

UP NANO



THE HIGHEST PERFORMANCE 2-PHOTON
POLYMERIZATION 3D PRINTING SYSTEMS

Materializing great ideas. Precisely.

UpNano develops high-resolution 3D printing systems based on 2-photon polymerization (2PP) technology, making it possible to create freeform, high-precision 3D structures for applications beyond the limits of conventional manufacturing. With the NanoOne printing platform, UpNano combines precision, speed and application flexibility in one integrated system built for research, prototyping, mastering and small-series production.

✓ SUB-MICRON PRECISION

For intricate structures, demanding geometries and tight tolerances

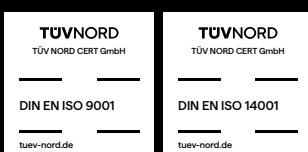
✓ MACRO-SCALE CAPABILITY

From large area arrays to parts beyond 40 mm in height

✓ FLEXIBLE PRINT MODES

Multiple print modes for optimal precision and speed where needed in every print

Discover how the NanoOne combines 2PP technology, modular system design, and application-focused materials into a complete printing platform.



Quality and environmental awareness are two fundamental prerequisites, which are reflected in the ISO 9001 and 14001 certifications of our company.

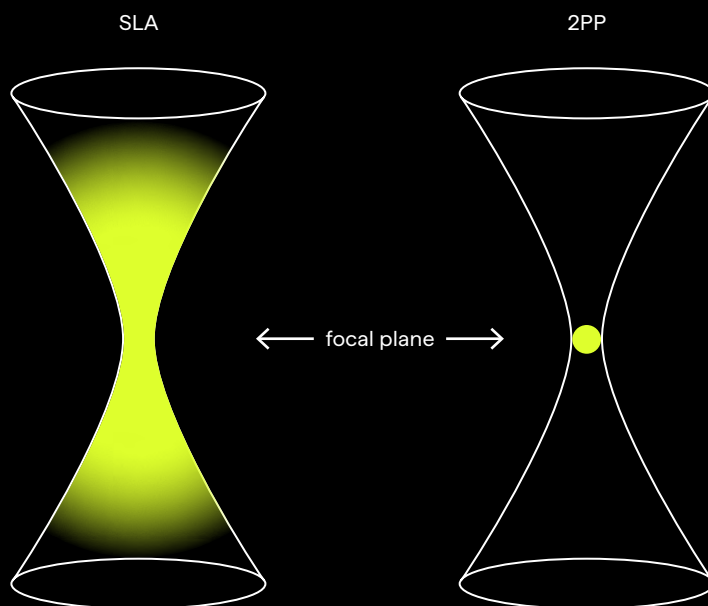
What is 2PP?

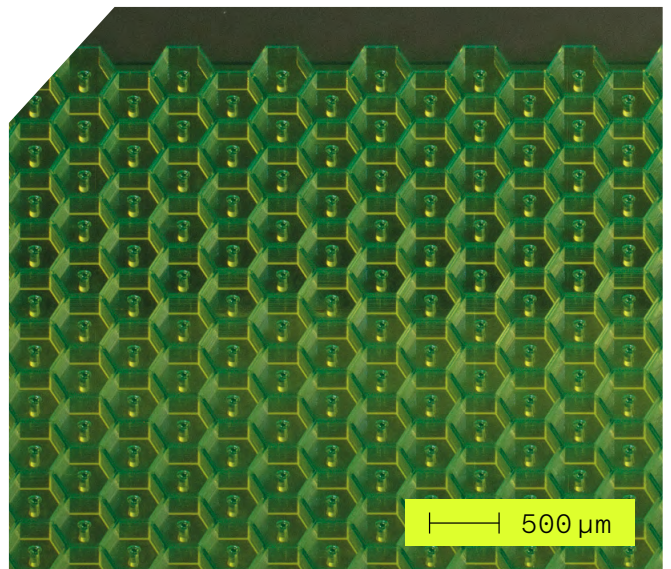
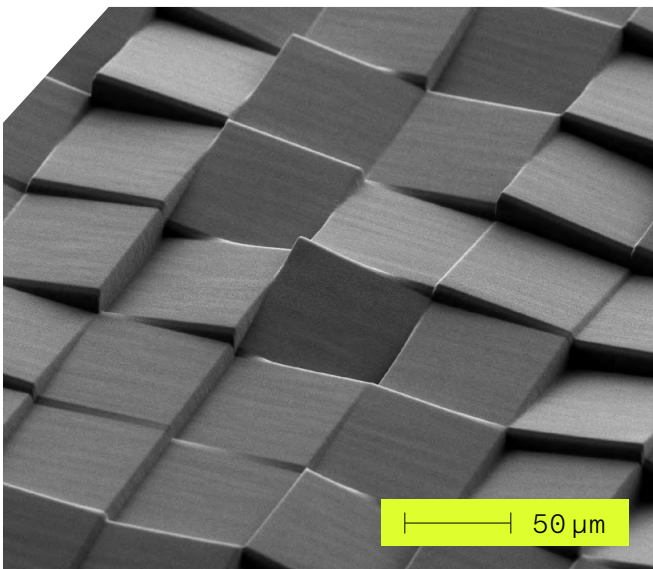
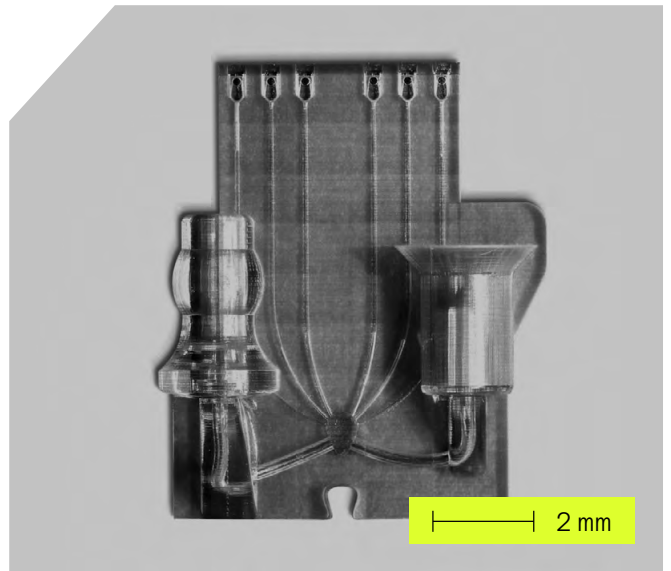
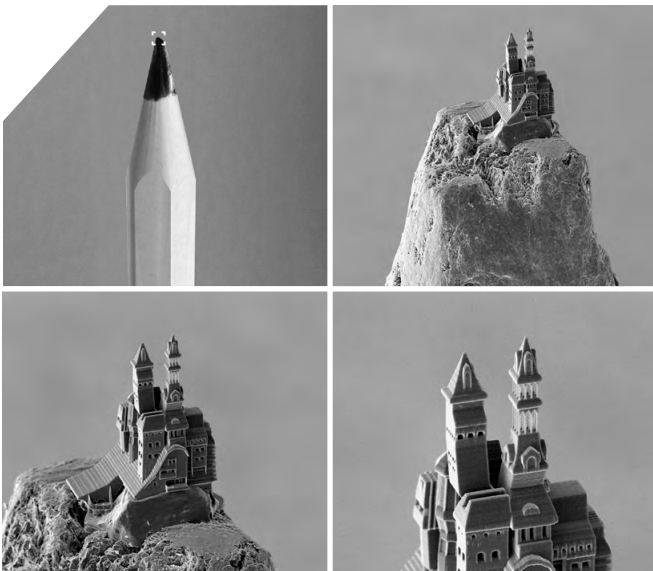
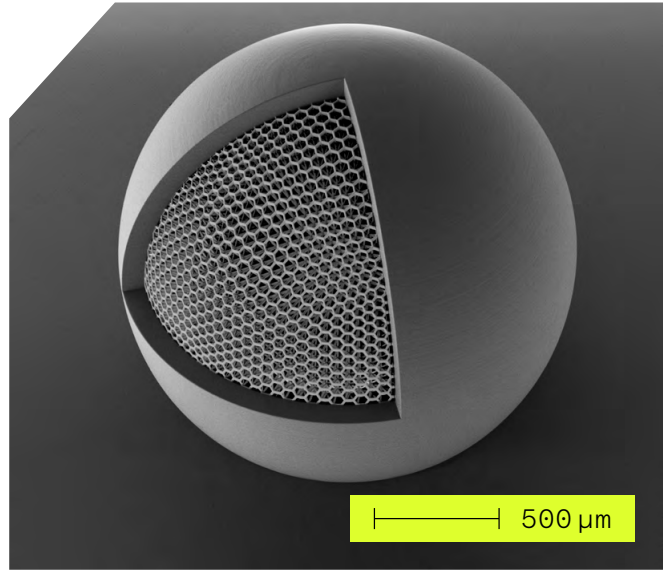
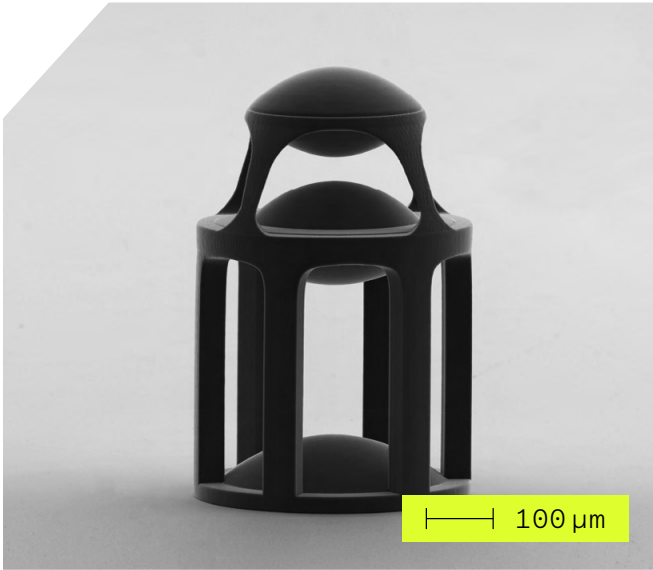
2-photon polymerization (2PP) is a light-based microfabrication process that enables the creation of highly detailed 3D structures with sub-micron precision. By confining polymerization to a tiny focal volume inside the resin, 2PP makes it possible to produce complex micro-parts with exceptional accuracy and geometric freedom.

