

## Roll-to-roll Pilot Line for Large-Scale Manufacturing of Microfluidic Devices

### CONTACT

JOANNEUM RESEARCH  
Forschungsgesellschaft mbH

MATERIALS  
Institute for Surface  
Technologies and Photonics

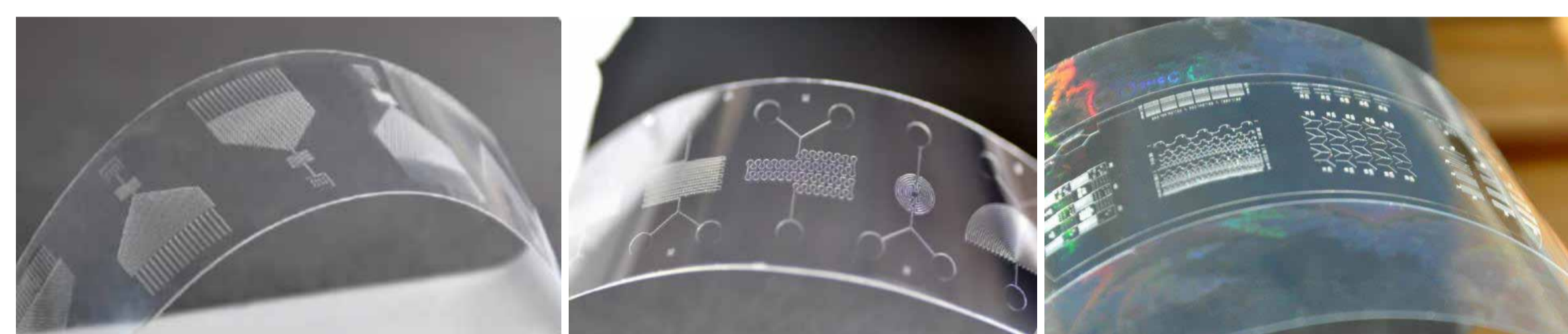
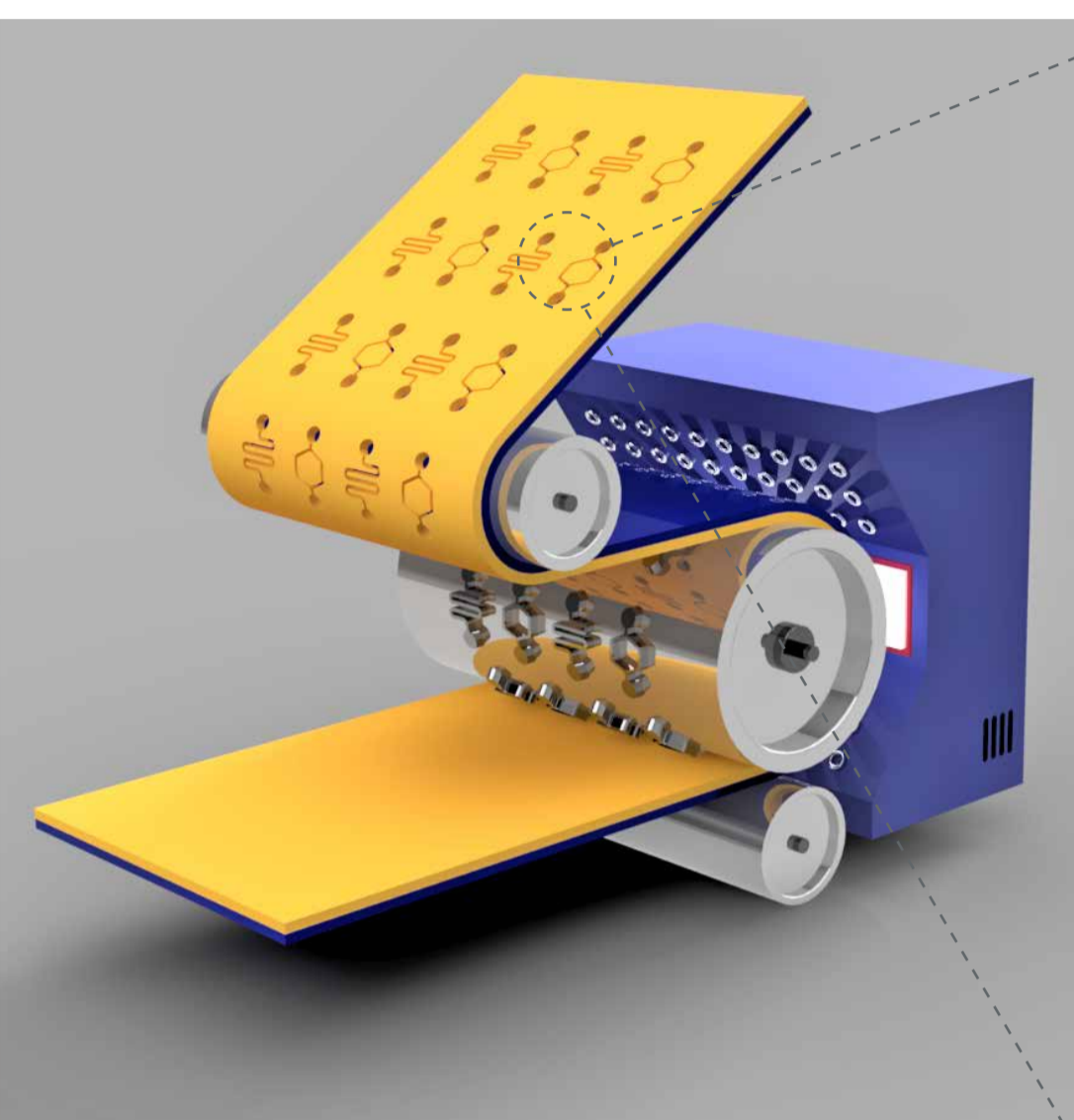
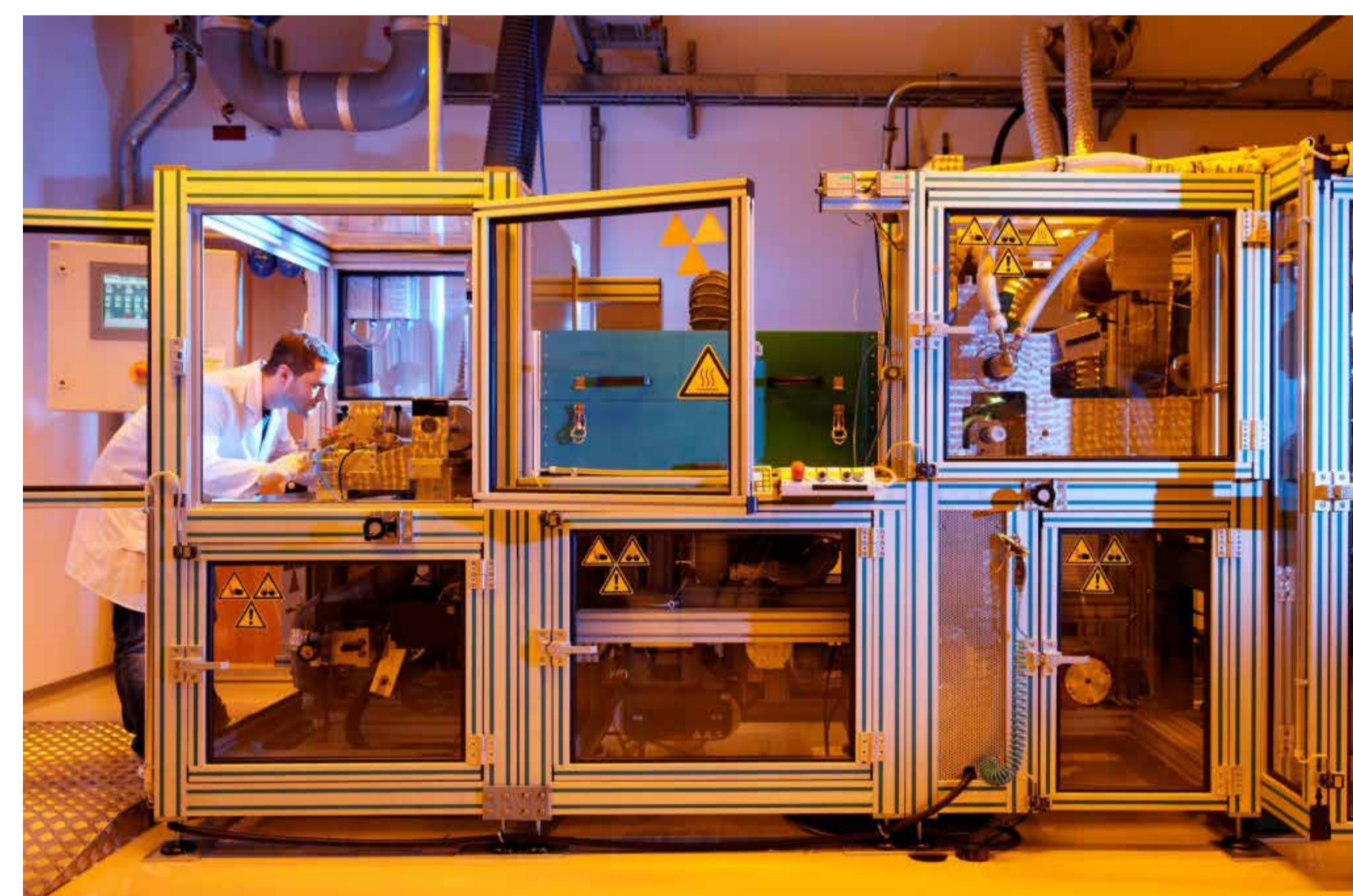
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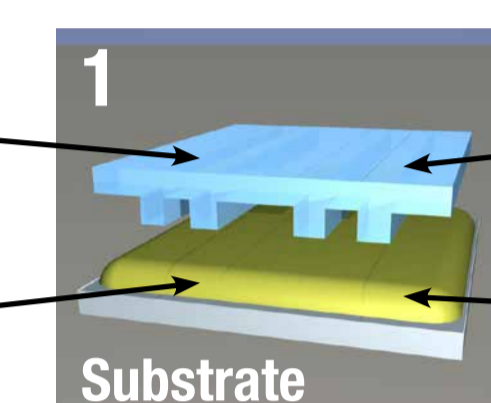
info@r2r-biofluidics.eu  
www.r2r-biofluidics.eu



