

Highly individualized function integration
for microfluidic chips

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Inkjet printing of functional materials

Drops on the way to analysis.

We are currently developing the miniaturized laboratory so that health care and other life sciences will be faster, more accurate, and cheaper for everyone. Our prototype shows how the fluid sample can be transported from one detector to the next within the printed laboratory. The aim is to release the functionality of a biochemical laboratory in the size of a chip card.



Inkjet printing for function integration in microfluidic chips

We develop highly individualized feature integrations for microfluidic chips using inkjet printing technology. The combination of our experience and the passion with which we challenge technological boundaries allows us to develop exceptional, customized multilayer and multi-material functionalities on different substrates.

Drop-on-demand inkjet printing

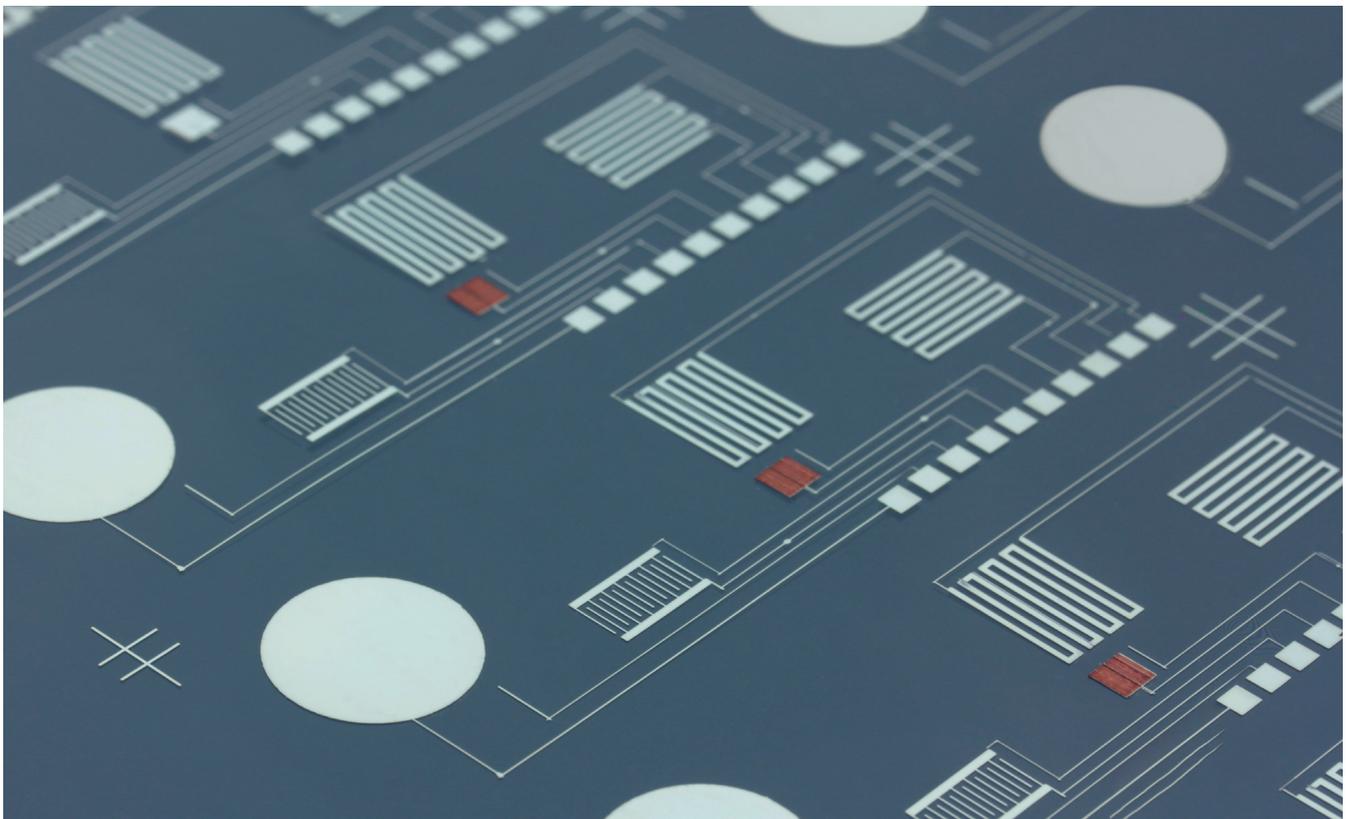
- Cost-effective material deposition
- Digital printing technique
 - Material saving
 - Simple design change
 - Ability for rapid prototyping
- Mask-free, non-contact deposition
- Deposition at normal atmosphere
- Processing at room temperature
- Compatible with glass-, polymer-, and paper substrates