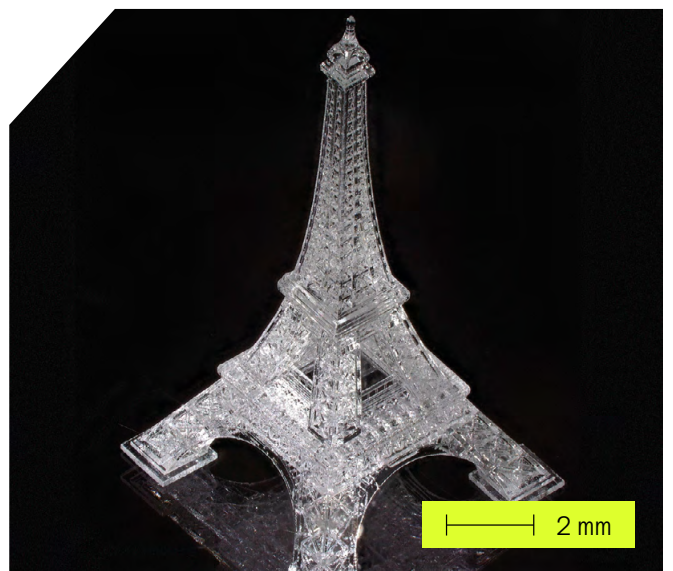
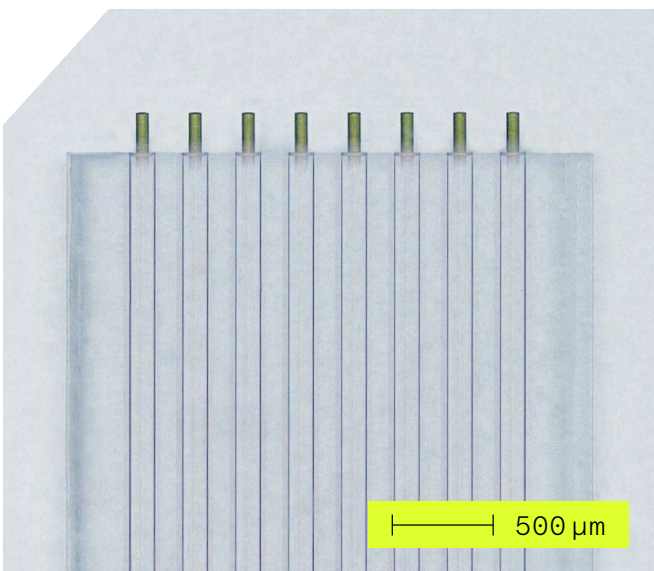
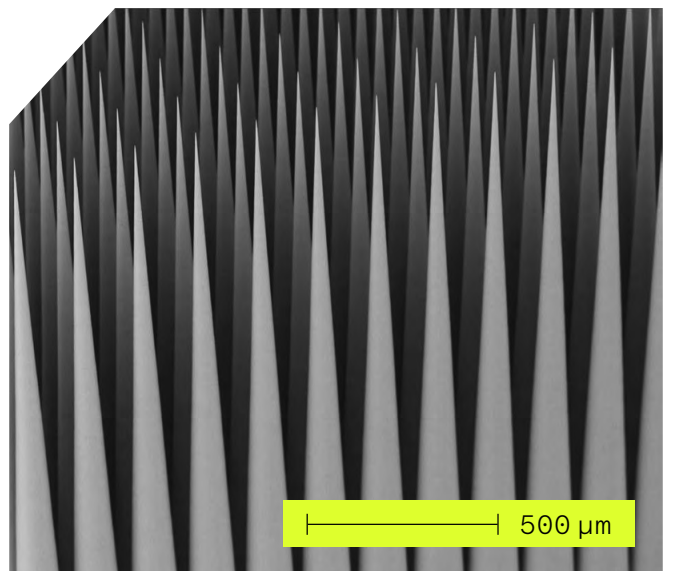
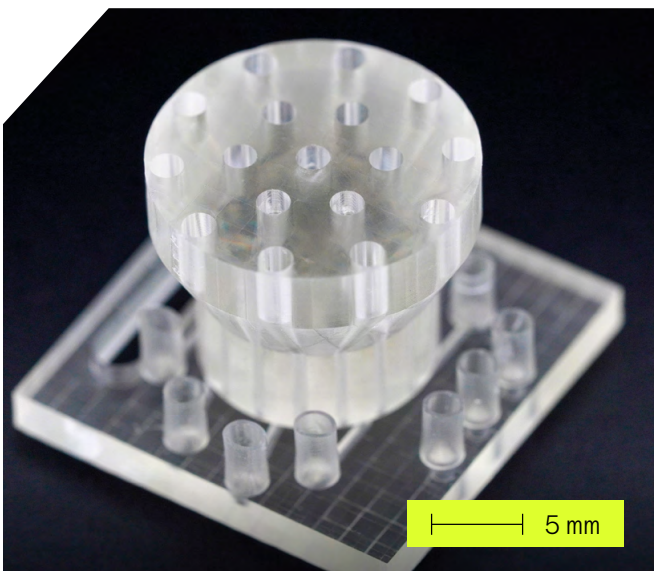
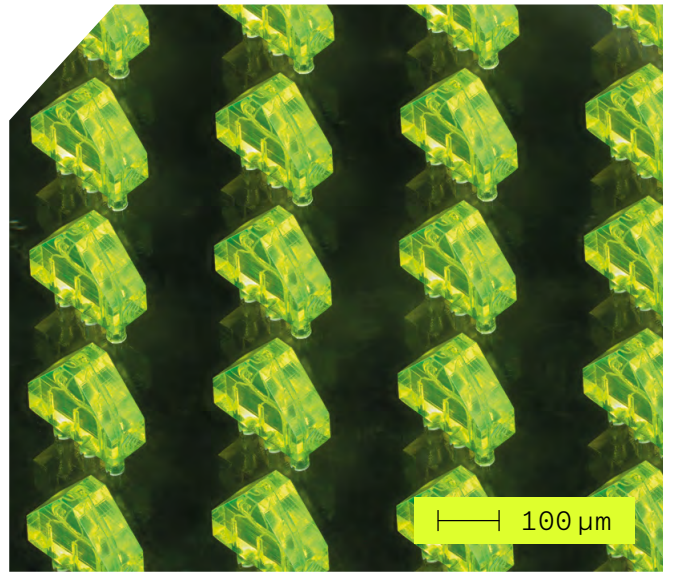
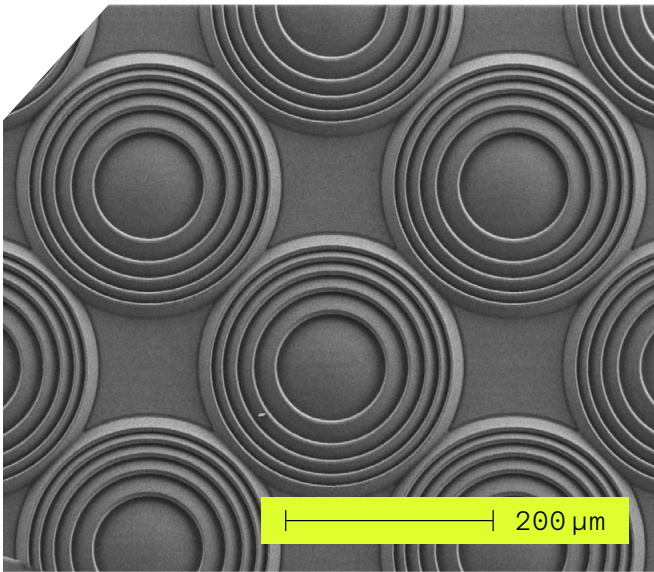
How 2PP differs from conventional SLA

While stereolithography (SLA) cures resin through linear light absorption and typically builds layer by layer, 2PP relies on non-linear 2-photon absorption at the laser focal point, enabling direct 3D printing with finer spatial control.

This highly localized process is the foundation of NanoOne's ability to produce intricate microstructures, fine features and precision parts for demanding applications.



