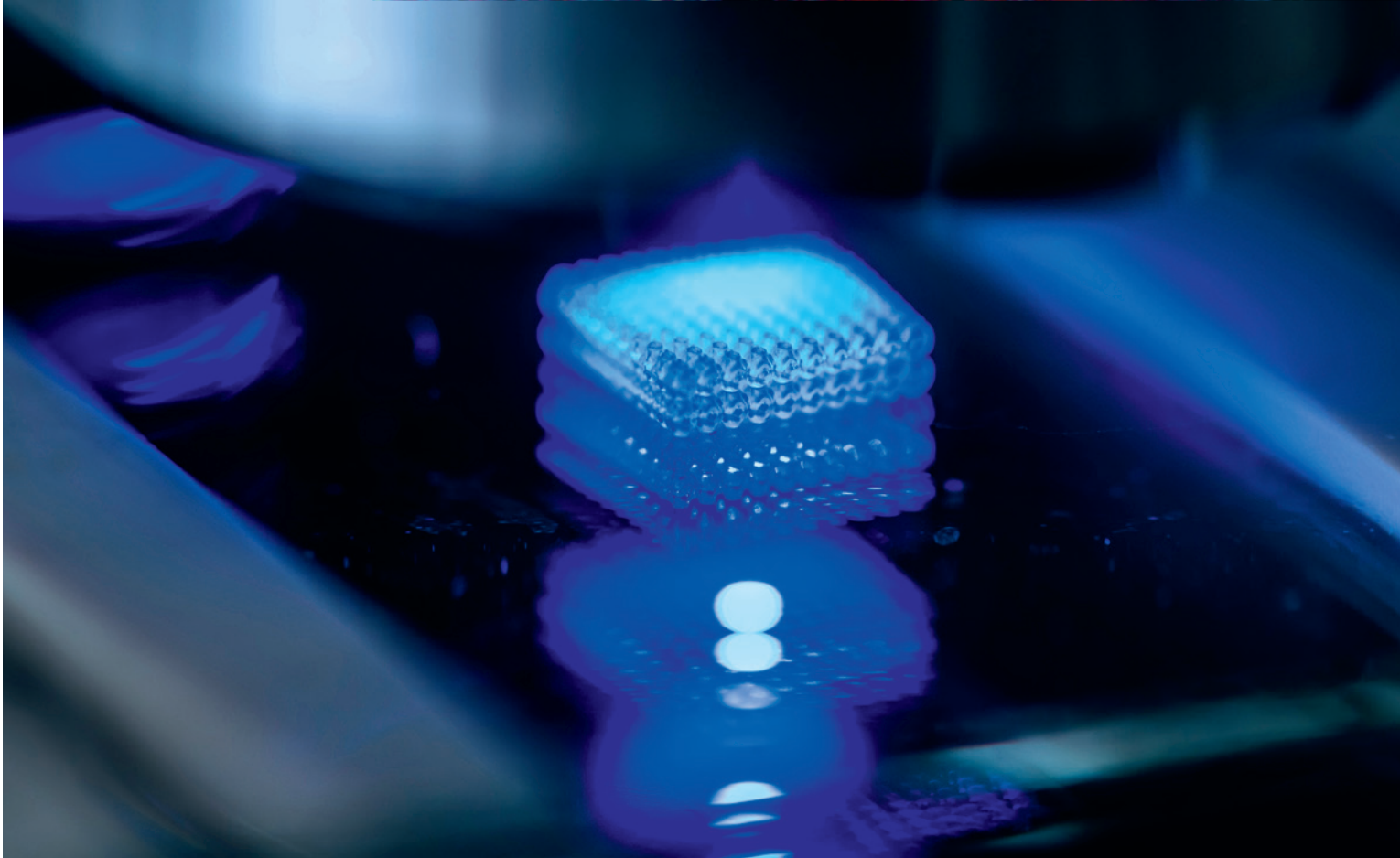
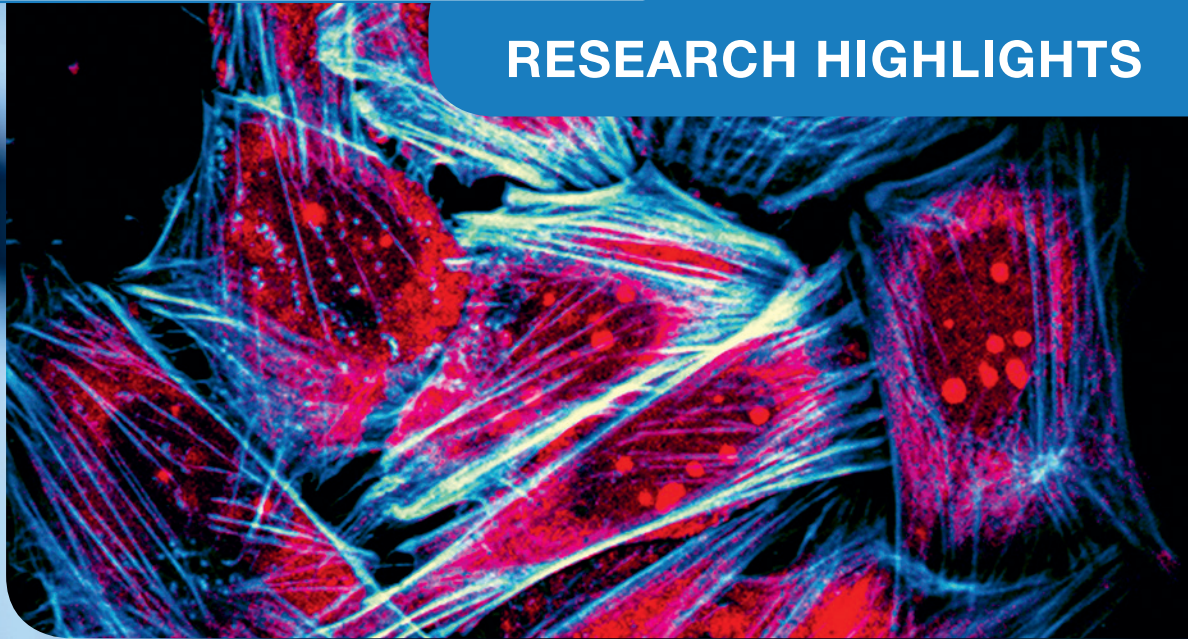


