

# Shining a Light on Biosciences





# We help biologists push the frontiers of biofabrication



## Technology

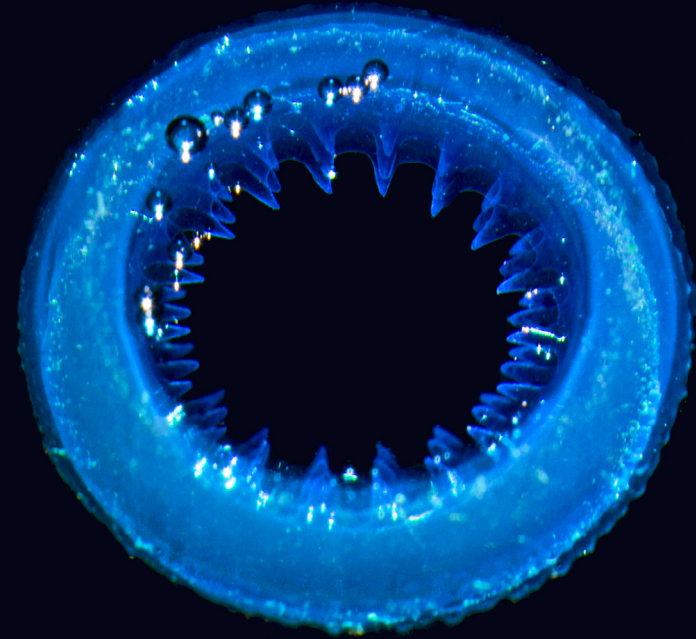
Tomographic 3D printing rapidly solidifies photosensitive inks in three dimensions, using shaped light beams from multiple angles. As the entire build volume is illuminated simultaneously, centimeter-scale biological systems are produced in just tens of seconds. After printing, the object is simply separated from the uncured ink and collected.

Our printing method is light-based, so it does not induce any shear stress on the printed cells. The remarkably low photoinitiator content (eg 1mg/mL LAP) and low light dose (<600 mJ/cm<sup>2</sup>) make tomographic bioprinting a cell-friendly technique.



# Tomolite

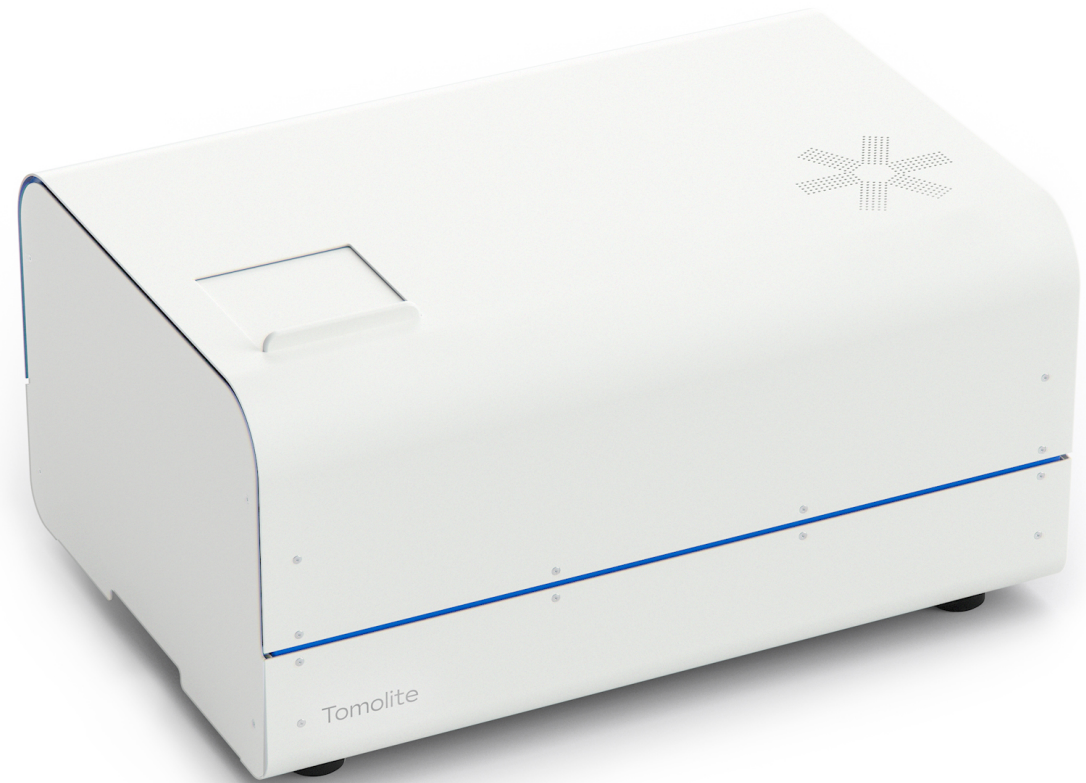
Complex living  
constructs  
shaped by light