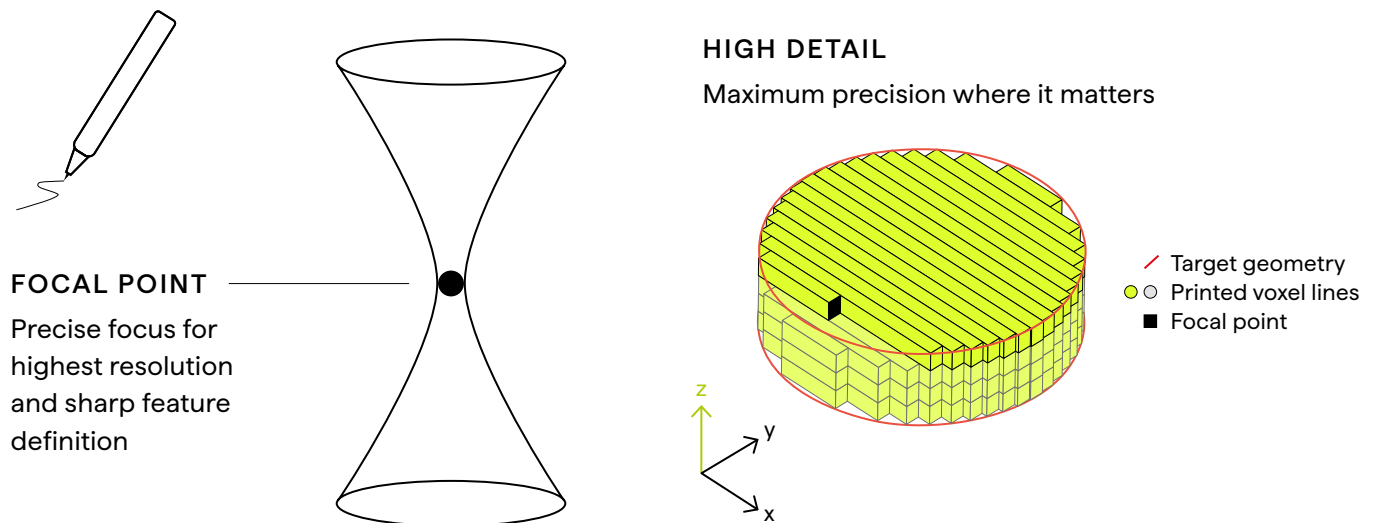




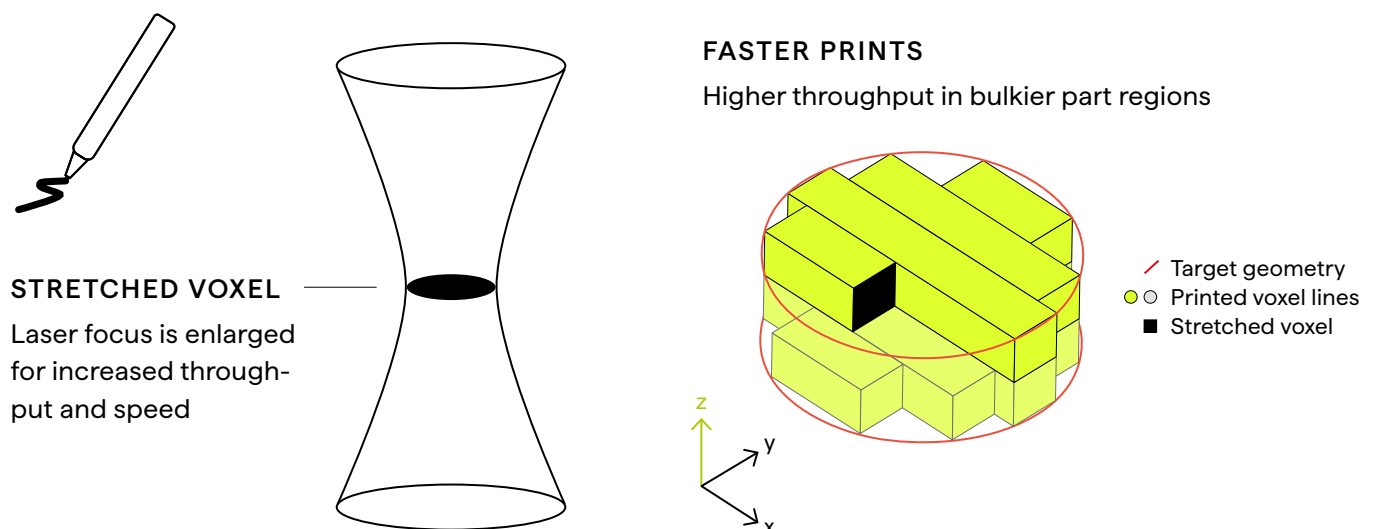
Adaptive Resolution: Precision where needed, speed where possible

Adaptive Resolution is UpNano's patented technology for dynamically adjusting the voxel size within a print job. By combining fine and coarse printing modes, the NanoOne achieves high detail in critical regions while significantly increasing throughput in less detail-sensitive areas.

Fine Mode



Coarse Mode



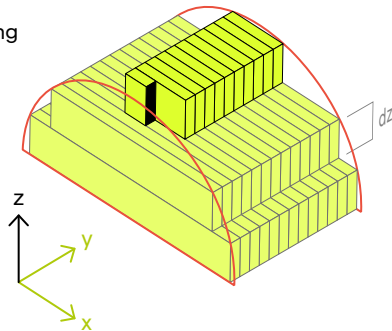
3D Adaptive Resolution (3DAR): Engineered for smooth surface results

Our proprietary 3DAR print mode enables dynamic voxel control in all three dimensions, allowing optimized resolution and superior surface quality down to Sq 5 nm.

With traditional layer-based printing, surface finish can only be improved by a reduction of layer height, which in turn linearly increases print time. 3DAR print mode enables dynamic control of voxel height, allowing it to precisely match the target geometry while maintaining large layer heights – pushing both resolution and print speed.

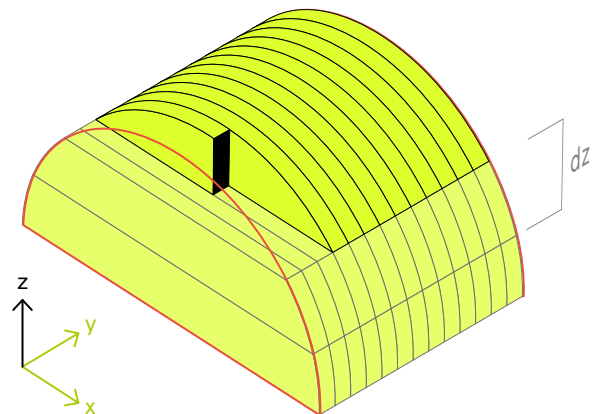
LOW RESOLUTION SLICING

- Large layer distance dz
- Fast printing
- Strong staircasing



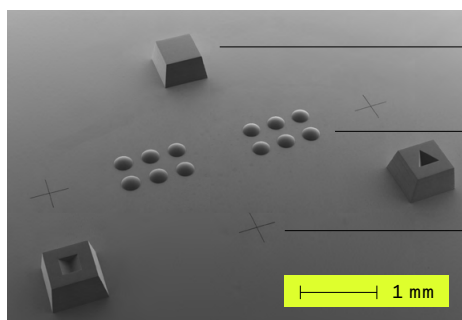
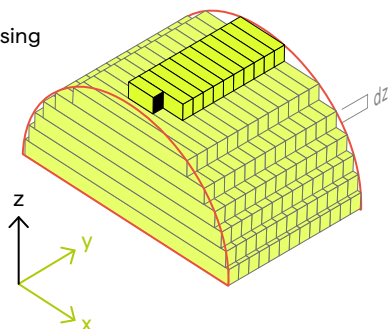
3D ADAPTIVE RESOLUTION

- Large layer distance dz
- Fast printing
- Highest resolution
- No staircasing
- Smooth surface quality



HIGHER RESOLUTION SLICING

- Small layer distance dz
- Slow printing
- Reduced staircasing



COARSE MODE :
Higher throughput in bulkier part regions

3DAR :
Grayscale voxel control for ultra-smooth surface quality

FINE MODE :
Precise focus for highest resolution and sharp feature definition

Assembly of micro-lenses, alignment markers and 3-point mounts

Integrated platform engineered for seamless printing

Developed by UpNano as a fully integrated system, NanoOne brings together printer hardware, Think3D software and specialized 2PP resins to deliver one reliable, high-precision microfabrication platform.

NanoOne combines a compact benchtop footprint with industrial-grade microfabrication capability for development, prototyping and small-series part production.



- Desktop-sized system with high-performance and high-throughput
- Seamless interplay of hardware, software and resins
- Ideal for research, prototyping and small-series production
- Built-in ISO 6 cleanroom environment and vibration isolation
- Advanced laser power options for application flexibility
- Operational in ambient-light environment

✓ INTEGRATED SOFTWARE

User-friendly, streamlined data-preparation and process control

✓ PRECISION HARDWARE

Stable, high-resolution 2PP printing in a compact desktop system

✓ OPTIMIZED RESINS

Purpose-developed materials matched to performance and application needs

A modular system tailored to your application

NanoOne is designed as a flexible platform that can be configured with a growing range of accessories including inserts, holders and material vats. This modular approach allows users to adapt the system to different substrates, materials and workflow requirements. Accessory upgrades can be easily retrofitted at any time, ensuring your printing system evolves with your changing demands.

