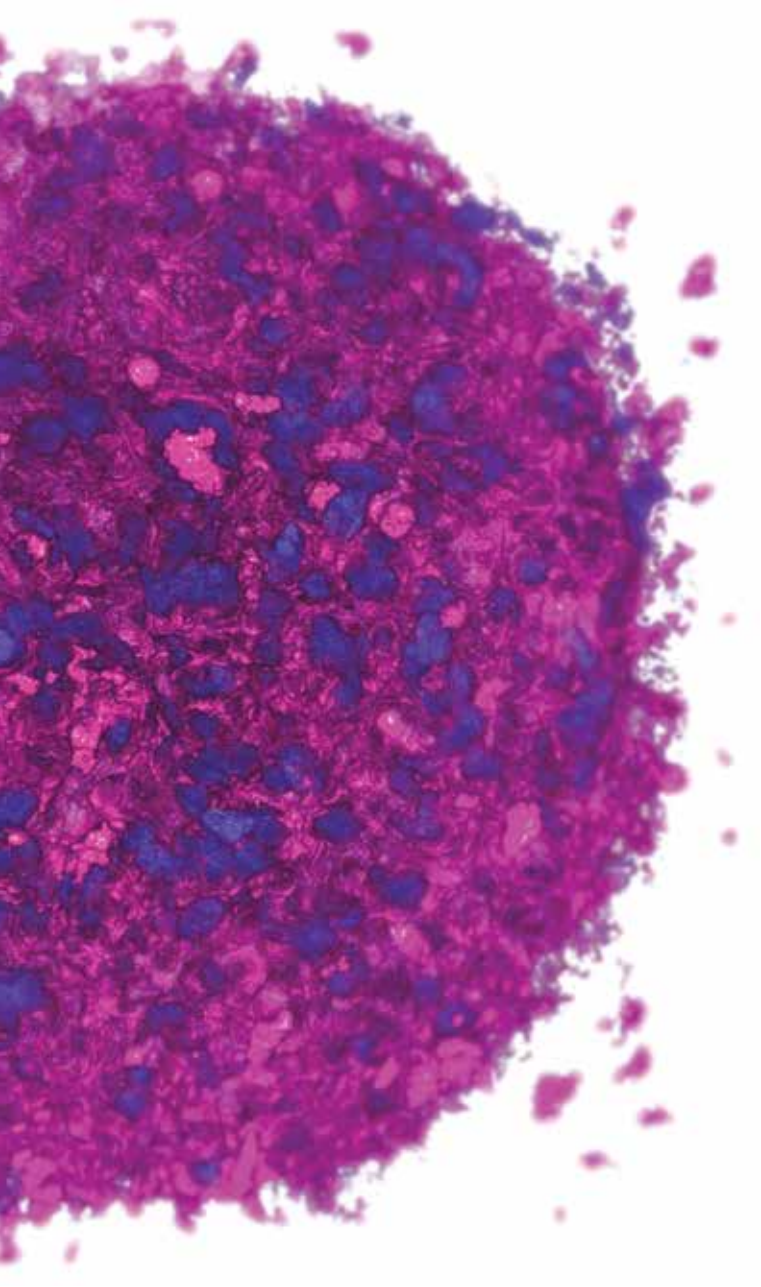
RASTRUM

Create impact with 3D cell biology

INVENTIA

INSPIRING SCIENCE

2D cell culture is dead.



Culturing cells in 2D has been the bedrock of biomedical research for decades. It is simple and efficient. But there is a big problem - cells don't grow in 2D in the body.

It is now well established that 3D cell models better represent human tissues[1]. They more accurately replicate biological processes and drug responses[2]. The age of 2D cell culture is over.

Implementing physiological 3D cell models in your lab will accelerate discovery and help generate high-impact research. But adopting 3D cell culture has not been easy… **until now.**

[1] Picollet-D'hahan (2016) Trends Biotechnol. 34, 757; Yamada (2007) Cell 130, 601; Knight (2015) J. Anat. 746;

[2] Breslin (2013) Drug Discov. Today 18, 240; Mogilner (2011) Trends Biotechnol. 21, 692

Unlike any other 3D bioprinting platform, RASTRUM makes 3D cell models:

