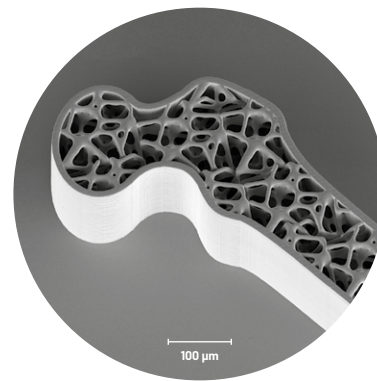
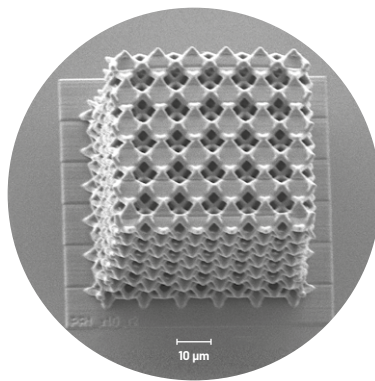
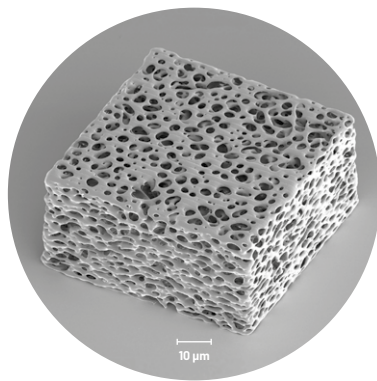


Scaffolds for tissue engineering

3D structures

We can strictly control the architecture and fabrication of 3D scaffolds for cell growth, thus ensuring customization, high homogeneity and repeatability of the process for numerous applications.

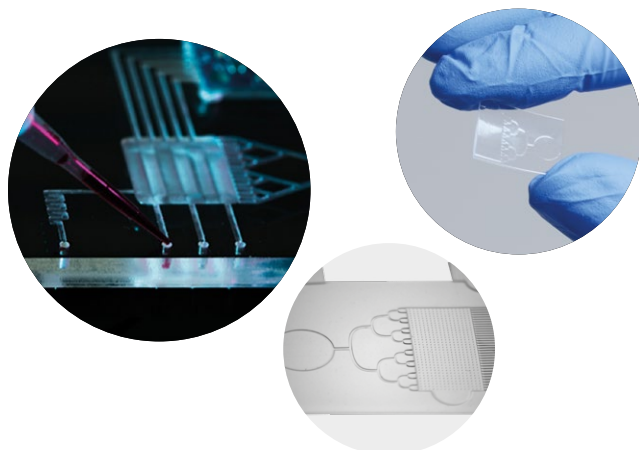


Scaffold with precisely controlled structure

Lab-on-a-chip

1. **Tailor-made solution**
2. **We can supply individual components:**
 - a. filters
 - b. mechanical latches
 - c. mixers
 - d. diagnosis of civilizational and rare diseases (e.g. sugars, cholesterol, etc.)

We develop lab-on-a-chip systems, namely the integration of one or more laboratory functions on a miniaturized chip. This allows multiple laboratory analyses to be carried out quickly and efficiently without the need for expensive laboratory facilities. The development of these diagnostic tools, which can be used anywhere as point-of-care devices, plays a vital role in improving global health.

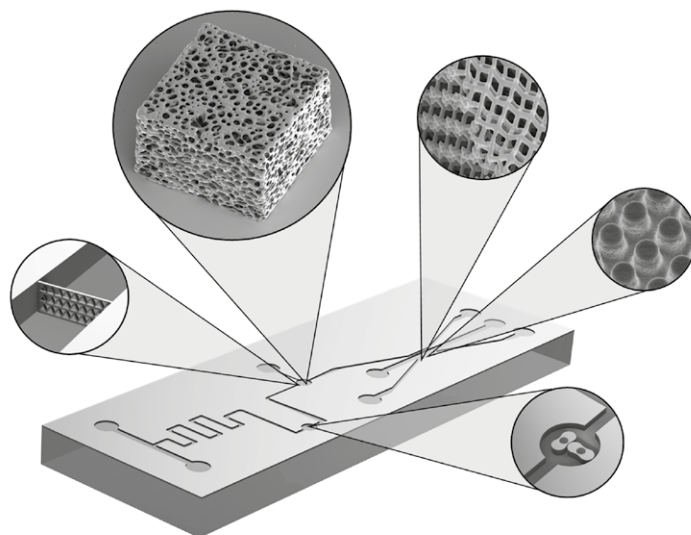


Chip development at IQS in cooperation with the University of Pardubice. The chip was used as a detection device to refine test results for the presence of COVID-19 mutations

