

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

МАТЕРІАЛИ ІХ МІЖВУЗІВСЬКОЇ
НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ
КАФЕДРИ ІНОЗЕМНИХ МОВ

“TO MAKE THE WORLD SMARTER AND SAFER”

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BIOPRINTERS

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Scientific and technological advances are rapidly changing conditions of human existence. Modern information technology is increasingly used in the health care industry.

Bioprinter

3D printing is widely used for manufacturing a variety of plastic and metal products. This technology may cause production revolution in the world.

Technology of bioprint

They artificially create living tissue, imposing living cells layer by layer. Currently, all experimental bioprinters are, nevertheless, in the future they will revolutionize medicine. Bioprinter can have various configurations, but the principle of operation is the same: they take cells from the printhead that moves left and right, back and forth, up and down to place the cells where required. Thus in several hours organic substance consisting of large number of very thin layers may be obtained. In addition to the conclusion of cells, most bioprinters also derive soluble gel to support and protect the cells during printing.

Several experimental bioprinters have already been created.

For example, in 2002, Professor Makoto Nakamura saw a drop of ink in a standard inkjet printer that is about the same size as human cells. After that, he adapted the technology and in 2008 established a working bioprinter model that performs printing biotubes similar to blood vessels. Professor Nakamura hopes that in time it will be possible to print just internal organs, ready for transplantation.

Surprisingly, nature takes its toll and slowly merges into spheroids. As a result we have a tissue or organ, printed by bioprinter.

Over the past 20 years the use of computers in medicine has increased enormously. Practical medicine is becoming more and more automated.