- Integrated autofocus and physical substrate tilt correction
- True incubation system for bioprinting
- Expand your capabilities as your needs grow



STANDARD VATS



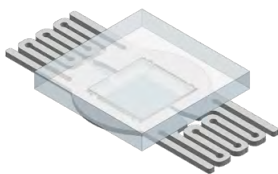
HEATABLE MATERIAL VATS



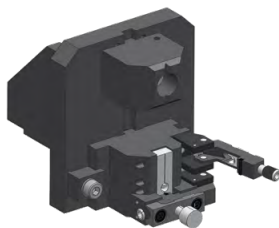
BORDERLESS VATS



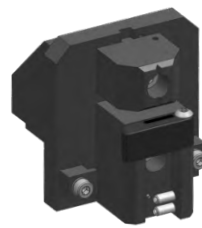
WORKING DISTANCE (WD+) VAT



STANDARD SUBSTRATES AND HOLDERS



SINGLE BARE OPTICAL FIBER AND FIBER-OPTIC FERRULE



FIBER ARRAY HOLDER



WAFER CHUCKS



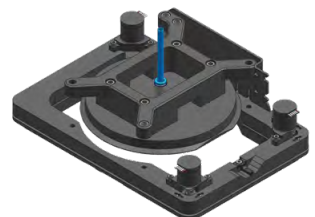
VARIABLE TILT INSERT



BIO UNIT



WELL PLATE STAGE INSERT



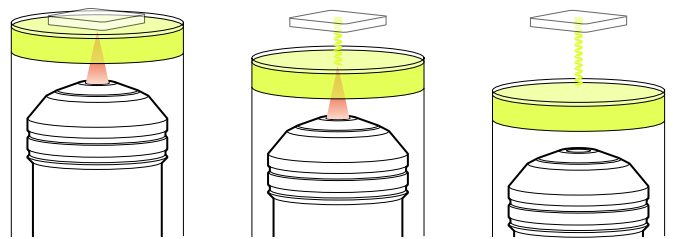
4" WAFER CHUCK WITH INTEGRATED TILT CORRECTION

Multiple print setups and substrate compatibility for greater application flexibility

NanoOne's dip-in-free printing approach enables multiple print configurations, allowing the process to be optimized for different materials, substrates and part geometries. This gives users the flexibility to choose the best setup for high aspect ratio geometries, printing on pre-structured parts or pre-processed substrates, in-chip fabrication or sterile bioprinting workflows.

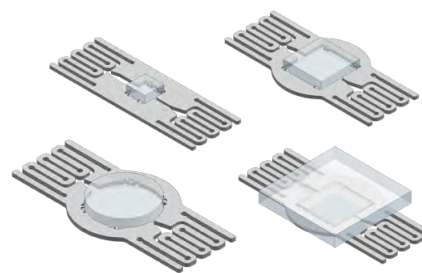
Vat print setup

In vat print setup, the resin is held in a dedicated vat with a precision glass window above the objective, keeping the objective clean while maintaining stable focusing conditions. A thin liquid resin layer remains between the glass window and the forming part, allowing smooth layer-by-layer fabrication as the structure is gradually drawn out of the vat. Larger areas or arrays are produced by printing individual fields of view as adjacent blocks, enabling high-precision fabrication on substrates beyond 40×40 mm and build heights above 40 mm.



FLEXIBLE VAT OPTIONS

- Protective window for clean optics
- Equipped with cap for convenient resin handling
- Standard vats in three different sizes
- Heatable vat for advanced materials
- WD+ vat for greater working distance
- Borderless vats for printing of areas beyond 40×40 mm

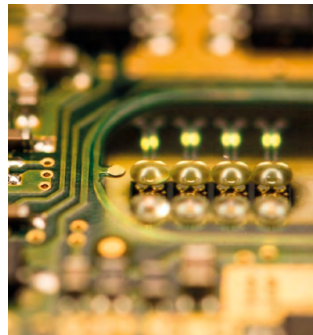
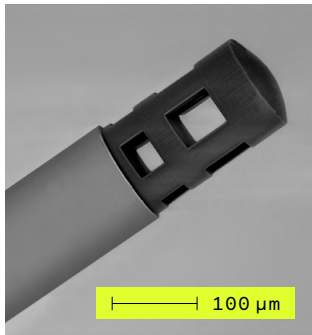


WIDE SUBSTRATE COMPATIBILITY

- Compatible with standard microscopy formats
- Accommodates various standard glass substrates ranging from 10×10 mm to 40×40 mm
- Fast and repeatable setup
- Suitable for general microfabrication and prototyping workflows

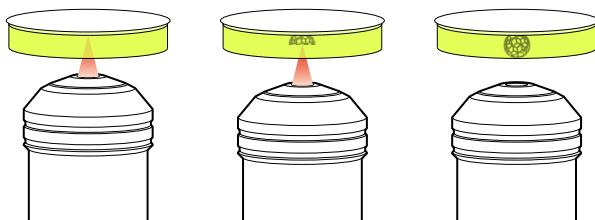
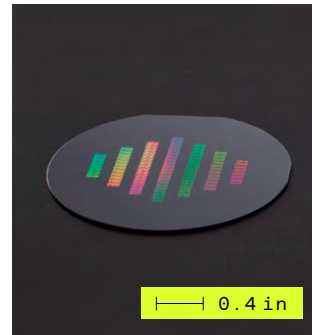
CUSTOM CHIPS AND NON-STANDARD SUBSTRATES

- Fabricate on photonics chips, PCBs and optical fiber tips
- Automatic alignment down to 50 nm accuracy to replace pick-and-place methods
- Printing on an FAU with up to 8 fibers in a single print job with automatic fiber core detection
- Aligned facet-attached microlens printing



WAFER PRINTING – 1", 2", 3" & 4"

- Compatible with standardized wafer formats including silicon, glass or aluminium nitride wafers
- Supports both pre-coated wafers and liquid resin workflows
- Enables wafer-level precision structures for microelectronics and photonics



Top-down print setup

Designed for highly viscous resins and precision fabrication on wafers and within chips

- Complex freestanding structures
- Manufacturing within microfluidic chips
- Enables sterile manufacturing
- Compatible with wafers up to 6"



Bottom-up print setup

Suitable for structures printed within liquid resins, including biomaterials

- Compatible with a broad range of resins, including biomaterials
- Supports glass-bottom substrates
- Enables sterile manufacturing workflows

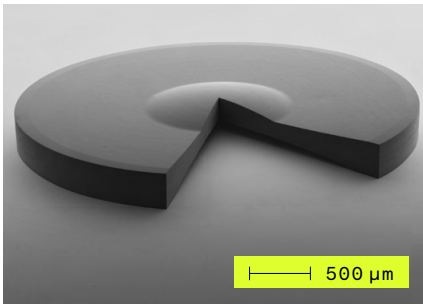
CELL CULTURE & MICROFLUIDIC SUBSTRATES

- Compatible with standard substrate formats used in cell and tissue workflows including microtiter plates (up to 96 wells)
- Ensures automated printing of structures into individual wells in a single print job
- Suitable for printing within standard microfluidic chips
- Enables printing within the bio unit incubation system

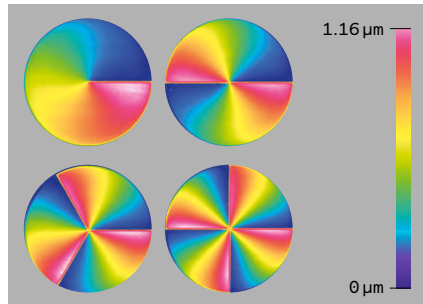


Optics & Photonics

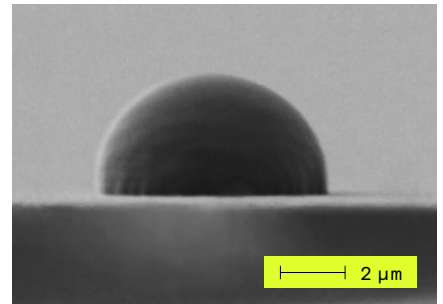
The NanoOne enables the fabrication of complex optical components with the precision, surface quality, integrated alignment and direct in-place printing capabilities required for advanced photonic applications. From freeform optics and fiber-tip elements to diffractive structures, the NanoOne supports both individual components and large arrays, enabling geometries and performance levels beyond the reach of many conventional manufacturing methods.



Stitch-free double-sided freeform lens
Ø 3 mm
Sq 10 nm



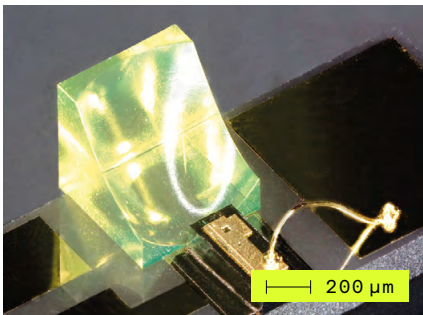
Spiral phase plate
Ø 125 µm
Sq 3 nm



Fresnel lenses
Sq 4 nm

INTEGRATION-READY FABRICATION

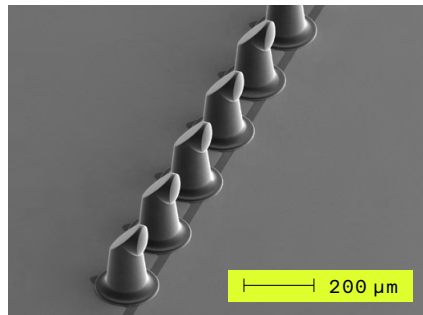
Printing directly on custom photonic chips with active alignment and in-situ corrections, for high-yield serial production and fast development iterations.



Parabolic mirror printed in front of quantum cascade laser (QCL)

AUTOMATIC FIBER CORE ALIGNMENT

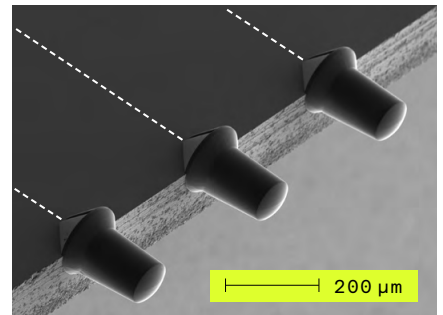
Supports multi-fiber alignment and direct printing with guaranteed pinpoint accuracy, including angular alignment relative to the fiber core. This makes it possible to implement beam shaping, coupling, redirection, and complex diffractive structures directly on bare or assembled fibers.



