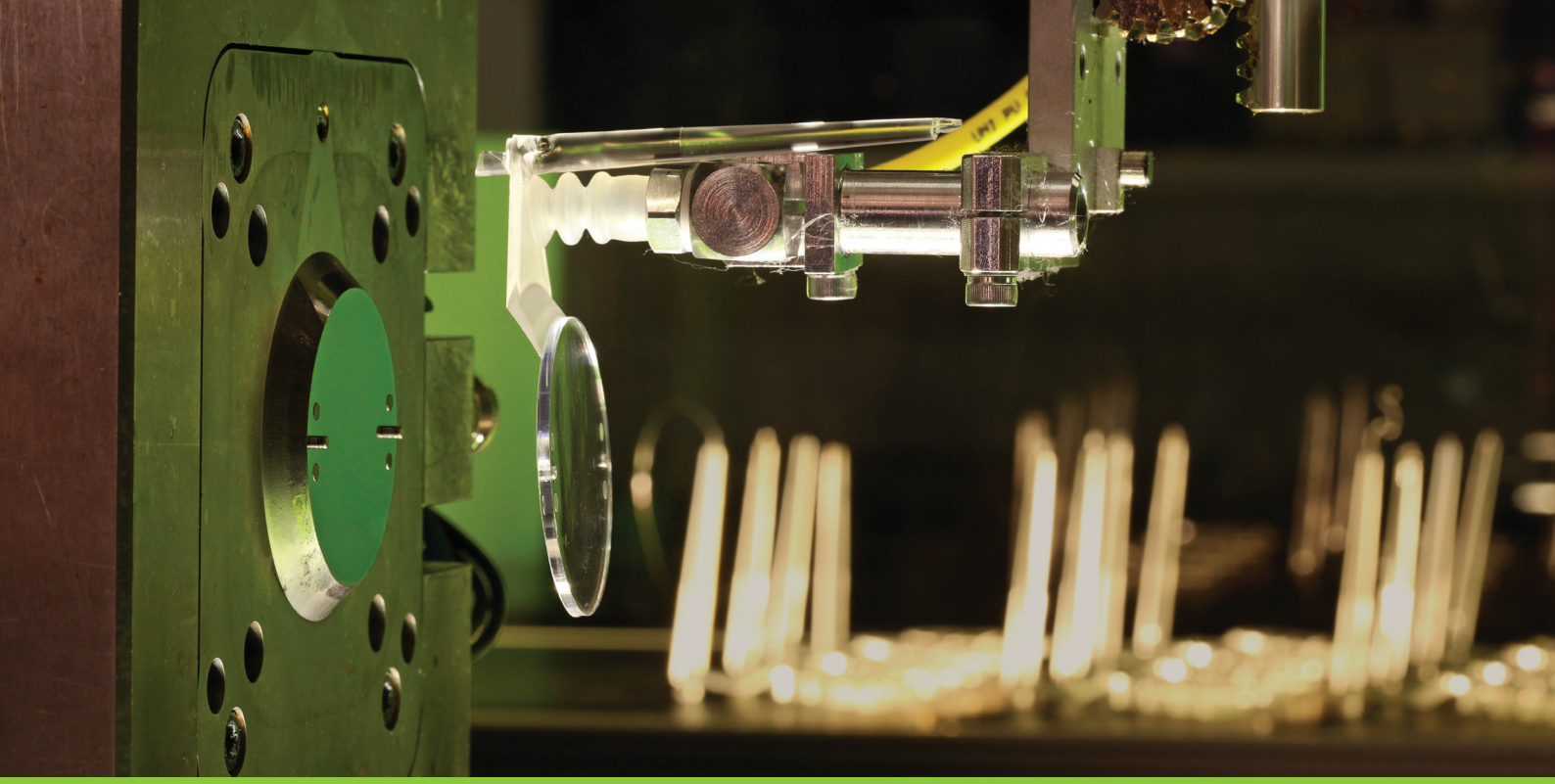

Polymer processing

DTU Danchip houses facilities for processing and production of polymer samples. To a large extent polymer processing utilizes the same tools as other material platforms, but there are also a few tools which are polymer specific.

Danchip has established a process chain that covers the entire process from designing a CAD pattern, transferring this pattern to silicon, fabricating a nickel replica which is then used as a stamp for hot embossing, nanoimprint lithography or in our in-house injection molding machine.

The injection molding machine at Danchip is an Engel Victory Tech 80/45 offering up to 450 kN clamping force. Danchip has experience in injection molding of COC (Topas©), COP (Zeonor©), polystyrene and polypropylene, but other polymers can be accommodated as well. The injection molding machine and tool formats at Danchip are designed for rapid prototyping and small production series in mind. Thus, anything from tens to a few thousand samples is possible.

Danchip offers three different tool formats for injection molded samples: a 21x76 mm^2 microscope slide format, an ø50mm flat disc and an ø50mm disc with 12 Luer connectors. The two latter parts can be bonded together to form a sealed liquid handling system that connects easily to syringes or other liquid delivery devices.

Danchip also offers opportunities for processing polymer samples in our cleanroom making it possible to use polymers as a substrate material.

Contact us for further information at sales@danchip.dtu.dk.

Processing equipment

Lithography
Spin and spray coating, UV, DUV, e-Beam and Nano-imprint lithography

Dry etching (up to 6")
RIE, DRIE/ICP, Plasma ashing

PVD (up to 6")
Al, Ti, Cr, Au, Pt, NiV and others

Electroplating (up to 6")
Ni

Injection molding
Clamping force ≤ 450kN
Tool temperature ≤ 160°C

3D writing
NanoScribe two-photon polymerization system

Thin polymer film deposition
Plasma polymerization, MVD

Characterization
Microscopy, profilometry, ellip-sometry , drop shape analysis, SEM (w. EDX), AFM, XPS, SIMS.

DTU Danchip
National Center for Micro- and Nanofabrication