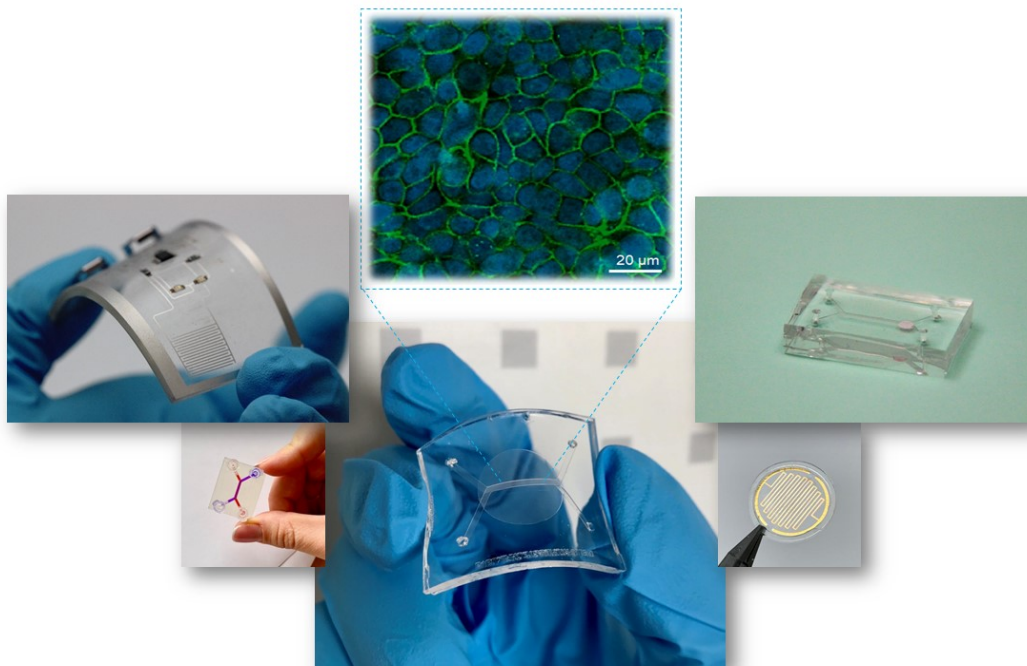


## Biosensors - Customized microfluidic chips with integrated sensors



One of the promising research directions for biopolymer-based applications is lab-on-chip as a microfluidic platform for cell culture purposes. Advantage of such a platform over the classical approach using a Petri dish is the possibility to emulate a mechanical compliant microfluidic environment in a well-controlled and reproducible manner. However, measurements of physical or biochemical parameters in close proximity to the cells (in situ) are desirable to characterize tissue functionality and cell response e.g., in the presence of drugs. Therefore, the integration of sensors into such platforms is essential for cell culture. Corresponding solutions for tailored approaches for tissue engineering and single cell experiments will be presented.

### Kontakt

Otto-von-Guericke-Universität Magdeburg  
Lehrstuhl Messtechnik  
Fakultät Elektrotechnik und Informationstechnik  
Prof. Ulrike Steinmann  
Tel.: +49 (0) 391 67 58309  
✉ [ulrike.steinmann@ovgu.de](mailto:ulrike.steinmann@ovgu.de)  
> <https://www.messtechnik.ovgu.de/>

ifak - Institut für Automation und Kommunikation  
Geschäftsfeld Messtechnik & Leistungselektronik  
Sebastian Wöckel  
Tel.: +49 391 9901430  
✉ [sebastian.woeckel@ifak.eu](mailto:sebastian.woeckel@ifak.eu)  
> <https://www.ifak.eu/de>

#### Vorteile / Advantages

- ▶ flexible sensors
- ▶ biocompatible solutions
- ▶ animal testing alternative
- ▶  $\mu\text{m}$ -thin membranes

#### Anwendungsbereiche / range of application

- ▶ Lab-on-Chip Systems
- ▶ tissue engineering
- ▶ wearable for health monitoring
- ▶ biomedical engineering