TIR collimators on fiber array unit (FAU)
Sq 6 nm

HIGH THROUGHPUT OPTICS DEVELOPMENT

Facet-attached microlenses in 10–30 seconds and 250 µm microlenses in just 2–3 seconds. Achieve exceptional dimensional and positional accuracy without iterative correction, reaching below 10 nm vertical surface roughness with a 40x objective.

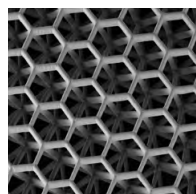
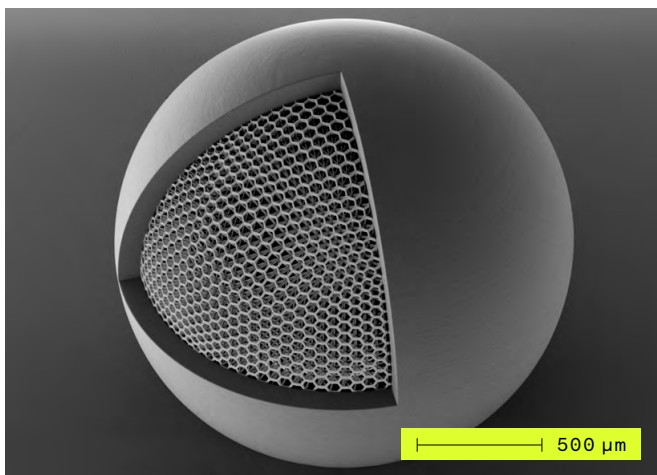


Facet-attached micro-lenses
Sq 9 nm

All Sq surface roughness values have been measured according to ISO 25178 (L-filter Nic: 8 µm)

Fusion and high-energy-density physics

UpNano's technology enables precisely defined foam, lattice and capsule architectures for inertial confinement fusion, laser-matter interaction studies and plasma diagnostics. The NanoOne supports deterministic control over complex 3D microstructures, helping researchers explore target concepts beyond the limits of conventional foam fabrication.



All-2PP printed capsule with internal hexagonal foam layer

Surface roughness: Sq 15 nm
Outer shell diameter: 2 mm
Shell thickness: 100 μm
Foam layer thickness: 125 μm
Strut diameter: 5 μm
Hexagonal foam with nominal tangential cell size of 62.5 μm

2PP is explored for the fabrication of wetted-foam fusion target concepts at the National Ignition Facility (NIF). In 2026 Moestopo et al. reported the first fully 2PP-printed wetted-foam capsule with 3 mm outer diameter, demonstrating that complex fusion targets can be fabricated in a single printing process.

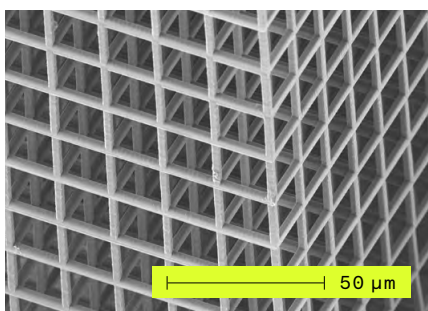
In the initial study, capsules showed stitching artifacts and limited surface quality. UpNano has since optimized the printing process and produced a 2 mm fully stitching-free capsule with a surface roughness of Sq 15 nm.



Application reference:
Moestopo et al.,
Fusion Sci. Technol.,
DOI: 10.1080/15361055.2025.2605605.

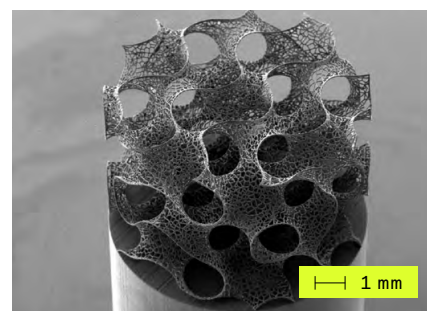
FOAM HOMOGENIZATION TARGET

UpNano-printed cubic lattice foam applied as a model target to study ultrafast homogenization under proton heating and X-ray probing.



Application reference:
Wegert et al., Scientific Reports,
DOI: 10.1038/s41598-025-30010-8.

Voronoified gyroid structure printed on target holder using Adaptive Resolution



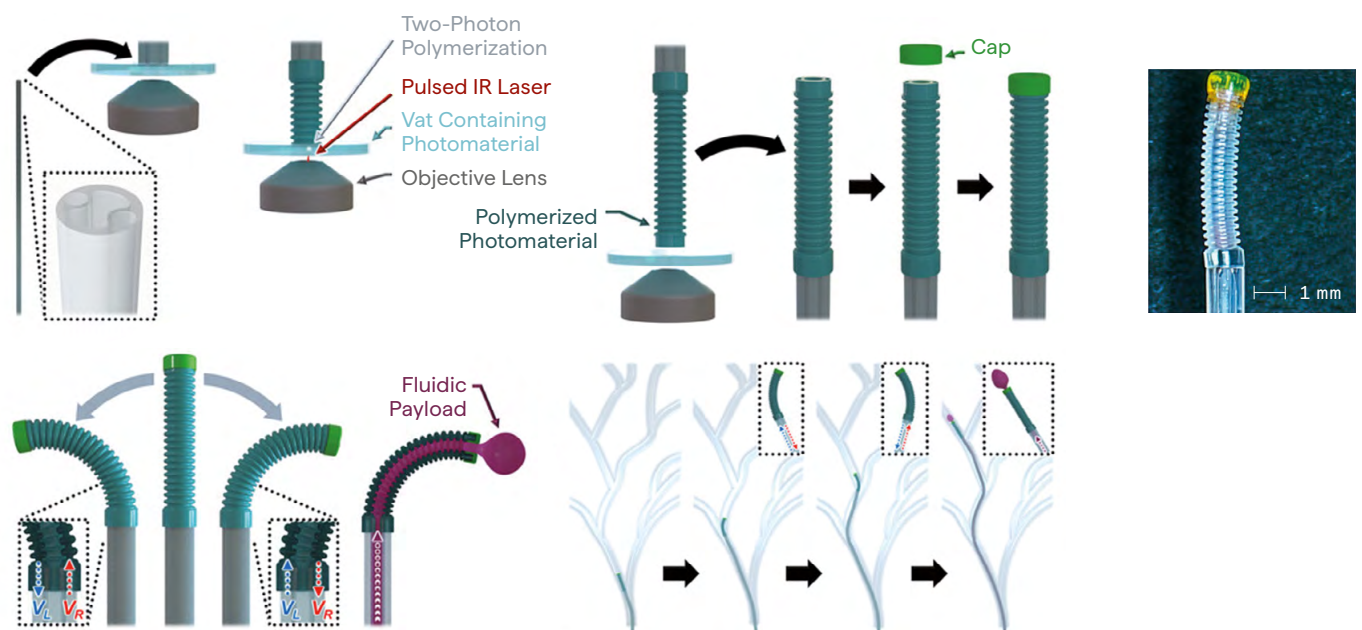
Biomedical devices

The NanoOne facilitates fabrication of complex biomedical microdevices with fine 3D features, integrated channels and application-specific geometries. From minimally invasive medical tools to microinjection and assisted reproduction platforms, 2PP supports rapid development and small-series production at the interface of engineering, biology and translational medicine.

FLUIDICALLY STEERABLE MICROCATHETER

3D-nanoprinted soft robotic microcatheter tip with integrated fluidic actuation and payload delivery for guidewire-free navigation in complex vasculature.

Adapted from Felix et al., Adv. Robot. Res., DOI: 10.1002/adrr.202500197, CC BY 4.0.

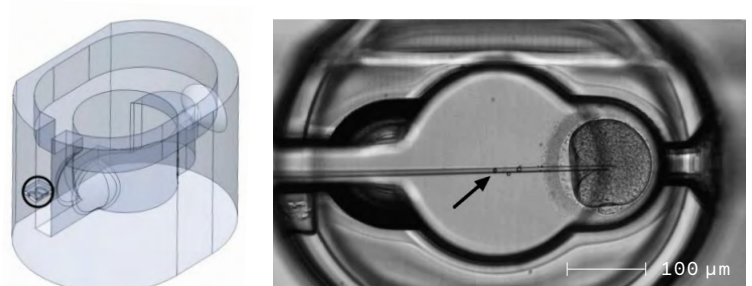


MicroICSI DEVICE FOR ASSISTED REPRODUCTION

2PP-fabricated microwells simplify oocyte positioning and handling during assisted reproduction microinjection workflows.

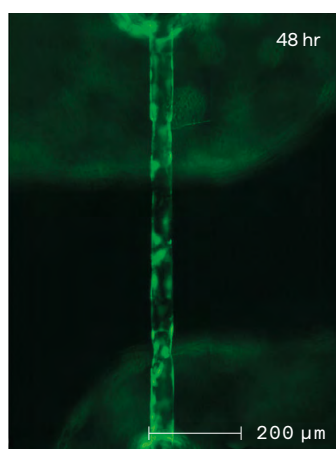
Adapted from McLennan et al., J. Assist. Reprod. Genet., DOI: 10.1007/s10815-023-03018-0, CC BY 4.0.

Ongoing clinical study has already resulted in multiple pregnancies using the device.



