

Patents in 3D Bioprinting

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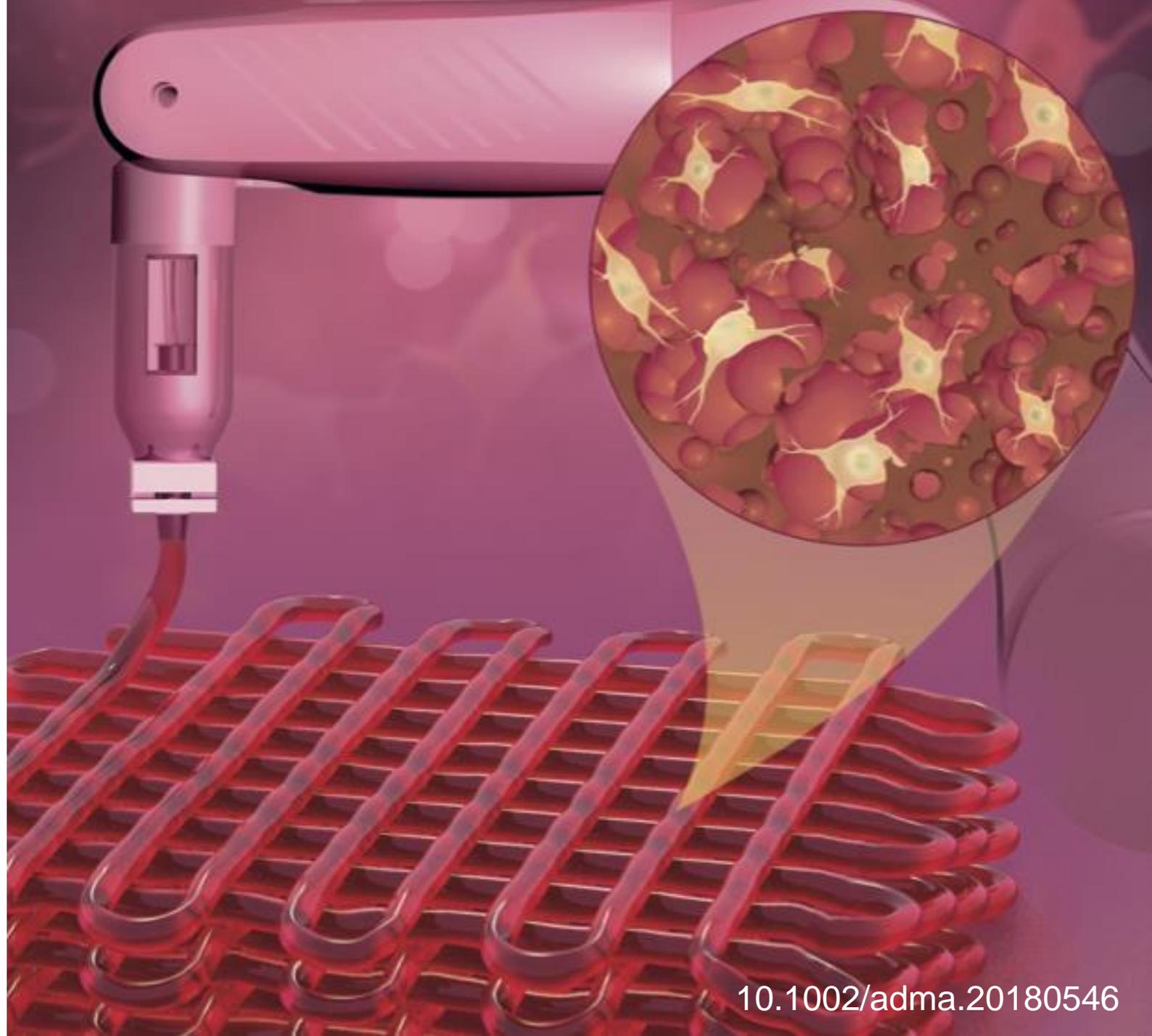


What is 3D bioprinting?

Bioprinters micropattern of cell-laden bioink with desired macro-geometry.

The **bioink** provides initial structure and nutrients. Over time, the cells consume and replace the bioink.

Cells behave differently in a 3D environment – they express different nutrients and behave in a more physiologically relevant manner.



