

A Survey on Role of 3D Printing in Medical Field

Mr. Vikram Shirol, Mr. Arunkumar Joshi, Ms. Poornima Gadavi

Smt kamala and Shri Venkappa M. Agadi College of Engineering and Technology, Laxmeshwar, India

Abstract: *In the past, 3D printing was used mainly by major manufacturers that could afford expensive printers and materials. Over the years, 3D printing technology has evolved and become more affordable, making it a viable option for a wide variety of industries. Medical professionals, in particular, are beginning to use 3D printing to improve their practices and offer more customized and affordable healthcare options for their patients. Healthcare is one industry in which 3D printing has made a lasting impact. In 2018, the medical 3D printing market was valued at \$973 million and is expected to grow to almost \$3.7 billion by 2026. Medical applications for 3D printing are vast and will likely change the industry forever. The worldwide demand for the organ replacement or tissue regeneration is increasing steadily. The advancements in tissue engineering and regenerative medicine have made it possible to regenerate such damaged organs or tissues into functional organ or tissue with the help of 3D bioprinting. The main component of the 3D bioprinting is the bioink, which is crucial for the development of functional organs or tissue structures. The bioinks used in 3D printing technology require so many properties which are vital and need to be considered during the selection. Combination of different methods and enhancements in properties are required to develop more successful bioinks for the 3D printing of organs or tissue structures.*

Keywords: 3D Printing.

REFERENCES

- [1]. Swamina Agarwal, Vamsikrishna Balla, Aniruddha Pal, Ananya Barui (2020) Current developments in 3D-bioprinting for tissue and organ regeneration- A review, <https://www.researchgate.net/publication/345360584>
- [2]. Rodrigo Rezende, Vladimir A Kasyasnova, Jorge Vicente Lopes da Silva (2015) Organ printing as an Information Technology, <https://www.researchgate.net/publication/280298898>
- [3]. Anna Aimar , Augusto Palermo and Bernardo Innocenti (2019) The Role of 3D Printing in Medical Applications: A State of the Art, <https://doi.org/10.1155/2019/5340616>
- [4]. Janarthanan Gopinathan and Insup Noh (2018) Recent trends in bioinks for 3D printing <https://doi.org/10.1186/s40824-018-0122-1>