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Тезис

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3D printers in medicine - an amazing technology*ГБОУ ВПО Саратовский ГМУ им. В.И. Разумовского Минздрава России, кафедра иностранных языков**Научный руководитель: Чижова М.Е.*

3D printing is an exciting innovation in technology and has many useful applications. One fascinating and potentially very important use of 3D printers is the creation of materials that can be used in medicine. These materials include medical devices, artificial body parts, cells, tissues and living body structures. In the future entire organs may be created by 3D printers. Modern medicine of the 21st century took a step forward. People have learned to use such things as, laser surgery, printer and silicone implants to repair defects and to treat. In my work, the creation of prostheses using 3D printers and their application in medicine have been investigated.

The objectives of the work include: 1) to learn the history of the 3D printer; 2) to explore applications of 3D printers; 3) to become familiar with the prostheses created using 3D printers; 4) to show achievements and prospects of development of this technology.

The invention of 3-D printing was first introduced by 3-D systems in 1987. The invention of 3-D technology was introduced as an additive print process that uses stereo lithography to build models and prototypes. 3-D printing based on inkjet principles developed and patented by the Massachusetts Institute of Technology in 1993. Now technology is improving rapidly and has the ability to become a major print technology next to offset and digital printing.

It is predicted that within the next decade creation of bodies and artificial limbs will be developed significantly. Today the first steps for creation of templates and models for prosthetics are already taken that in the future to give them to the general access to the Internet. If the 3D - printers become available to any class – and such revolution is expected – that practically everyone will be able to find a template and to create for himself an artificial limb and it will solve a disability problem. In hospitals, prosthetics will reach the highest level – the models, ideally suited for the owner, will be created. Researchers have suggested that printed ears may be ready to use in three years and printed organs in ten years or more. The pace of research is increasing. The future of 3D printing in relation to medicine should be very interesting!

Keywords: 3-D printing, medicine of the 21st century, artificial body parts, prostheses