Organs-on-a-chip

1. **Complex structure of a functional system**
2. **We can supply individual components:**
 - a. structured membranes for organ-on-a-chip systems allowing cell growth and adhesion to be influenced
 - b. hydrophilic/hydrophobic surfaces

Organs-on-a-chip mimic the function and behaviour of native human organs in vitro. This results in the acceleration of new drug development. We offer the integration of a microfluidic tool for the development of novel organs-on-a-chip. Moreover, we can tailor the chip to individual requirements and supply the specific microcomponents.

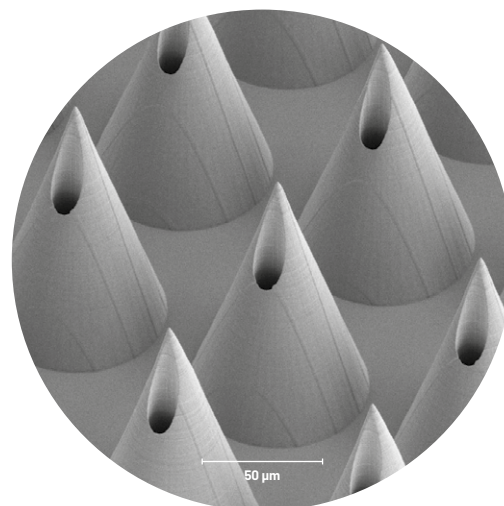


Microengineering for biomimetic systems

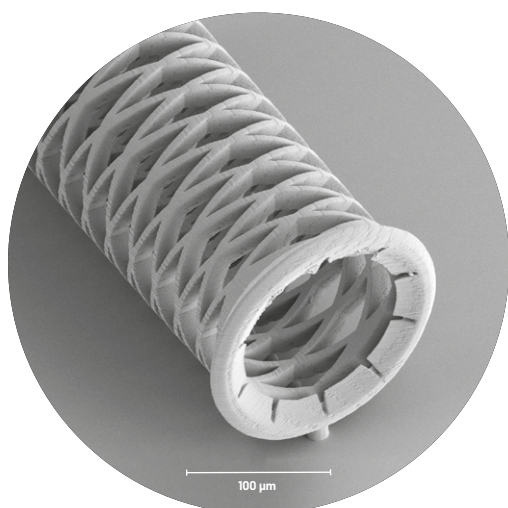
Drug delivery

1. **Microcontainers for directed drug delivery**
2. **Microneedles – degradable and non-degradable structures for controlled drug release, for cosmetic applications, microneedles for dental applications, coating microneedles**
3. **Homogenous distribution into tissues using microneedles**

We can prepare carriers for the controlled delivery of drugs (e.g., microcontainers that can be administered orally). In addition, we offer patent-protected mass production of hollow microneedles for the transport of liquids into the adjacent subcutaneous layer. The development of these diagnostic tools, which can be used anywhere as point-of-care devices, plays a vital role in improving global health.



Hollow microneedles



Vascular micro stent

Implants

1. **Micro implants (artificial corneas, implants for eye pressure relief)**
2. **Improving the surface properties of implants**
3. **Stents**

We develop and manufacture implants for specific applications, offering the advantage of precisely controlled surface properties; micro stents for maintaining the patency of tubular structures; and biocompatible and biodegradable implants.

Microcomponents

1. **Microendoscope on fiber**
2. **Surgical clamps**
3. **Other microcomponents for surgery**

As part of current product development, we prepare components and tools for examination and micro-surgical applications (clamps, screws, plates, etc.). The supplied components can be biocompatible and biodegradable for use in research and development.

Surface treatments

1. **Surface disinfection (via sharp needles)**
2. **Antibacterial surfaces**
3. **Hydrophobic/hydrophilic surfaces**

We supply hydrophilic (wetting) and hydrophobic (non-wetting, anti-adhesive) surfaces inspired by nature (e.g., the lotus leaf effect) or directly specified by the customer. The microstructuring can also be applied as antibacterial surfaces in laboratories and hospitals.

