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3D Printing: Future of Medical Field?

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Abstract: ***Technology has revolutionized our lives in numerous ways, far more than we count. Almost every aspect of our lives has undergone massive changes. Medical field has also been developed up to a great extent with the help of technology. Technology helps to cure countless diseases, also help to eradicate them completely. The foremost advantages of integrating new innovations into medical field are to improve quality of life, quick recovery, early diagnosis, accuracy, etc. but in few cases we can't rely on technology like eye transplant, kidney transplant or any other organ in which donor plays an important role because if donor would not be available then an individual could die. Nevertheless, 3D printing curb this problem and we can save many lives without the availability of donor. In contemporary world, we can print human organs in laboratories and then easily transplant in any human being that we usually watch in movies till now. However, sometimes technology causes more problems than it solves, resulting in negative consequences for mankind. Likewise, 3D printing has several drawbacks as well. Should we embrace 3D printing as the future of health care field?***

Keywords: Technology, diseases, transplant

I. INTRODUCTION

3D printing is 3-dimentional printing that means it helps to build three-dimensional products layer by layer with the help of raw materials like plastic. 3D printing was started practicing in medical field in early 1990s and it was first used to manufacture tooth implants. Afterwards, scientists started researches on building organs. It needs a blueprint to manufacture any product. Cell is used as the ink in this type of printing. Mostly plastic is used as a row material in medical field as it is easy to melt. It can help humankind a lot and that can save much time and effort and death because of inadequate donor can be decreased. Nonetheless, it has few demerits as well.

II. BENEFITS

A. Faster Production

3D printing is far quicker than the conventional methods. In case of conventional methods, it can take weeks and months to find a correct matched donor, in the meantime a patient can die as well while waiting that long. Thus, 3D printing would be extremely helpful in case of emergency transplant and patients do not have to suffer in contemporary world. Also, accuracy and reliability of 3D printing are pretty good.

B. No Blood Group Match Problems

Even after the family members are ready to donate their organ to the patient, sometimes blood group does not match and it would again be hard to find the donor. Nevertheless, this problem can be overcome with the help of 3D printing.

C. Build Organs That Are Not Available

Some organs cannot be donated like hearts, limbs, etc in which 3D printing comes in place and help to transplant the organs that no donor can donate. There are different type of 3D printing technologies are available that utilize different materials and all have significant effect on health sector. That include:

Orthotics and prosthetics – components for body part that have to behave mechanically, for instance, limbs.

Implants – like bones implants and tooth implants

Pre-operative models – help to guide the surgeons to understand the whole procedure.

D. Medical Research

3D printing could help researchers to accelerate their researches. It is pretty difficult to research in medical field as of scarcity of organs, however with the help of 3D printing physician would not suffer from inadequate organs and dramatic development can be seen in medical field as physicians can research as much as they wanted without any shortage of organs.

III. DRAWBACKS

A. Not eco-friendly

Plastic is used in this technology up to a great extent which is a non biodegradable product and can affect the environment. I reckon plastic should be replaced by any other raw material in contemporary world. Also, plastic is used in this technology because it can easily be melted and can be shaped as required.

B. Expensive

Despite of easy availability this technology needs a fortune. In common scenario people only have to pay the doctor if the donor is one of their family members. However, access to this technology needs plethora of money due to which everyone can not afford this expensive technology. As raw materials used in this technology costs a lot that's why 3D printing is expensive by with the development in this technology cost can be decreased up to a great extent.