Microfluidics

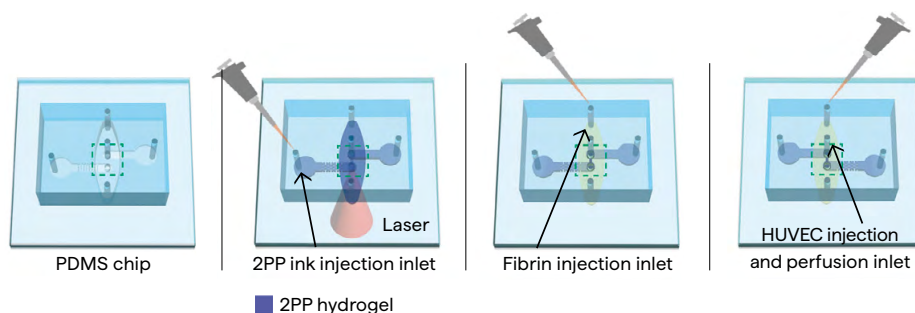
The NanoOne supports high-resolution 3D microfluidics beyond planar manufacturing, combining strong crosslinking, mechanical stability and high design freedom. It is suited for rapid prototyping and small-series production of complex channels, nozzles, emitters and embedded flow structures for sample delivery, droplet generation, lab-on-chip, biological and fluidic actuation applications.



PERFUSABLE VASCULATURE-ON-CHIP

2PP-printed hydrogel channels inside a microfluidic chip support perfusable endothelial–fibroblast co-culture.

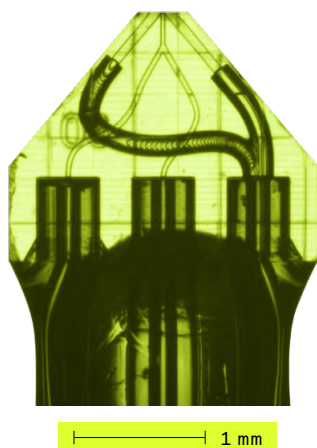
Adapted from Cantoni et al., Adv. Mater. Technol., DOI: 10.1002/admt.202300718, CC BY 4.0.



LIQUID SHEET JET FOR XFEL SAMPLE DELIVERY

3D-printed microfluidic nozzle with integrated liquid and gas channels for ultra-thin, stable sheet-jet sample delivery at XFELs.

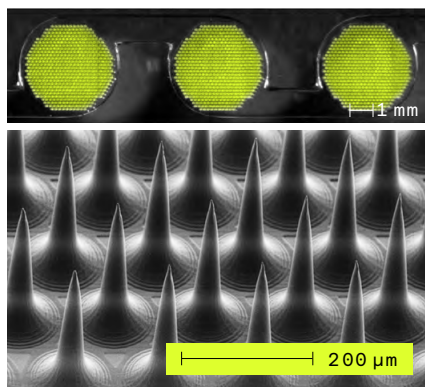
Adapted from Konold et al., IUCr, DOI: 10.1107/S2052252523007972, CC BY 4.0.



ACOUSTOFLUIDIC MICROMIXER

2PP-printed microneedle arrays integrated into microfluidic channels act as ultrasonic microresonators, generating localized acoustic streaming for rapid on-chip mixing and biochemical assays.

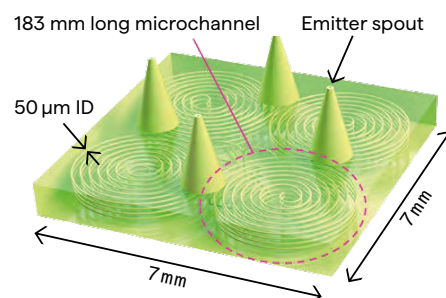
Adapted from Luk and Tenje, Ultrasonics, DOI: 10.1016/j.ultras.2026.108181, CC BY 4.0.



CUBESAT ELECTROSPRAY THRUSTER ARRAY

Modular 3D-printed CubeSat thruster with 2PP-fabricated microfluidic emitter modules for uniform propellant delivery and compact electrospray propulsion.

Adapted from Kim and Velásquez-García, Adv. Sci., DOI: 10.1002/advs.202413706, CC BY 4.0.



Materials science

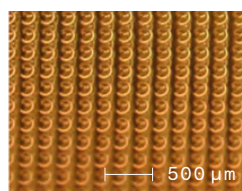
The NanoOne supports material science through 2PP fabrication of precisely defined micro- and nanoarchitectures, from inorganic microstructures and functional hydrogels to soft, externally actuated 4D materials. Its vat-based printing approach provides greater freedom for novel material development by preventing direct contact between resin and objective, protecting sensitive optics from damage.



2PP-DERIVED METAL STRUCTURES

2PP-patterned organic–inorganic photoresins can be converted into complex 3D tungsten and tungsten carbide microstructures for applications in micromachining, metamaterials and catalysis.

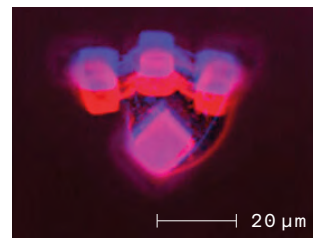
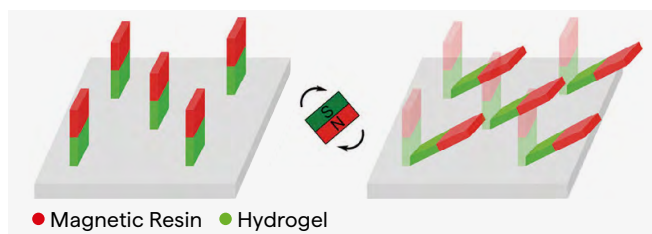
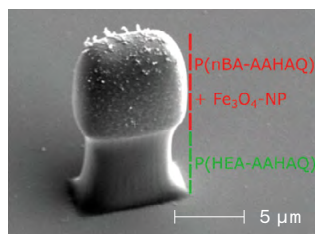
Adapted from Luitz et al., Adv. Eng. Mater., DOI: 10.1002/adem.202201927, CC BY 4.0.



THz CHIRAL PHOTONIC METAMATERIALS

Gold-coated 2PP-printed helix arrays embedded in PDMS create mechanically tunable THz metamaterials with strong polarization-selective optical response.

Adapted from Choi et al., Adv. Science, DOI: 10.1002/advs.202507931, CC BY 4.0.



4D SOFT MATERIALS FOR CELL STIMULATION

2PP-printed hydrogel–magnetic resin microactuators use embedded magnetic nanoparticles to remotely apply controlled mechanical stimulation to cells.

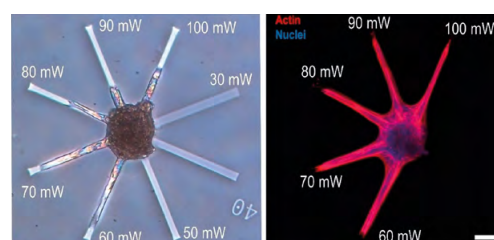
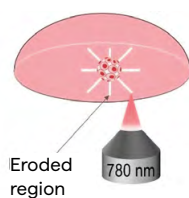
Adapted from “A Gym for Cells,” Geid et al., Adv. Funct. Mater., DOI: 10.1002/adfm.202419614.

PHOTODEGRADABLE HYDROGELS

Coumarin-based hydrogels enable fast two-photon-based subtractive micro-erosion of hydrogel networks for cell-compatible 3D microenvironments.

Adapted from Qiu et al., Angew. Chem. Int. Ed., DOI: 10.1002/anie.202404599, CC BY 4.0.

Coumarin-based gels



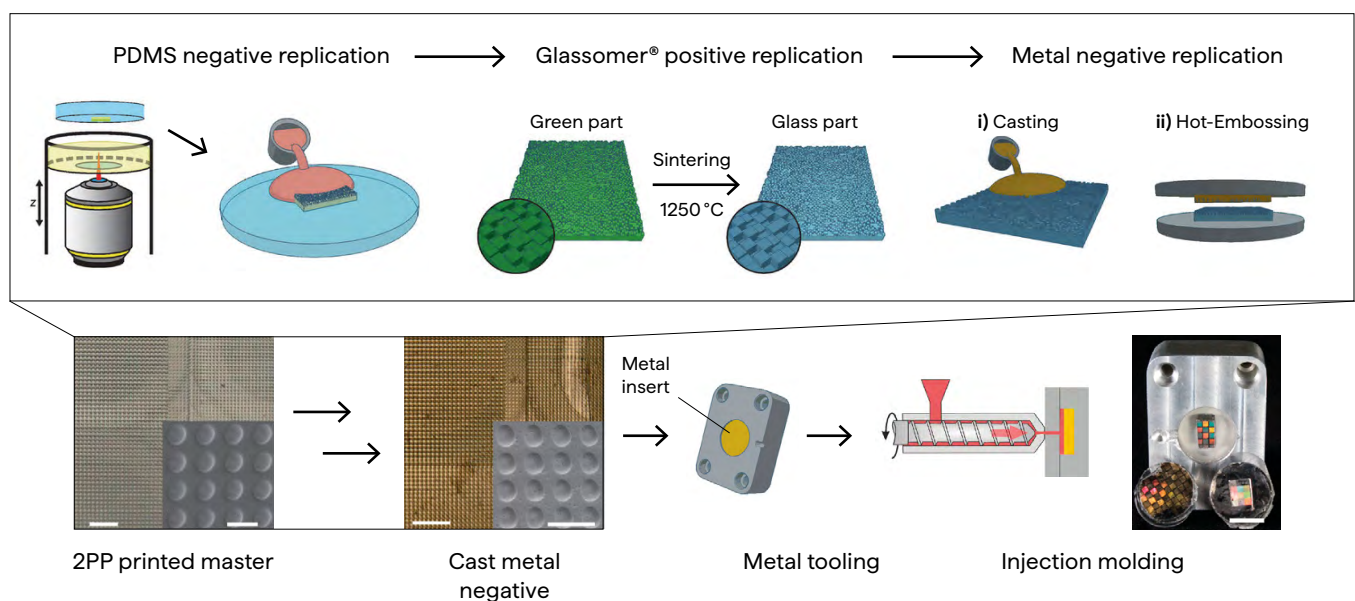
Mastering & replication

The NanoOne supports high-resolution 2PP master fabrication for replication workflows from soft lithography to industrial tool-based manufacturing. Adaptive Resolution technology enables detailed 2.5D and 3D microtopographies to be transferred via PDMS molding, NIL, casting, hot embossing or microinjection molding into materials that are not directly accessible by 2PP.

