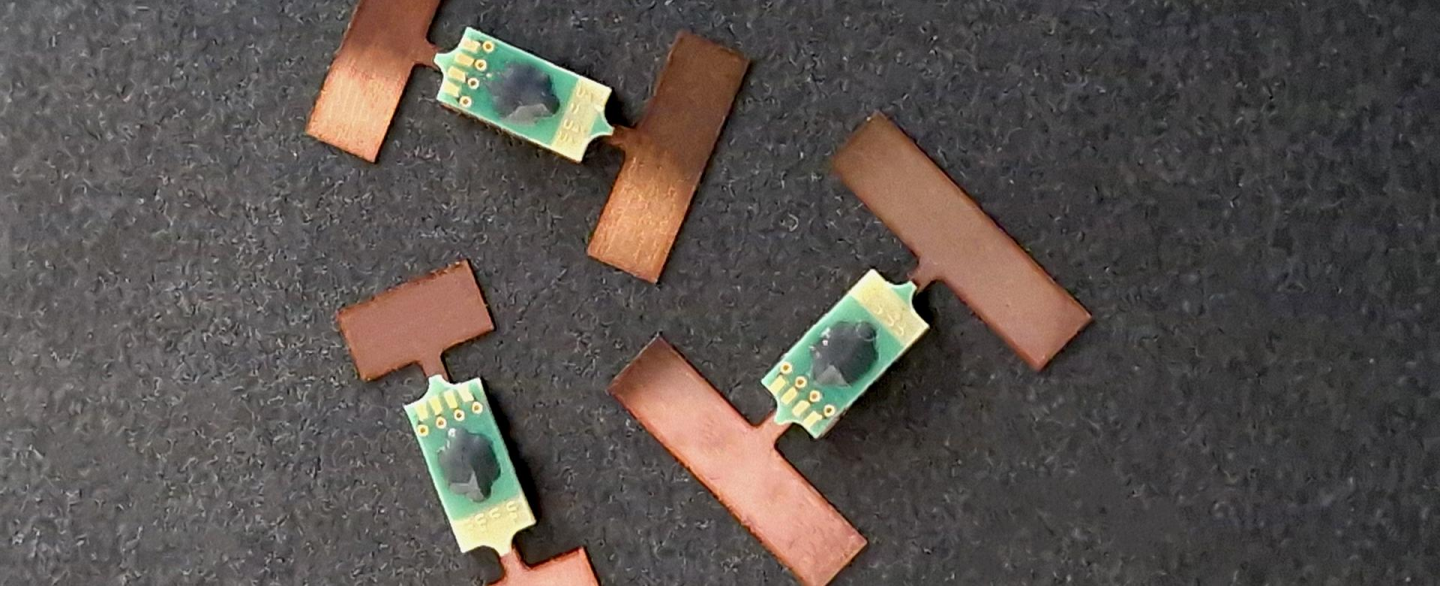

Sensors for monitoring the belt tension (ZugKraftSensor)

A sensor for determining the belt tension in transmission belts of drive systems based on Si-DMS was developed as part of the project for the precise planning of maintenance intervals, the early detection of material fatigue and the avoidance of unplanned downtimes (predictive maintenance).

As part of the “ZugKraftSensor” funding project, the CiS Research Institute designed and implemented an innovative connection technology that integrates these sensors on/in these flexible belts that are subject to high mechanical loads. A direct coupling was realized for the exact and reliable detection of force changes.

CHARACTERISTICS

- Sensor system consisting of silicon-based strain sensors
- Integration of the sensor system into the transmission belt, with direct mechanical connection of the sensor to the transmission belt
- Wired contacting and signal output
- Integrated mechanical protection of the sensors against external manipulation
- Application range temperature -10°C to +80°C
- Max. force up to approx. 40 kN (load capacity of the belts designed for up to 35.7 kN)
- Measuring span of the sensor signal 20 mV/V
- Measurement deviation 1-2% FS at T = 25°C
- Measurement deviation 2-5% FS at T = -10°C to +80°C
- Preferred application is the linear actuator

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