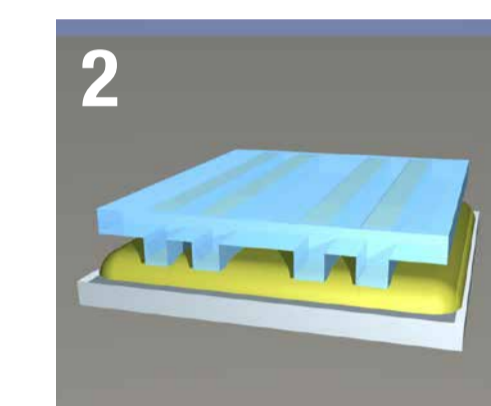
### UV-NIL\*

UV transparent stamp

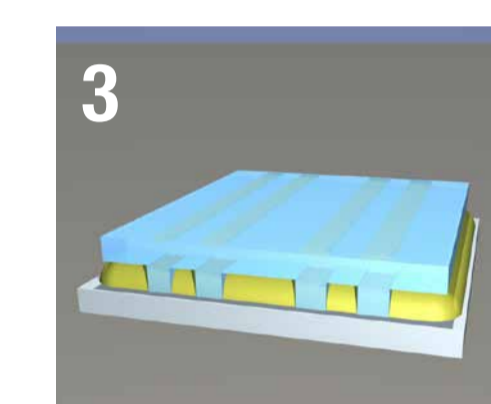
UV curable resin



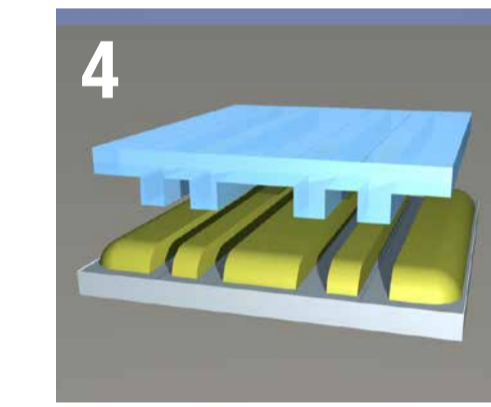
Embossing



Low P and UV exposure at room T



Deembossing



### HOT EMBOSsing

Stamp

Thermoformable polymer

Embossing