SUB-MICRON TOOLING FOR POLYMER REPLICATION

2PP-printed master structures are transferred into fused silica glass and amorphous metal inserts for sub-micron polymer replication by casting, hot embossing and injection molding, with no visible tool wear after 300 cycles.

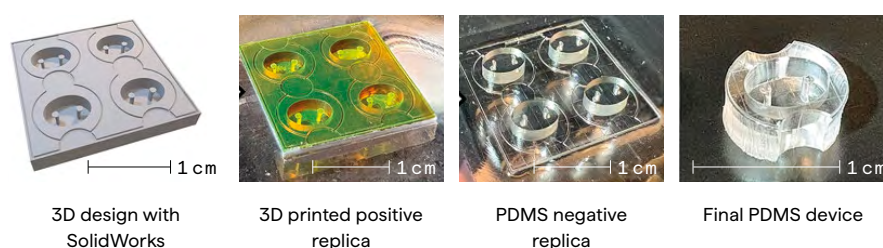
Adapted from Kluck et al., Adv. Sci., DOI: 10.1002/adv.202405320, CC BY 4.0.



A MICROPHYSIOLOGICAL PDMS DEVICE

Master fabricated with the NanoOne enables PDMS molding workflows for customized biological and microphysiological devices from CAD design to 3D-printed positive replica, PDMS mold and final device.

Adapted from: Kim et al., Advanced Healthcare Materials, 2025, DOI: 10.1002/adhm.202502711, licensed under CC BY 4.0.



Biofabrication

The NanoOne's powerful laser, smart software solutions and material flexibility support a wide range of biofabrication methods for applications such as microphysiological systems and tissue engineering. With the bio unit incubation system, printing in the presence of living cells under controlled environmental conditions is also possible.



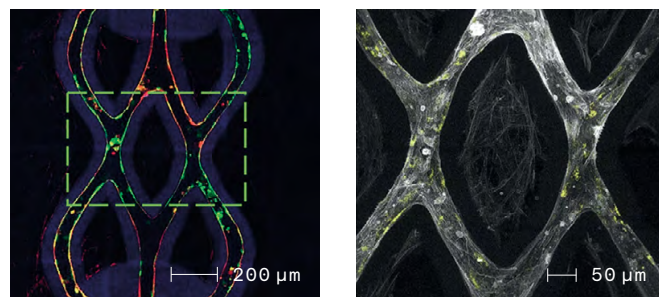
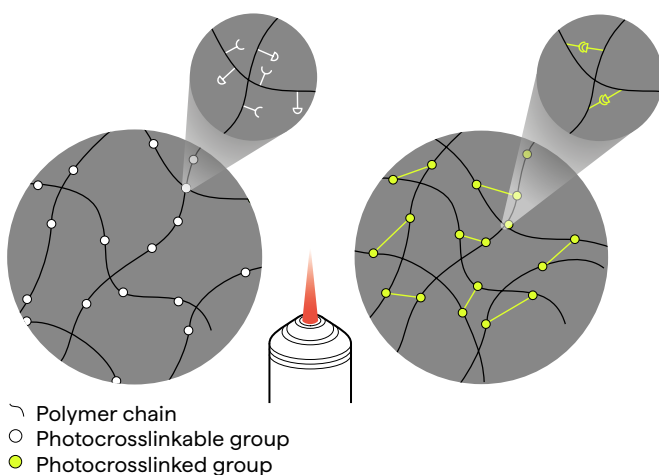
Read our white paper
on high-resolution
bioprinting

Processing hydrogels with the NanoOne: Multiple methods of operation with one system.

01. ADDITIVE

Photocrosslinking

Covalent links between polymer chains are formed upon laser irradiation.



● GFP ● F-actin ● MPL hydrogel ● Nucleus ○ F-actin

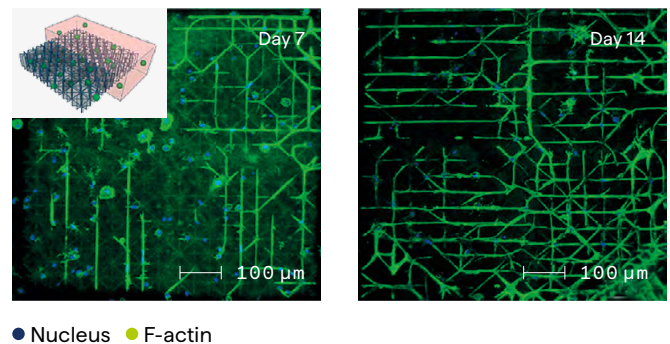
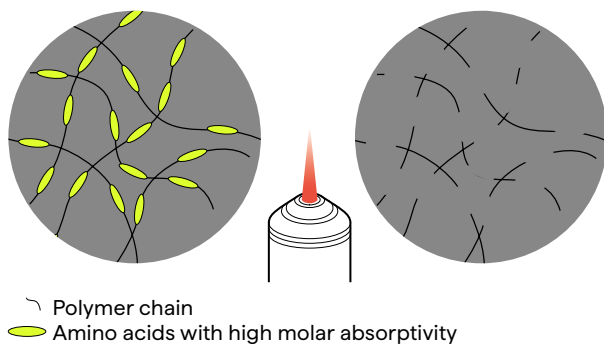
Microchannel network (50 μm diameter) structured with 2PP hydrogel (blue), endothelial cells (GFP labelled) on the inside and fibroblasts in the surrounding fibrin hydrogel.

Adapted from Cantoni et al., Adv. Mater. Technol., 10.1002/admt.202300718, CC BY 4.0.

02. SUBTRACTIVE

Photoablation

Proteins are denatured upon laser irradiation.
Thermal-induced degradation at higher laser powers.



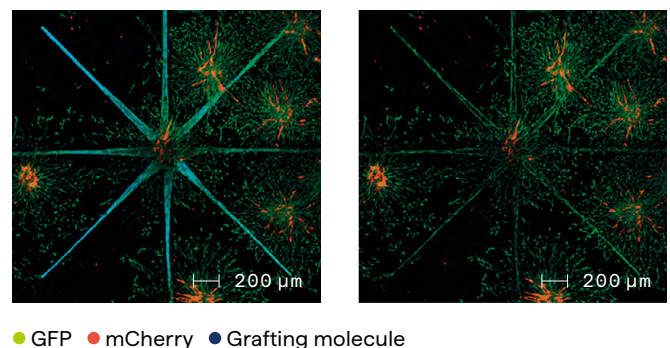
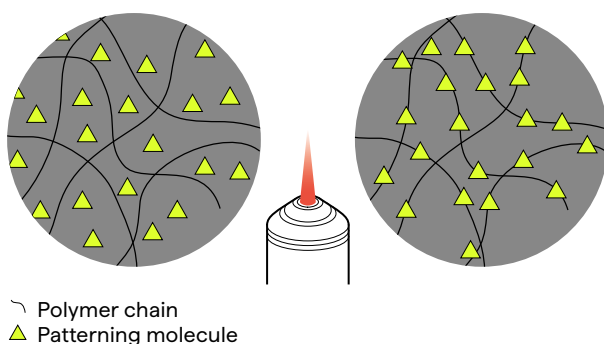
Light-induced chemical denaturation by breakage of hydrogen bonds and disassembly of the protein structure. Confocal images of mesenchymal stem cells on day 7 and day 14. The cells are aligning to the photoablated pattern shown in the left inset.

Adapted from Gehre et al., Acta Biomater., DOI: 10.1016/j.actbio.2023.11.042, CC BY 4.0.

03. FUNCTIONALIZATION

Photografting

Reactive molecules are covalently bound to the polymer matrix.

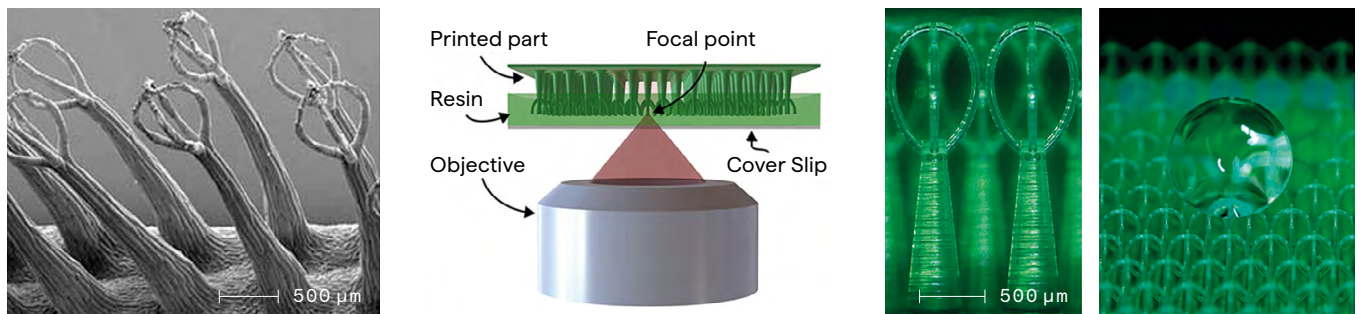


Insertion of a hydrophilic molecule into the polymer backbone upon laser irradiation. Endothelial cells are sensing the different physicochemical properties and are migrating in accordance to the grafted pattern.