Most patents are in biomaterials and platforms

Biomaterials

Hydrogels, thermoplastics, synthetic materials

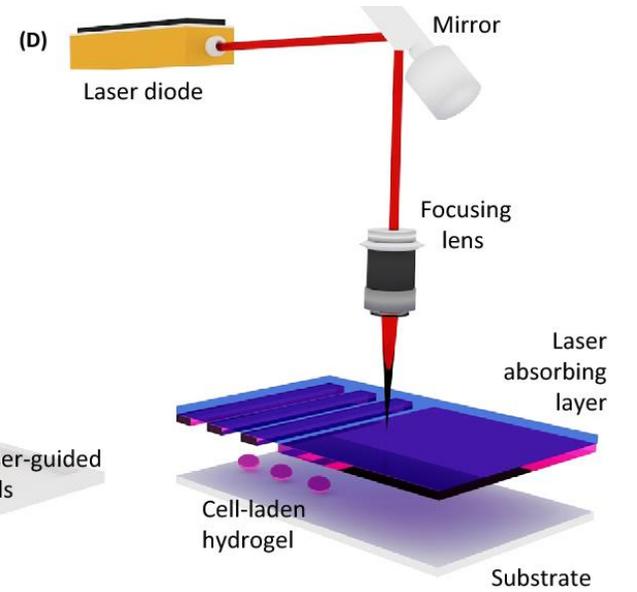
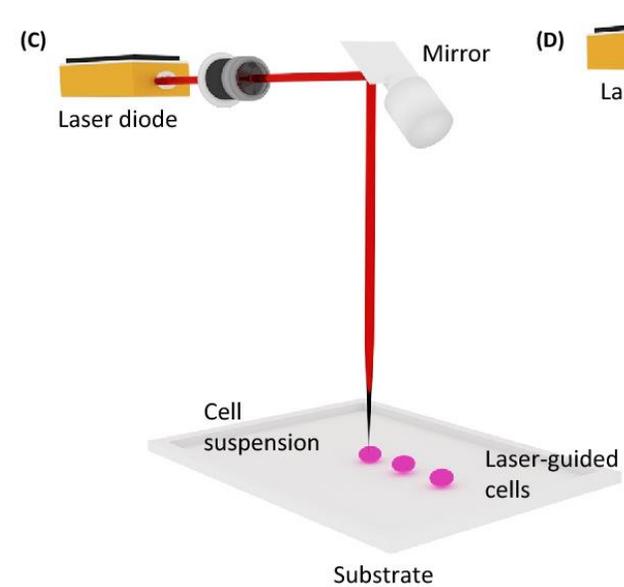
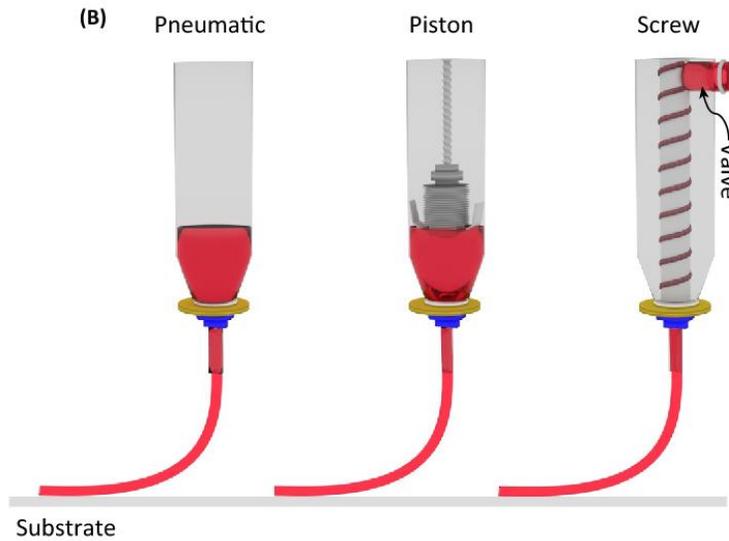
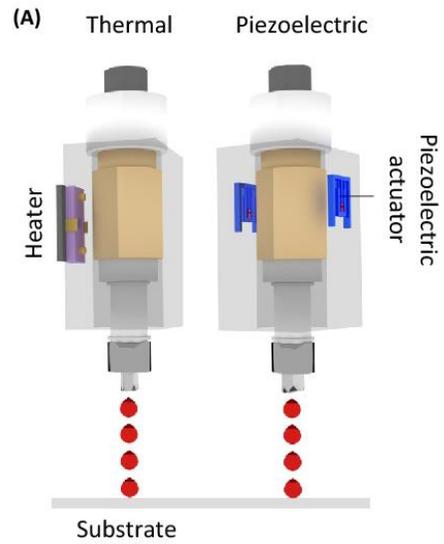


Platforms

Extrusion, inkjet, and laser bioprinters



Bioprinting methods



Types of bioinks

Matrix

Cell-encapsulating materials engineered to provide structure and nutrients for cells.



Support

Materials that provide permanent support with enhanced mechanical properties.



Sacrificial

Materials that wash away after printing for temporary support or vasculature development.