High P and T above  $T_g^{\ddagger}$

Cooling  
Deembossing

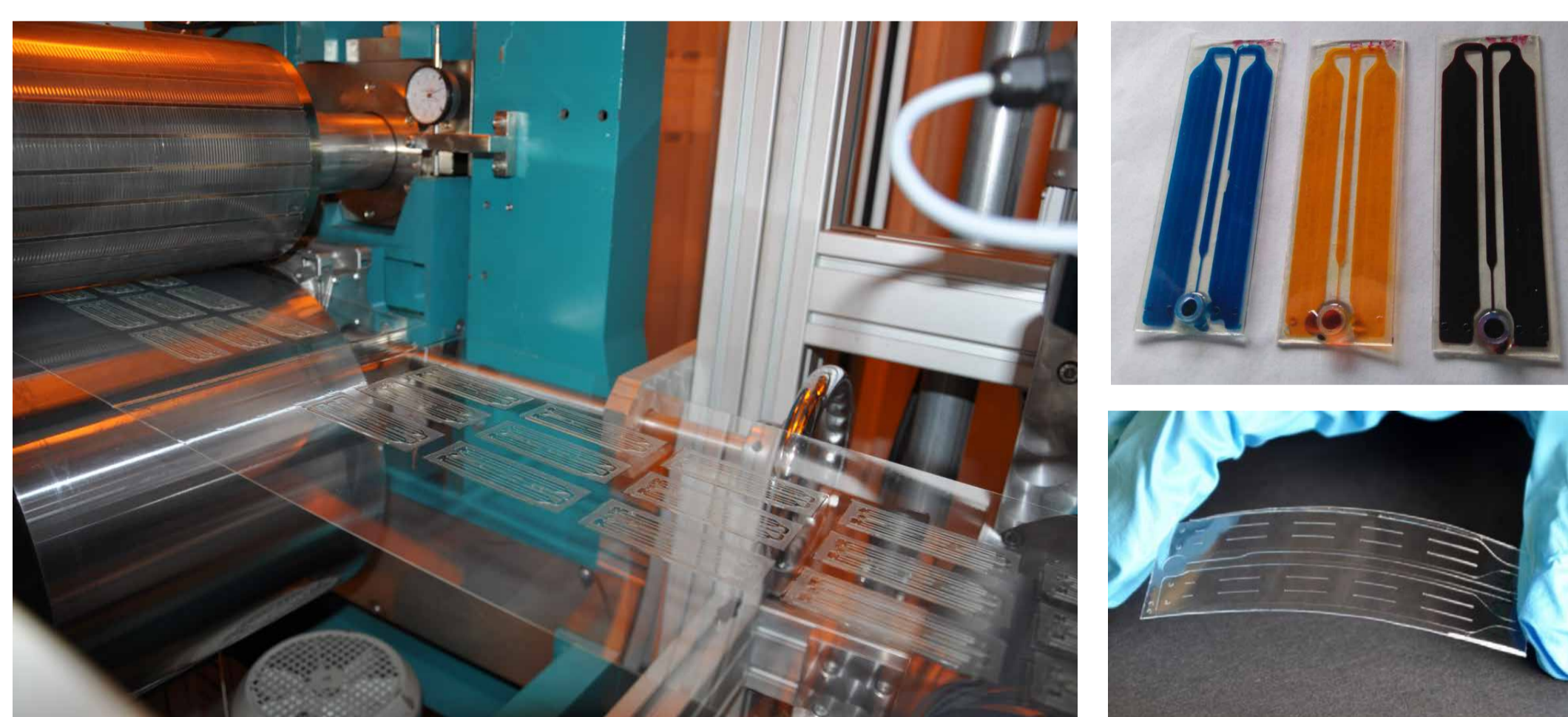
### Partners



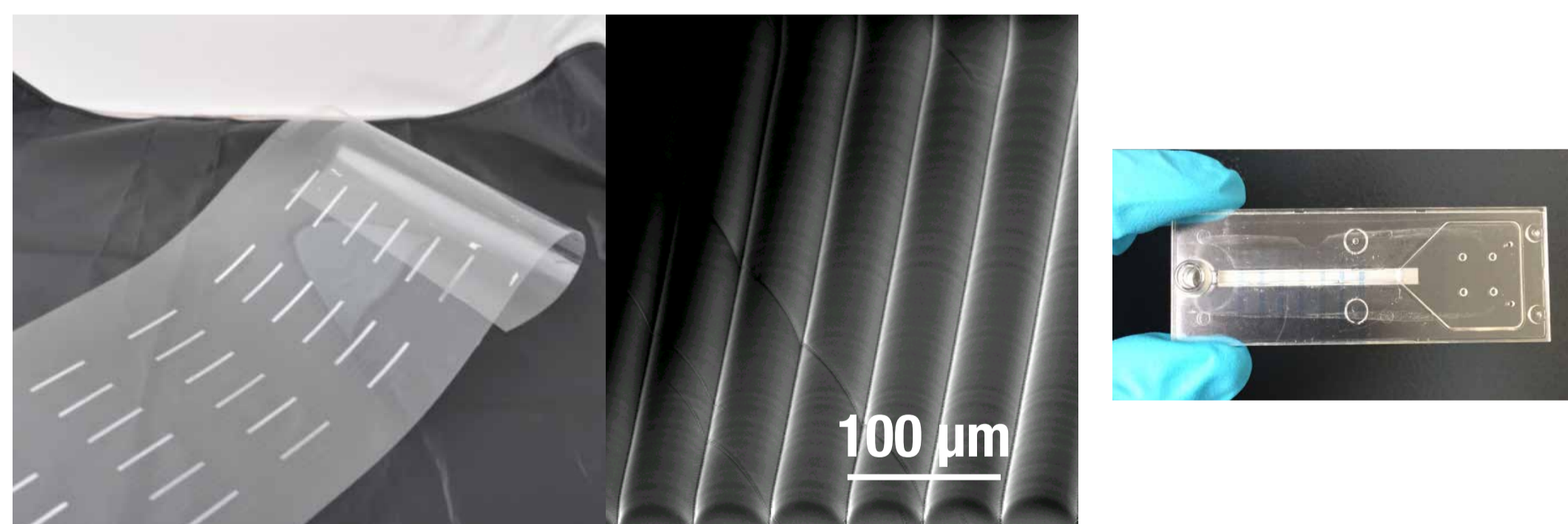
R2R Biofluidics aims to develop a complete process chain for **first-time realization** of production lines for bioanalytical **lab-on-a-chip** devices.