Printable materials & applications

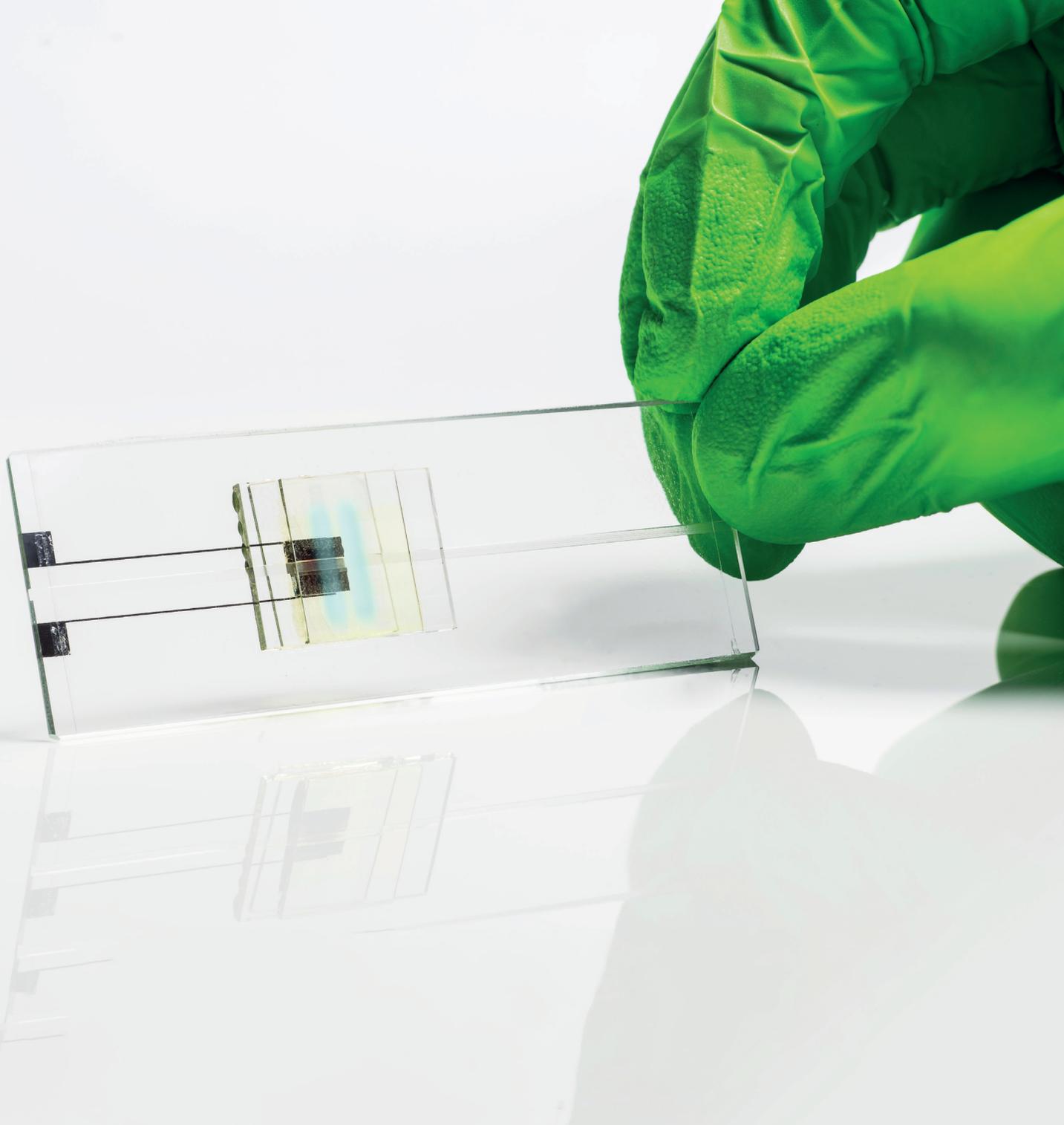
- Silver / gold / graphite
 - Resistive heaters
 - Wiring / electrodes
 - Mirrors
- PEDOT:PSS (Polymer: replaces ITO)
 - Transparent electrodes
- PVDF-TrFE-(CTFE) (piezoelectric)
 - Actuators (e.g. pumps)
 - Pressure sensors
- Various functional polymers
 - OLEDs / OPDs / light filters

Experience

- Ink development
- Process development
 - Substrate preprocessing
 - Printing
 - Post-processing
- Verification and validation



Printed functionalities on a polymer foil including heaters, pumps, capacitors, and optical detection.



Top: Inkjet printed functionalities for flexible and low-cost »lab-on-a-chip« systems.

Cover: Printed functionalities on a flexible polymer foil for covering microfluidic chips.



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more info

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