

New Future Possible Technologies for Biomedicine

VR Singh^{1*} and Kanika Singh²

¹Professor, LF-IEEE, Chair, IEEE EMBS/IMS, Former Director-Grade-Scientist, National Physical Laboratory, New Delhi, India

²SM-IEEE, Vice Chair, IEEE-EMBS/IMS, Pusan National University, Pusan, South Korea

***Corresponding Author:** VR Singh, Professor, LF-IEEE, Chair, IEEE EMBS/IMS, Former Director-Grade-Scientist, National Physical Laboratory, New Delhi, India.

Received: August 02, 2022; **Published:** August 03, 2022

Keywords: Biomedicine; Sensors; Healthcare; Artificial Womb; Artificial Blood

New scientific technologies in biomedicine are proposed and discussed for betterment of health care in future, with low cost but with quicker results.

In health care, day by day, there is an advancement in diagnostic and therapeutic treatment techniques. Thus, new devices and instrumentation systems are required to be developed to meet the current demand. New scientific ideas from early career researchers are ideal with proper interaction with accomplished scientists whose research is of great interest to the school/college. Several discussions have been made or are being made on 'New Possible Technologies' world over by various organisations among young scientists, research staff and principal investigators.

Main emphasis is being placed on the programmes focusing on advances in neurobiology and cell biology, stem cells and developmental biology, public health and infection and technologies in life sciences, with discussions and presentations, for the outstanding efforts of early career scientists towards excellence in biomedicine and beyond.

Researchers and scholars are required to be encouraged for the contributions in research excellence and community service to win awards to excel better in future and stay forefront in biomedicine and public (Genetically Modified Organism) health programs.

Some current advances in new technologies for health care applications are highlighted as follows, for future with possible challenges:

1. **Anti-GMO (Genetically modified organism):** With the change in climate, genetic engineering plays a great role to control the health of individuals in harsh environments, world over, during all the seasons.
2. **IVF (In vitro fertilization) clinics technology:** IVF (*In vitro* fertilization) clinics are progressing world over to get healthier babies. Several people seek infertility treatment and hence better clinics are required to be developed for the fertility control for good babies as outcome.
3. **Protecting patient privacy:** Appropriate technology is to be developed by having full big data meta-studies and used for earlier diagnosis, preventive measures and lifestyle enhancements flow from the use of big data, interlinked world over. Privacy laws are adopted to avoid hacking problem in healthcare information.
4. **Transplanted reproductive organs technology:** Transplantation of reproductive system consisting of uterus, ovary and fallopian tubes is easily possible now. Donor organs may be used in case of transgender cases.
5. **Gene editing approach:** Gene editing is made for genetic diseases and risk factors. Rarely dealt with new infections gene editing is easily used to replace gene therapy for getting choice in embryos, fetuses, newborns and children.

Citation: VR Singh and Kanika Singh. "New Future Possible Technologies for Biomedicine". *EC Clinical and Medical Case Reports* 5.9 (2022): 01-02.

6. **Synthetic biology for vaccine development:** The viral and bacterial infections are dealt with inhaling of new vaccinations, to reduce antibodies and to clean blood vessels clogged with fatty deposits.
7. **Use of artificial blood to avoid stocking:** Artificial blood is made by using synthetic biology, cloning and good bio-incubation, with no viral and bacterial infection risk and no requirement of blood matching.
8. **Life form creation from scratch:** Synthetic biology works as microbes obtained from DNA and artificial cell parts, organic or inorganic types, to create 'life' on the earth.
9. **Home-based care technology:** These days, emphasis is being placed on home-based care, particularly for elderly persons and chronic patients. Implantable devices, telemedicine and robotic based systems are used now. Ubiquitous U-health care is the future of such healthcare applications.
10. **Artificial womb approach:** New development has been made on artificial wombs in animals like sheep, pigs and primates for fetuses born with healthy babies.

Other most important future biomedical technologies are:

1. **Hearing upgradation with beams of light:** Here, hearing is upgraded by using gene therapy and optoelectronics.
2. **Nerve coolers for pain relief without drugs:** The implantable miniaturized device is developed to help patients with post-surgical pain avoid addictive opioids.
3. **Wearable neck patch to diagnose concussions:** A wearable neck patch has been developed with self-powered sensors for converting neck strain into electrical pulses to detect mainly head trauma in athletes.
4. **Graphene tattoos:** In the novel study, graphene tattoos are used to measure blood pressure continuously and the use of ultraviolet sensors to work for days.

New technologies and new frontiers in biomedicine are discussed in the present article for better healthcare, in any environment, any time.

Volume 5 Issue 9 September 2022

© All rights reserved by VR Singh and Kanika Singh.