EASY

EFFICIENT

REPRODUCIBLE

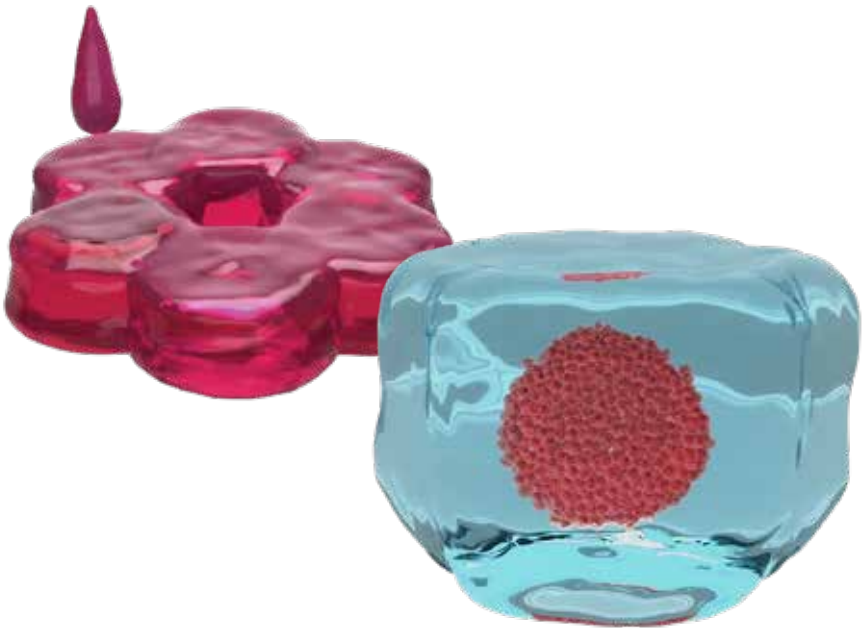
POWERFUL

An ideal 3D cell model should be complex.

Creating it should be simpler.

RASTRUM makes complex 3D cell biology simple by unleashing the power of **digital 3D bioprinting.**

With its unique technology, RASTRUM places individual cell types and matrix components drop-by-drop (akin to an inkjet printer depositing pixels of colour), layer-by-layer to build a 3D cell model, giving you capability like never before to recreate *in vivo* biology.



The RASTRUM platform

RASTRUM Bioprinter

RASTRUM Print Head technology

- Control the placement of droplets as small as 50nL
- Print different cell types and matrix components simultaneously from 10 independently addressable nozzles
- Rapid fly-by printing generates a full plate of 3D models in <30 mins.

Fluidics handle <200µL (i.e. of a cell suspension) with negligible loss, while preventing cell settling

Completely integrated biological safety cabinet (BSC) with dual HEPA filtration. No need to take up space in your BSC.

Simple status lights, no buttons to push!

Supports standard well plate formats (or a petri dish)

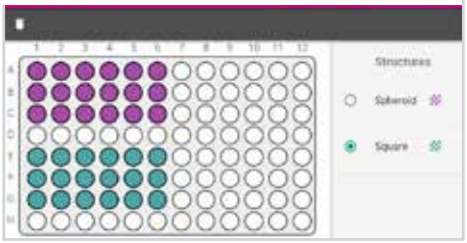
Removable stainless steel surfaces make cleaning easy

Simple connections - just USB, power and compressed air (mini-compressor can be supplied). 10 minutes to install.

Compact standalone benchtop unit 482 x 560 x 491 mm (W x D x H)

RASTRUM Orchestrate software

- Extremely intuitive and user friendly software. Automated workflows built for biologists give you back valuable time.
- Using pre-validated RASTRUM protocols? Just allocate 3D models across your well plate
- Designing your own 3D model? RASTRUM Orchestrate makes it easy, with no previous knowledge of 3D modelling required.



The first 3D bioprinting platform designed for high-throughput cell biology.

RASTRUM Kits

- Ready-to-use printing kits for specific 3D models enable plug-and-play operation
- Kits contain all you need - just add your cell suspensions.
- Near-field communication (NFC) chip enables intelligent kit recognition to automate printing protocols.
  It tells the printer what to do!

The printable extracellular matrix (ECM)

- Key to the creation of 3D cell models using RASTRUM is the printable ECM.
- We've developed an ever expanding library of hydrogel systems that mimic the native ECM and are printable via drop-on-demand.
- Highly tunable mechanical and biofunctional properties to suit your cell type and application.
- Designed for compatibility with your existing downstream analysis methods. Hydrogels are transparent, permeable and enable cell recovery with easily triggered dissolution.

RASTRUM can be easily integrated into your current lab setup!

Contact us to discuss
possibilities in your research!

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