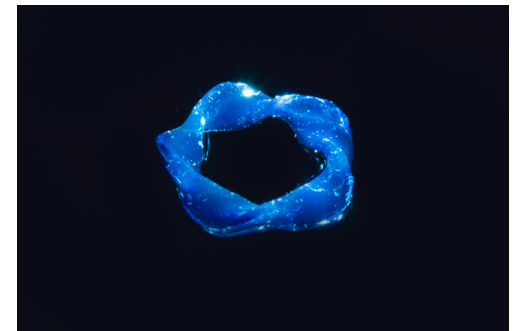
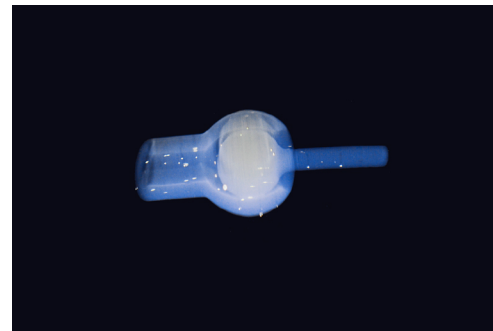
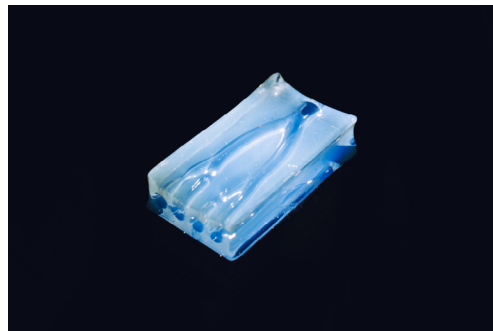
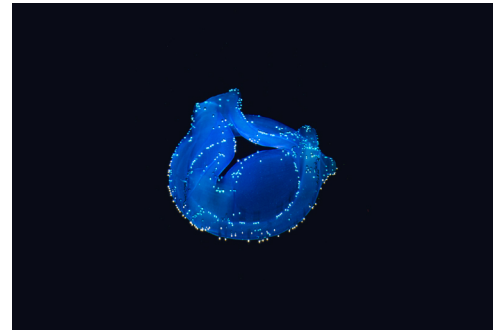
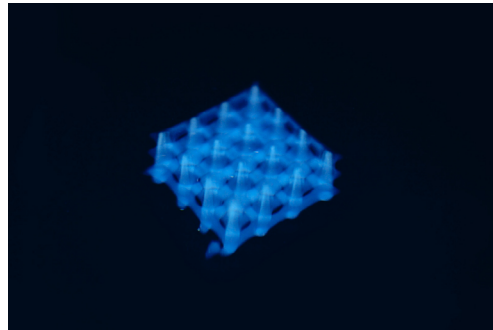
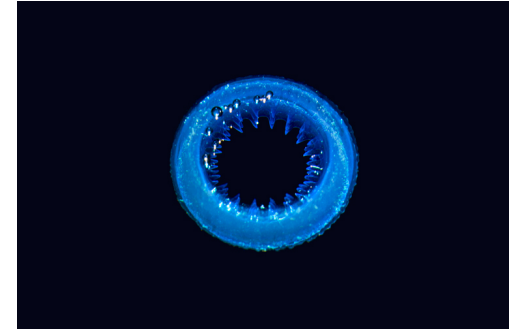
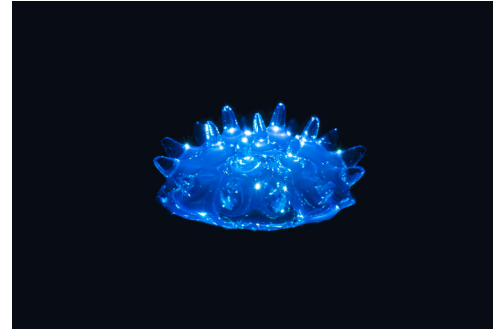
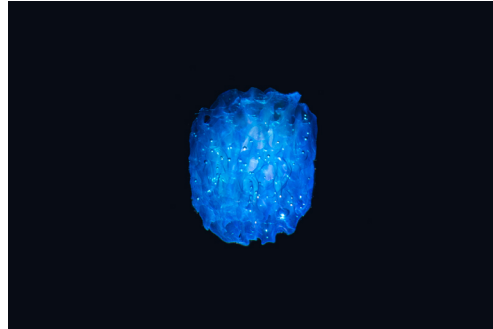
## Readily bioprinted

