Microfabrication
Microfabricated devices are produced and characterized up to the nanoscale, with state-of-art instruments.

In particular, the marker laser and the 3D printer are really versatile instruments for the fabrication of prototypes, as for example 3D cellular scaffolds, microfluidic devices, connectors, masks for contact photolithography, and much more...
Microfluidic Devices & Chips

Manufacturing, Bonding & Machining

- With our microfluidic devices you are able to process very small sample and fluid volumes (from pico- to nanolites)
- We develop new bonding techniques which allow microfluidic chips to be manufactured with different materials and substrates

We are able to design and produce any microfluidic chips as a set of micro-channels etched or molded into a material (glass, silicon or polymer). Scriba’s micro-fluidics devices have been successful employed in: interfacing of fluids for opto-electronic sensors, cells containing fluids in XRD, GIXD and SAXS (synchrotron included) experiments, imaging with optical and scanning probe microscopes, chemical reaction studies in confined environment for nano- and pico-liters solution volumes, microfluidics circuits for biological testing, micro-reactors for proteins crystallization, devices for quantitative analysis in nano-toxicology fields.
3D-Printed components

Using our 3D printer we are able to build models by sequentially curing layers of photopolymer with a XY scale precision up to 30 µm, thus creating precise masks and models for microfabrication.

Stereolithography (SLA) printing works by curing resin with light. The light solidifies a liquid resin via a process called photo-polymerization and builds objects layer by layer. With this technique at Scriba we are able to create highly detailed and intricate designs. Layers are chemically bonded with each other allowing to generate parts with isotropic elastic module and high mechanical strength.
Scriba has developed an innovative fabrication method of gold, silver and platinum microelectrodes. They can be fabricated on different substrates: rigid, like quartz and glass or flexible, like PET and PEN. Scriba’s microelectrodes can be easily fabricated with different parameters of width (W) and length (L) and also with different geometries, linear, interdigitated or personalized on customer’s request.

**Microelectrodes**

- Especially suitable for all micro-electronic devices to operate with a low applied voltage and high gain transduction
- Typical applications are Organic Field Effect Transistors in water environment (EGOFET) and impedentiometric sensors

Flexible Electrodes

Sensing devices working in water environment
The molds we produce are generally used for flexographic printing of inks, solutions and formulations, for fabrication of composite molds, for replica molding and imprinting.

**Masters for replica molding**

**Flexible or rigid molds for soft lithography and imprinting**

- We perform characterization by optical and atomic force microscope of masters and replicas.
- We can add various surface treatments (adhesive, anti-adhesive, protective) on the mold surface on customer request.

Our replicas can be integrated on test patterns, metallic substrates, microscope slides, silicon wafer, polymeric sheets, thin films, even multi-layered, and custom substrates.
Materials patterning

Masks and shadow masks for contact photolithography or high vacuum deposition

- All the patterns are provided with optical and AFM characterization on request.
- The mask are characterized by maximum process tolerance of ± 10μm for shadow masks and +/- 5 um for contact UV masks.

We can produce masks and shadow masks which define device areas and form micro-structures with precision by masking or covering the target surface.

We can pattern multifunctional material at the micro- and nanoscale: metallic precursors, clusters of different origins, nanoparticles, polymers, soluble organic materials, biomolecules and soft matter, graphene, nanotubes.