Adapted from Sayer et al., Sci. Rep., DOI: 10.1038/s41598-022-11612-y, CC BY 4.0.

Biomimetic structures & surface functionalization

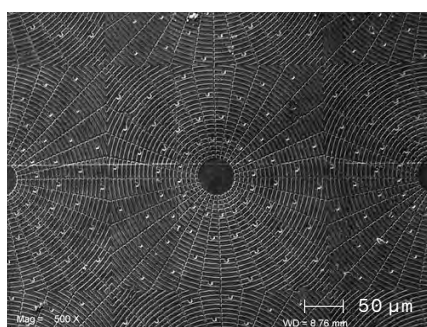
The NanoOne 2PP printing platform transforms surface design into functional micro-architectures. By fabricating complex 2.5D and 3D topographies with high precision, surfaces can be engineered to control wetting, cell interaction, optical response or biological adhesion through geometry. Printed structures can be used directly or as masters for replication into application-relevant materials.



BIOMIMETIC WETTING-CONTROL SURFACE

2PP-printed *Salvinia molesta*-inspired trichome arrays demonstrate geometry-driven water repellence and droplet pinning in a monomaterial microstructured surface.

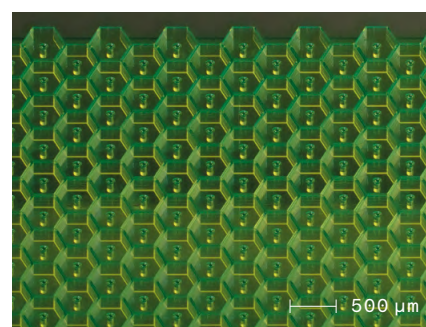
Adapted from Stubberud et al., ACS Appl. Mater. Interfaces, DOI: 10.1021/acsami.6c06063, CC BY 4.0.



BONE-MIMETIC SURFACE FUNCTIONALIZATION

2PP-derived osteon-like microtopographies functionalize PCL surfaces with bone-inspired cues that promote stem-cell attachment and osteogenic response.

Adapted from Vostatek et al., Macromol. Biosci., DOI: 10.1002/mabi.202400311, CC BY 4.0.



LARGE-AREA STITCH-FREE PLANAR OPTICAL ELEMENTS

Triangular diffraction grating used as master for holography.

Sq 4 nm
Full area: $3 \times 3 \text{ mm}^2$
Center area: $1 \times 1 \text{ mm}^2$
Prism: $21 \times 14 \text{ µm}^2$ (W × H)



Think3D Software: Intuitive control. Powerful results.

Think3D is UpNano's dedicated software for preparing, managing and monitoring NanoOne print jobs. Designed with both ease of use and advanced customization in mind, it gives users a clear, efficient workflow from design to finished part.

✓ EASY TO LEARN, EFFICIENT TO USE

User-friendly interface that simplifies print preparation and machine operation.

✓ ONE ENVIRONMENT FROM START TO FINISH

Everything to prepare and manage a print job is accessible within one interface from setup of print parameters to remote monitoring.

✓ SUB - JOBS

Unique parameters can be applied to individual regions within one job, reducing print time and maximizing efficiency.

✓ PRINTING PROFILES

Predefined print profiles optimized for objectives and resins simplify setup and support consistent, high-quality results.

KEY FEATURES

- Real-time slicing without waiting for data processing
- 3D print preview for intuitive control over geometry and job setup
- Adaptive Resolution to adjust speed and precision where needed
- 3D Adaptive Resolution (3DAR) for superior surface quality
- Remote monitoring of print process
- Compatible with STL and G-code workflows
- Built-in job queue for streamlined production management

Purpose-developed resins for the NanoOne platform

The NanoOne is an open material platform, compatible with third-party and custom materials. At the same time, UpNano's resin portfolio is engineered to complement the platform's precision, throughput, and performance across a wide range of applications.

WHY UPNANO RESINS?

- Optimized for the NanoOne
- Tailored for specific applications
- Optically transparent options
- ISO 9001 certified resin production
- Certificate of analysis on request
- Non-cytotoxic materials according to EN ISO 10993-5:2009



Scan for in-depth
mechanical data of
UpPhoto & UpDraft

STANDARD PRODUCTION

UpPhoto

High-performance functional parts
→ Fully cured after printing
→ Autoclavable and reflow approved
→ Certified non-cytotoxic*

UpDraft

Fast prototyping resin optimized for throughput
→ Fully cured after printing
→ Fast printing cycles

OPTICALLY TRANSPARENT

UpOpto

High transmission down to 380 nm and ultra-low autofluorescence
→ UV post-curing
→ Optically transparent
→ Certified non-cytotoxic*

UpFlow

Low-viscosity, low-autofluorescence resin for printing microchannels
→ UV post-curing required
→ Optically transparent
→ Certified non-cytotoxic*

HIGH-RESOLUTION APPLICATIONS

UpSol

Sol-gel hybrid allows printing of complex structures with overhangs and undercuts
→ Fully cured after printing
→ Print free-floating elements and 2.5D and 3D microstructures

UpBrix 2

Refractive index-matched for ultrahigh-resolution applications
→ Fully cured after printing
→ Ideal for 2.5D patterns and structures in the nanometer range

SPECIAL APPLICATIONS

UpThermo

High-temperature applications and great mechanical stiffness
→ Fully cured after printing
→ Heat deflection temperature (HDT-B) >300°C
→ Certified non-cytotoxic*

UpQuartz

Fused silica glass offering high thermal and chemical resilience
→ Biocompatible
→ High optical transmission & inertness
→ High mechanical strength

UpBlack

Low-transmissive and optically black light blocking for UV-VIS
→ Fully cured after printing
→ Transparent to NIR and IR
→ Certified non-cytotoxic*

BIOMATERIALS

For hydrogel and advanced biomaterial workflows, UpNano also offers partner materials developed together with BIO INX optimized for the NanoOne platform.

*Certified according to EN ISO 10993-5:2009

Choose the right NanoOne platform for your application

NanoOne systems are available with either a 780 nm red laser or a 515 nm green laser, allowing users to choose the platform that best matches their material requirements, precision targets and workflow priorities. While 780 nm systems are the versatile choice for a broad range of established 2PP applications, 515 nm systems enable higher precision and broader compatibility with optically transparent materials.

NanoOne / red

780 nm wavelength

VERSATILE PLATFORMS FOR CLASSIC 2PP WORKFLOWS
AND BROAD APPLICATION COVERAGE

Pros: Strong all-around capability, established workflows and compatible with bio applications

250 mW* LASER POWER

- Entry-level platform
- For classic 2PP workflows and high-resolution microfabrication

1000 mW* LASER POWER

- Higher-power configuration
- For expanded process flexibility, challenging structures and more demanding applications

BIO PACKAGE

- 1000 mW system paired with our bio unit
- Integrated incubation system and controlled environmental conditions for biological workflows
- Ambient temperature control
- Active humidity control
- CO₂ level control



NanoOne / green 515 nm wavelength

PRECISION-ORIENTED PLATFORM WITH 30% HIGHER RESOLUTION COMPARED TO 780 nm LASER SYSTEMS

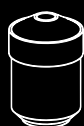
Pros: Access to special material chemistries, transparent resin advantages and smaller feature size control

400 mW* LASER POWER

- Precision platform
- For higher precision and broader compatibility with special chemistries and transparent materials

*Output power of the laser system. The power in the sample depends on the selected objective and is lower than the output power of the laser. For further information, ask the UpNano sales team.

Standard objectives across systems



40x



20x



10x



5x



10x

NanoOne / bio 1000 mW*	780 nm	x	x	x	x	x
NanoOne / red 250 mW*	780 nm	x	x	x		
NanoOne / red 1000 mW*	780 nm	x	x	x	x	
NanoOne / green 400 mW*	515 nm	x	x	x		
Numerical aperture		1.4	0.7	0.4	0.25	0.3
Working distance** (mm)		0.13	0.35	3.1	12.5	10
Immersion medium		Oil	Water	Air	Air	Air
Field of view diameter*** (mm)		0.5	1	2	4	2
Typical writing speed (mm/s)		150	300	600	1200	600
Throughput fine mode (mm ³ /h)	780 nm	0.05	0.25	4	30	6
	515 nm	0.025	0.125	2	15	3
Throughput coarse mode (mm ³ /h)	780 nm	0.25	2.25	40	300	60
	515 nm	0.125	1.13	20	150	30

* Output power of the laser system. The power in the sample depends on the selected objective and is lower than the output power of the laser. For further information, ask the UpNano sales team.

** The working distance is the physical distance between the objective and the focal plane including 0.17 mm coverslip. The effective printing depth can vary due to refractive index mismatches and the numerical aperture (NA).

*** Based on a field number of 20.

By adapting parameters, the NanoOne / red can achieve a throughput of >450 mm³/h

Besides the listed standard objectives, which are included with the purchase of a machine, further objectives are available for the platform, such as 100x, 63x, 60x, 4x or other specific objectives. Please ask for details.

Materializing great ideas.
Precisely.



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brochure

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