Biotechniques **at Interfaces**

RESEARCH HIGHLIGHTS





HOW DO PATHOGENESIS PROCESSES INFLUENCE CELLS?

CAN WE SIMULATE THIS?

HOW DO MATERIALS, STIMULI AND MEDICATIONS
INFLUENCE THE RESPONSE OF CELLS AND TISSUE?



BIOTECHNIQUES AT INTERFACES

Research on application-oriented topics in the field of technical systems for life sciences.

FOCUS

Engineering of molecular and cellular processes for pathogenesis research and patient-specific therapy approaches.

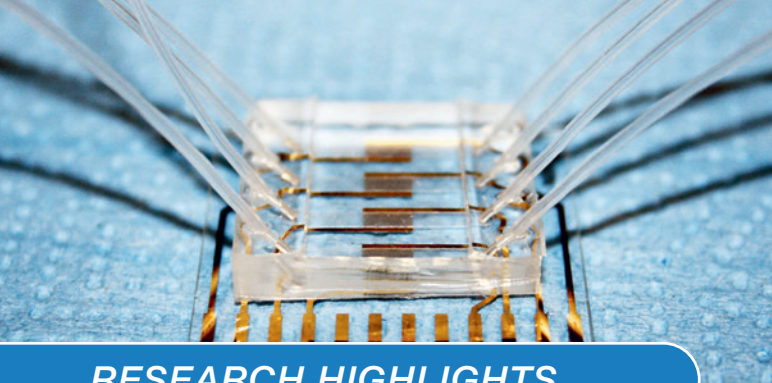
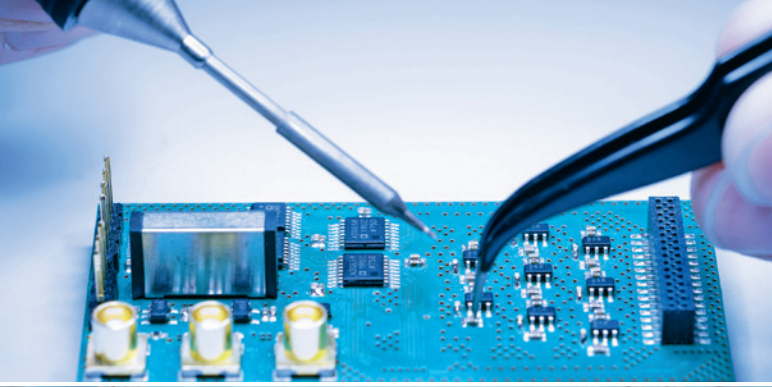
VISION

Leading role in research on interactions of pathological processes – from (stem cell) cultivation in 3D environments to non-invasive sensors to data analysis and AI.

