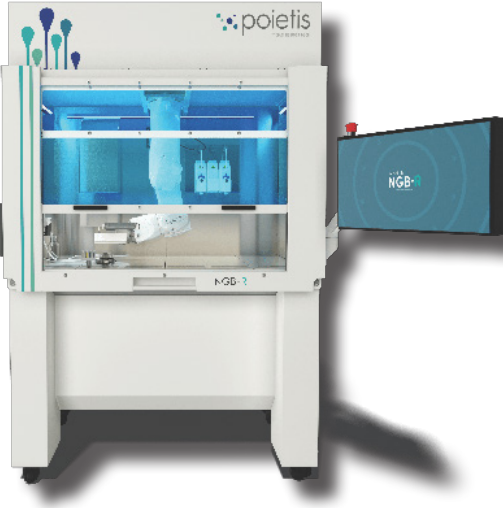


BIOPRINTER

NGB-R



The **NGB-R** is a multi-modal, 3D bioprinting platform designed and developed to print live tissues and organs. Combining laser-assisted and extrusion bioprinting, the NGB-R enables true versatility of bioprinting (from cells to multi-cellular spheroids) and offers the possibility of using a large number of biomaterials and hydrogels.

The NGB-R includes an embedded microscope for in-line cell printing monitoring and relies on a complete software suite for managing bioprinting protocols, from biological CAD to data analysis of manufacturing.

The Next Generation Bioprinting NGB-R platform from Poietis has been developed to overcome current tissue manufacturing shortfalls and solve critical limitations of existing 3D bioprinting technologies, thanks to single-cell resolution and learning-based methods. This platform integrates automation and robotics, and numerous online sensors – including cell microscopy – and Artificial Intelligence processing.



Multi-modality



Robotic Assisted



Integrated Microscope

Applications

Regenerative Medicine Advanced Therapies:

Regenerative medicine is a rapidly growing field that involves replacing or regenerating damaged or diseased cells, tissues or organs to restore normal function.

Drug Discovery & Therapeutic Testing:

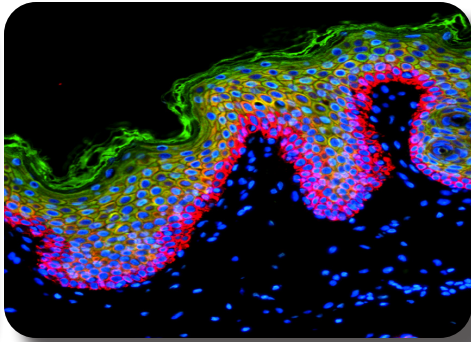
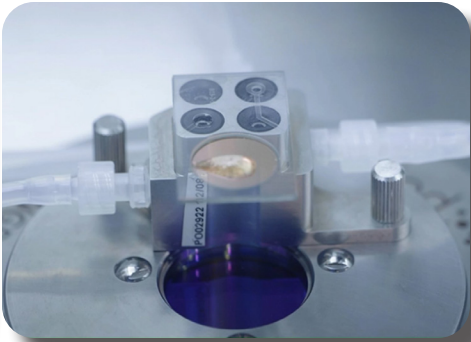
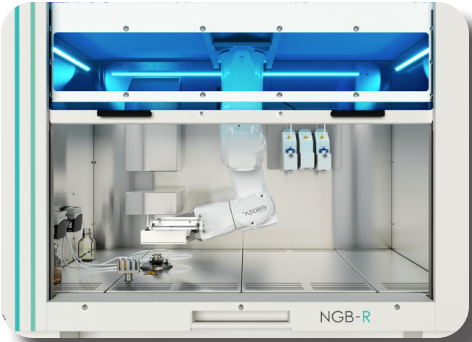
3D Bioprinted human tissues can bridge the gap in testing of therapeutics from preclinical animal models to in-human trials. In addition, the use of bioprinted tissue models allow for high-throughput screening of drugs.

Disease Modelling:

3D Bioprinting can be used to fabricate *in vitro* 3D disease modes, mimicking the structural and spatial features of the disease environment. This can be used to study the disease mechanism and test therapeutics.

Aesthetic Medicine & Cosmetic Testing:

3D Bioprinted tissues can replace animal models for testing of cosmetic products. 3D bioprinted tissue fabricated out of human cells are more ethical for validation of aesthetic products.



Features & Specifications

Multi-Modality, Laser-Assisted, Bio-extrusion Bioprinting:

The NGB-R incorporates 3 different bioprinting techniques all in one system:

- Laser-assisted-bioprinting (LAB)
- Bio-extrusion

High Cellular Viability: (>95%)

NGB-R's laser-assisted bioprinting technology is nozzle-free technique with no damage causing forces occurring in the process. As a result, cell viability reaches >95% and printed tissues become truly functional.

High-resolution, Precision and Printing Speed:

NGB-R is the first commercially available laser-assisted bioprinting system, allowing users to deposit micro droplets of cell bioink with a precision of a few microns at predesigned patterns.

Integrated Microscopy & Image Analysis Platform:

The NGB-R can come with an optional built-in microscope to acquire images of each individual tissue layer at each step of fabrication.

Microfluidic Cartridge:

This optional module includes a microfluidic cartridge and an automatized pipette for homogenization and multi-cellular loading

6 Axis Robotic Arm:

NGB-R is designed to address automation and reproducibility issues in tissue manufacturing; 6-axis robotic arm integrated within NGB-R allows semi to fully automated fabrication.

Unique Software Suite:

Unique user-friendly HMI software Zebr4D™ to design complex tissues.