- High-throughput system: currently **360 chips/minute** (microscope slide format)
- Cost-efficient production
- Miniaturized analytical systems: **Lab-on-a-foil**

### Capillary Force-Driven fluidic lab-on-a-chip devices

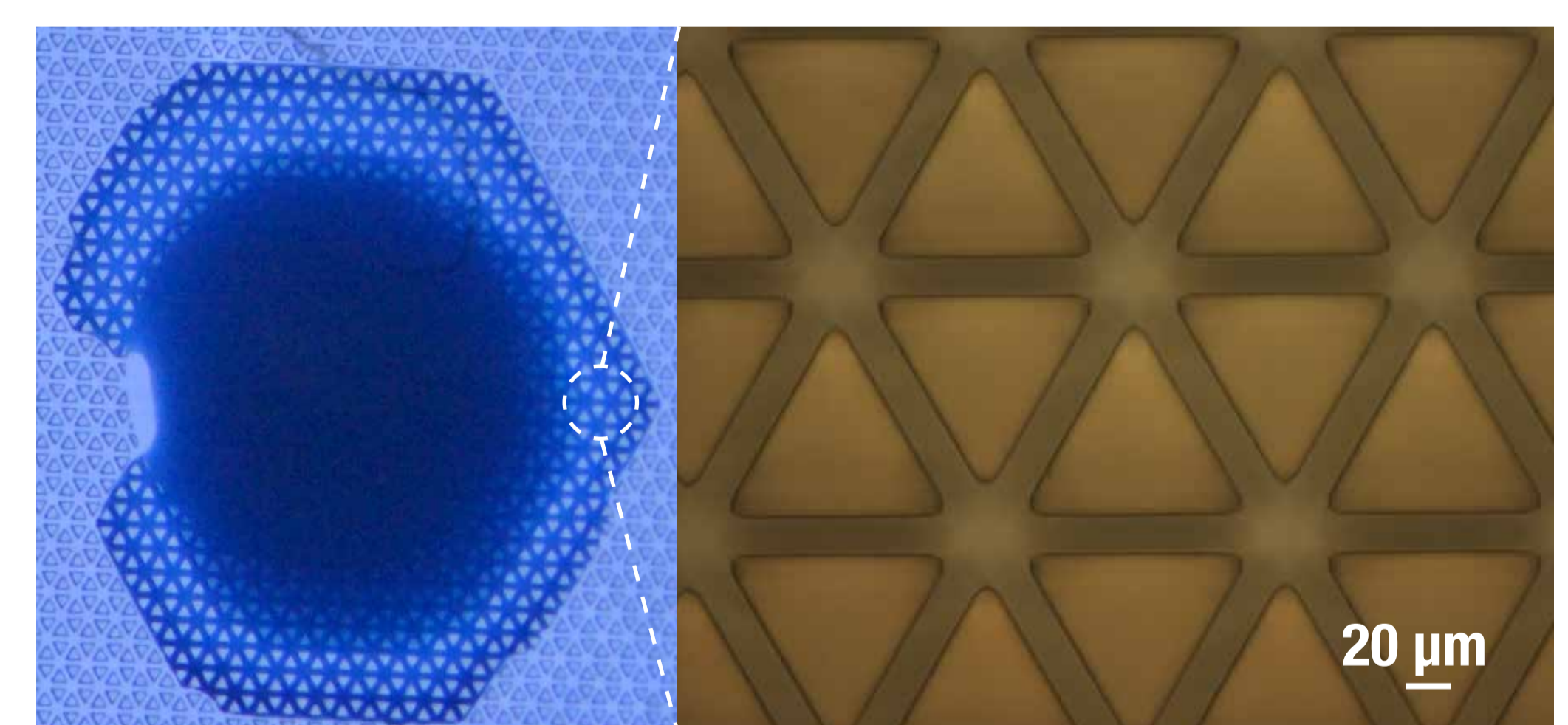
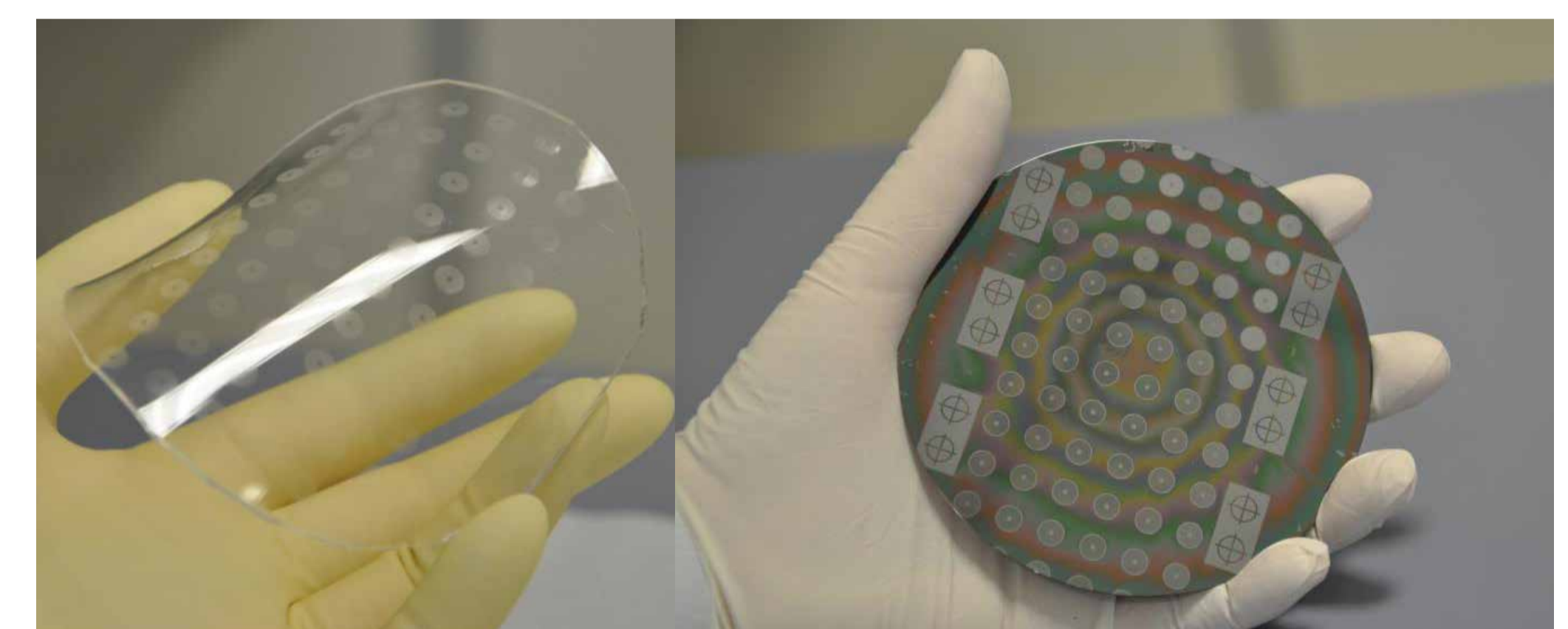


Targeted application: Low cost IVD<sup>§</sup> consumables.



R2R Imprinted Optical Microstructures for an improved sensitivity in biosensor chips

### Cell Culture Substrates for in vitro drug screening



Targeted application: Selective cell growth in microchannels coated with cell adhesion protein (Poly-L-Lysine)



Prototype of a Cell Culture Device based on different microstructures on a polymer foil assembled to a 96-well cell culture plate.

### Key Data

JOANNEUM RESEARCH MATERIALS is coordinating the EU project 'R2R Biofluidics' (Innovation Action) under call NMP-04-2014.

Participating Countries:  
AT, DE, DK and ES

Total Budget: € 7,929,411

Project start: 01.02.2015

Duration: 48 months



Supported by HORIZON 2020 European Commission Research and Innovation Programme under grant agreement no 646260.

### What do we offer ?

- Lab-on-a-chip development
- Technology transfer
- Material development

### What are we looking for ?

- New applications
- New customers
- Research projects

\*UV-Nano Imprint Lithography, <sup>†</sup> glass temperature and <sup>§</sup> in vitro diagnostic devices.