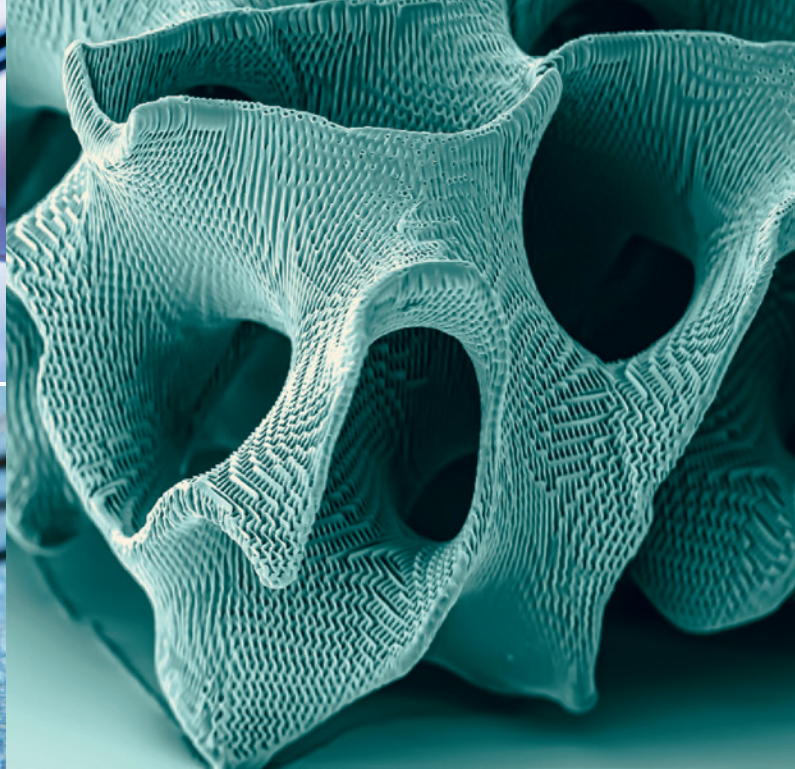
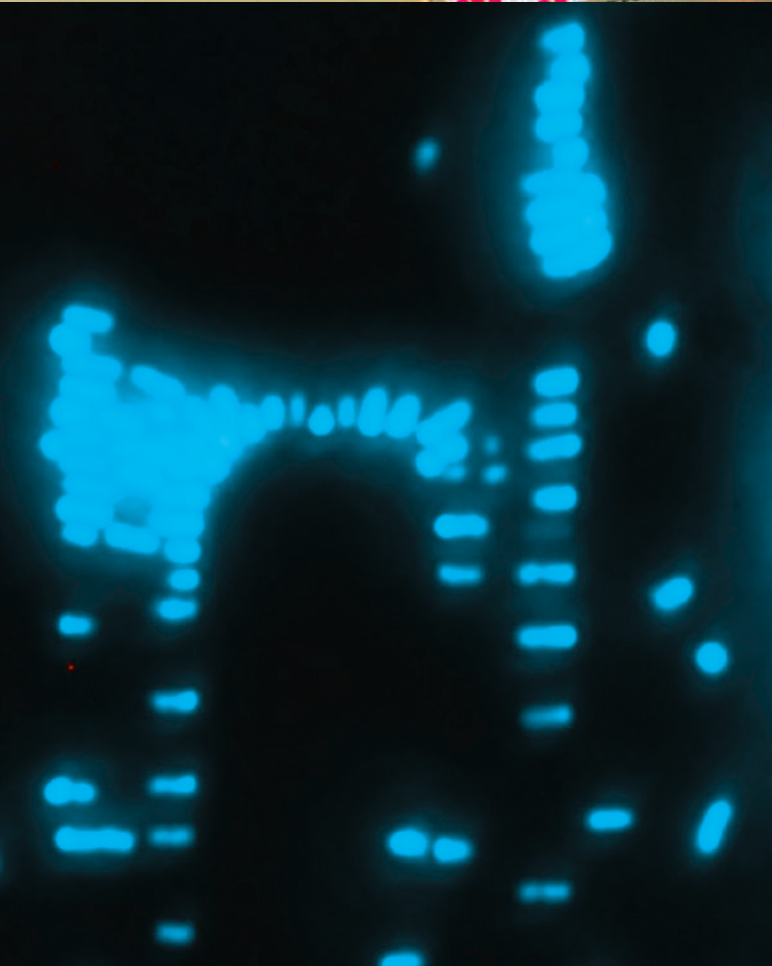
Optimization of methods, procedures, devices, systems, equipment and products for medicine, biotechnology and related areas.



Entdecken Sie
unseren Imagefilm!



RESEARCH HIGHLIGHTS



TISSUE ANALOGUE MATRICES

TISSUE-MIMICKING MATRIX ENGINEERING: Scaffold structures for 3D therapies and Organ-on-Chip diagnostics using novel biopolymers and advanced 3D-printing technologies

SYNTHESIS of photocurable, bioactive and bioresorbable polymers

HIGH-POWER LASER SYSTEMS for ultra-precise 2-photon nanolithography

ADJUSTABLE BIOMATERIAL PARAMETERS enable adaptation to a wide range of biomedical applications

QUANTUM-BASED SENSORS

With dimensions on the nanometer range, they allow up to 1000 times **HIGHER SENSITIVITY** and **SELECTIVITY** than comparable sensor elements.

To obtain informations about the metabolic state of cells or to take medical imaging to new dimensions they determine smallest currents within cells and tissue.

MICROFLUIDIC CULTIVATION SYSTEMS FOR PERSONALIZED MEDICINE

MICROFLUIDICS on the micro- and nanoscale

TOPOGRAPHIC SURFACE MODIFICATIONS of microchannels enable a wide range of applications of single and multiphase microfluidic systems in tumor and infection research.

MINIATURIZATION allows cultivation of 3D cell cultures in μL -scale droplets separated by oil in a tube. New imaging, spectroscopic and electroimpedimetric measurement principles analyze the response of 3D cell cultures inside these droplets to various stimuli such as drugs.



Discover our video!

Biotechniques at Interfaces

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