

PDMS and Polymer Stamps

Tools for micro replication

We offer high quality PDMS and polymer stamps with customised micro- and nanostructures for nano imprint lithography and UV replication onto transparent and opaque substrates. Nano imprint lithography and UV replication are the state of the art mastering technologies for cost effective replication of nanostructures made by direct laser and e-beam writing. In addition, those technologies can be used to replicate high aspect ratio patterns, e.g. made by UV lithography. We have also proofed that they are appropriate to copy micro machined structures like Fresnel lenses, prisms and many others.

Applications and markets

The PDMS and polymer stamps can be used for numerous applications and markets. They are especially dedicated for applications where the use of nanostructures is essential.

- **Lighting**
Optical elements for LED, OLED, diffractive optical elements, architecture
- **Displays**
Optical films for displays, e-books (antireflection, light guide, lens array, diffusors)
- **Life Science**
Functional structures (e.g. lab-on-chip), antibacterial surfaces
- **Solar**
Light trapping, Light concentrators

Our technology

Our micro and nanostructured PDMS or film stamps are made by moulding from patterned masters made of metal, silicon, glass or even polymer. PDMS stamps are fabricated by a casting and curing process under vacuum conditions. The film stamps consist of a thin, patterned resist layer on top of a carrier film like PET, PC or glass. In contrast to nickel, the PDMS stamps are flexible, soft and transparent and also the film stamps are flexible and transparent. Thus UV replication on opaque substrates is easily possible.

Service

As a service, we offer in-house nano imprint in our own cleanroom environment. Thus we can make multiple masters and also optical demonstrators for R&D purposes.

With our unique step and repeat recombination tool we are able to enlarge nanostructures on large substrates up to 500mm by 600mm using our imprint stamps.

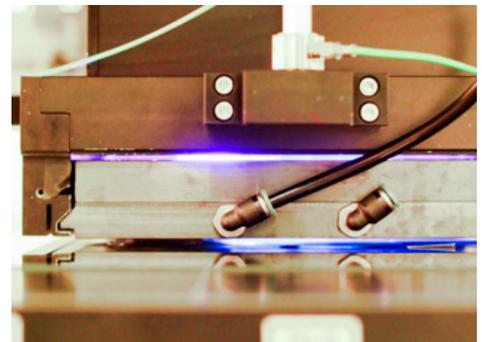
Specifications

Stamp type	PDMS	Polymer
Stamp size	max. 300 mm x 300 mm	Up to 8"
Stamp thickness	1 mm to 5 mm	125 – 350 µm
Film stamp material	PDMS, H-PDMS	e.g. PET, PC, PMMA

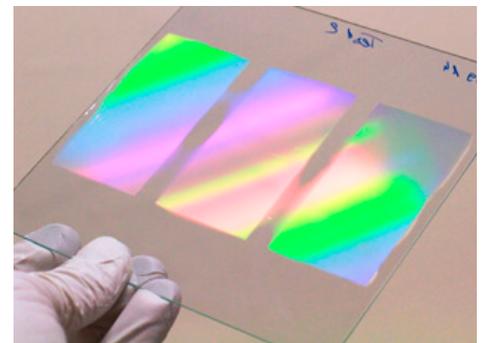
To get an overview of possible micro and nanostructures please refer to our homepage www.temicon.com



Flexible PET stamp



In-house UV imprinting



Demonstrator on glass with nanometer grid

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