Tomolite leverages our contactless tomographic illumination technology to shape sensitive cells and biomaterials into biological systems, without impairing their viability. Volumetric printing not only preserves cells but also makes research more efficient by simplifying design iterations and statistical studies.





## Examples





## Specifications

Optical resolution	40µm
Indicative print time	30s – 120s (depends on material)
Build diameter	10mm
Build height	27.5mm
Light intensity	1 to 20mW/cm <sup>2</sup> (average at container) 50mW/cm <sup>2</sup> (maximum peak intensity)
Wavelength	400nm
Rotation speed	60°/s, max. 360°/s
Container materials	Autoclavable and reusable glass or polystyrene consumables
Container diameter range	15mm – 22mm
Compatible materials	hydrogels, acrylics and silicones
External footprint	30cm x 30cm x 60cm
Initial accessories kit	Precision chuck adaptor for vials Vial extraction tool

## Cell types printed to date

Parameters	Articular chondroprogenitor cells
Viability	>80%
Cell concentration	Max. 10 <sup>7</sup> cells/mL
Largest construct	12 x 12 x 3 mm

Parameters	Mesenchymal stromal cells
Viability	>85%
Cell concentration	Max. 10 <sup>6</sup> cells/mL
Largest construct	8.5 x 9.3 mm <small>Cylindrical</small>



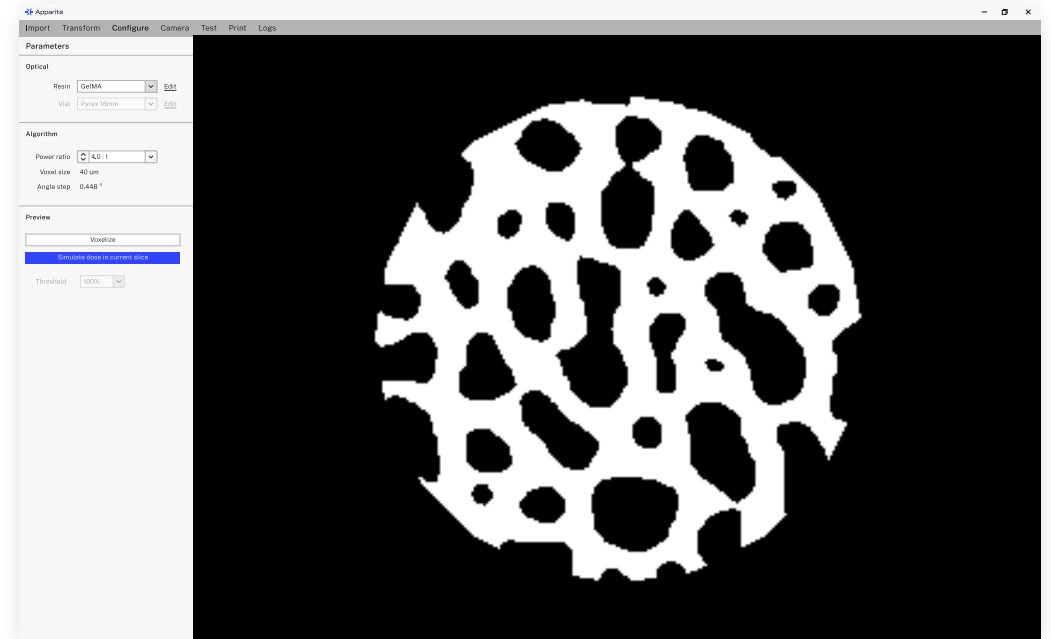
Apparite  
Rapidly configure  
and launch  
your 3D bioprint