C. Manufacturing Unemployment

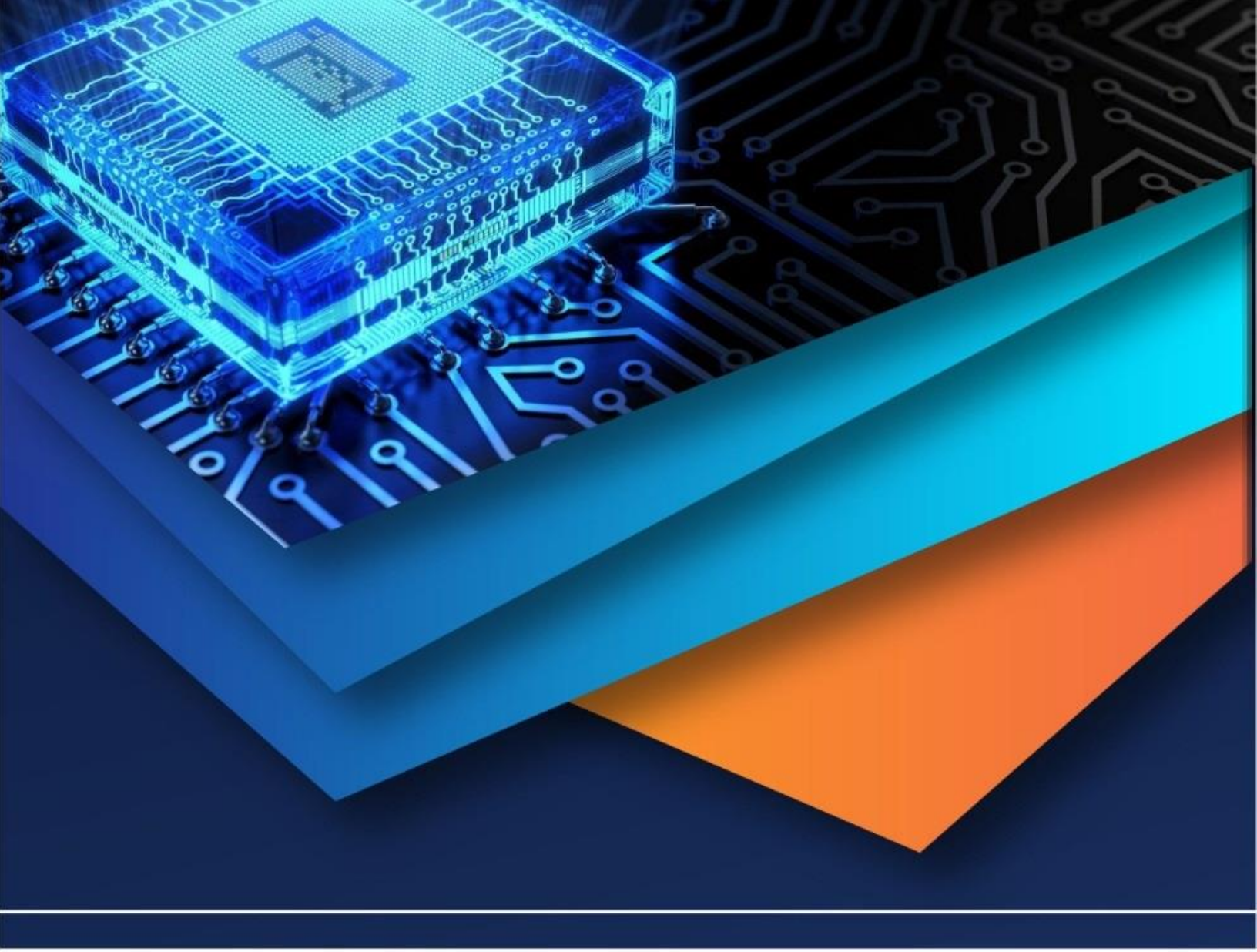
Numerous products like tooth implants and manufactured by humans now. Nonetheless, if these products would be started manufactured with the help of 3D printing then many people can be unemployed.

IV. CONCLUSION

Technology has developed a lot in last few decades. Despite of having numerous advantages, there are some disadvantages as well. 3D printing is an emerging technology with several drawbacks that are inevitable. These drawbacks need to be overcome as soon as possible so to help humankind in contemporary world.

REFERENCES

[1] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6451800/
[2] https://lpfrg.com/blog/3d-printing-in-the-medical-industry/
[3] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4189697/
[4] https://www.greenlight.guru/blog/3d-printing-medical-devices
[5] https://en.wikipedia.org/wiki/Applications_of_3D_printing
[6] https://www.sculpteo.com/en/3d-learning-hub/3d-printing-applications/medical-3d-printing/



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