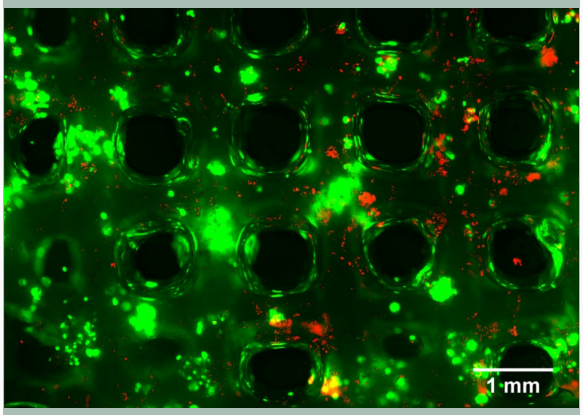
Society for Biological Engineering
An AIChE Technological Community

SBE
University Institute of Engineering & Technology

BIO-COTIDIE

EDITION 1

ISSUE
OCTOBER 2020



DID YOU KNOW?

In 2010 the first blood vessels were printed using cells cultured from a single person.

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Bioprinting artificial organs, kidney is expected to be first, and a heart is less than 20 years away.

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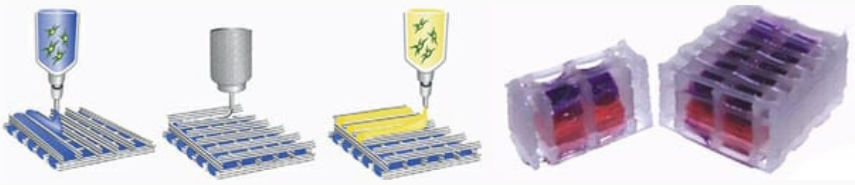
By 2024, the global 3D bioprinting market is projected to be worth $2.6 billion.

What Is Biofabricaton?

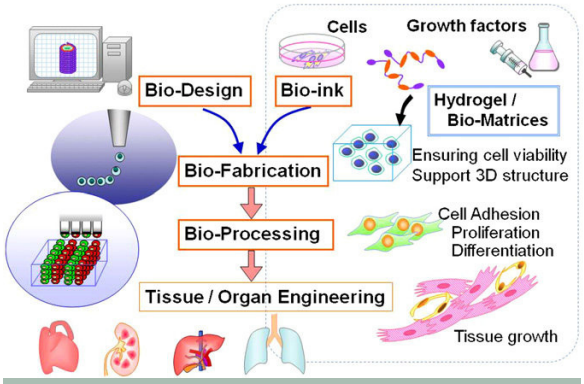
Biofabrication , a branch of regenerative medicine, is defined as the production of complex biologic products from raw materials such as living cells, matrices, biomaterials, and molecules. This rapidly evolving technology is making a revolutionary impact on the researches of life science, biomedical engineering, and both basic and clinical medicine. This technique uses a 3-D printer consisting of Bioink : a printable material that contains living cells for generation of organs and tissues. Hence the remarkable progress in biofabrication is now allowing scientists to fabricate artificial tissues and organs that can be implanted into the human body.



Basics of Process for Biofabric Production

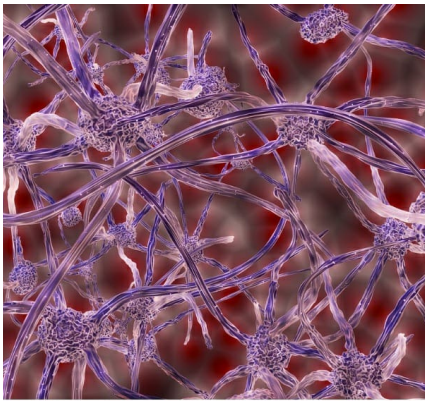
SCOPE OF BIOFABRICATON ?

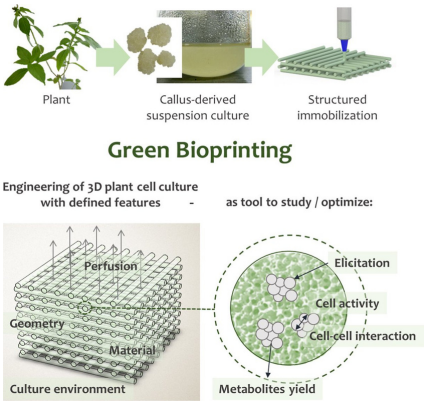
Biofabrication is increasingly used methodology for the future of tissue engineering and regenerative medicine (TERM) as well as in other fields such as drug discovery/development , used in the treatments for damaged joints and organs etc.



RESEARCH WORK

Green Bioprinting: The current research going on to develop green bioprinting from tissue engineering is being investigated so as to know whether this technology is compatible with plants , which could for example, help to nurture active agents for pharmaceuticals, food ,cosmetics and as both plants and algae produce oxygen by photosynthesis, thus , green bioprinting has the potential to keep mammalian cell cultures alive, which could be of special interest for applications in space.





VIDEO LINKS

3D Printing Human Parts

Biofabrication | Naomi Paxton | TEDxUniversityofWürzburg

How to 3D Print Human Tissue | Taneka Jones | TED-Ed

COMMERCIALIZATION OF BIOFABRICATION

The pharmaceutical industry plans to expand bioprinting to bills, which can provide dosages customized for each patients' individual needs. Research and discovery are producing new prototypes such as a bionic eye and bioprinting antibiotics, the development and sales of ink cartridges has become the industry's main source of revenue. These technologies are improving, providing better accuracy and lower costs.

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