## Load, Preview, Print.

Apparite facilitates the preparation of a print while giving users full control over the process parameters. In a few clicks, import the STL geometry of your constructs, configure the material properties and preview the computed light dose distribution.

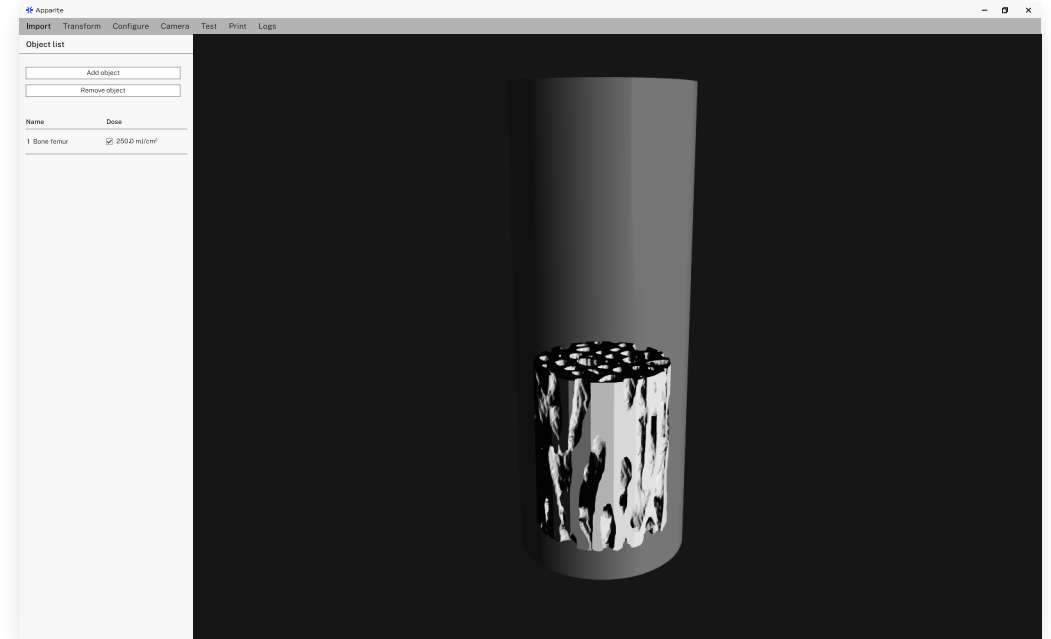






## Specifications

3D object format	STL
Multi-object printing	Supported
Transformations	Position Rotation Scaling
Beam computation time	Approximately 30s -90s (cloud-accelerated)
Print parameters	Dose Intensity Exposure time Print speed Number of rotations Projection rate
Computation parameters	Voxel size Angular step Dose contrast Resin compensation
Build volume monitoring	Live camera feed
Print log	Automatic
Dose estimation	Preview of dose distribution before printing Dose test procedure (with small volume of ink)
Supported operating system	Windows 7 and 10





# Contact us

## Let's work together

### Learn more

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