

Advances in Wearable and Implantable Smart Electronics Skin for Real Time Medical Applications

Manjunath Badiger and Prasanna Kumar D.C

Dept. of ECE

S J C Institute of Technology, Chickballapur

***Abstract:** Recent advancements in wearable and implantable smart electronics skin have opened up new possibilities for real-time medical applications. These devices are designed to be worn or implanted on the skin and can monitor a wide range of physiological parameter, including body temperature, heart rate, blood pressure and oxygen saturation levels. The ability to monitor patients in real-time can aid in the diagnosis of Medical conditions and alert healthcare professionals if there are any changes in a patient's condition. Implantable sensors can also be used to monitor patients undergoing surgery or other medical procedures. Additionally, these devices can be used to deliver drugs or other therapies directly to the skin, providing targeted treatment for skin conditions. As these technologies continue to evolve, they have the potential to play an increasingly important role in healthcare.*

Keywords: smart electronic skin, implantable sensor, Heart rate and Blood pressure.

REFERENCES

- [1] Y. Khan et al., "Flexible Hybrid Electronics: Direct Interfacing of Soft and Hard Electronics for Wearable Health Monitoring," *Advanced Functional Materials*, vol. 26, no. 47, pp. 8764– 8775, 2016.
- [2] H. Xu, J. Liu, J. Zhang, G. Zhou, N. Luo, and N. Zhao, "Flexible organic/inorganic hybrid near- infrared photoplethysmogram sensor for cardiovascular onitoring," *Adv. Mater.*, vol. 29, no. 31, Aug 2017.
- [3] Ma, Y., Zhang, Y., Cai, S., Han, Z., Liu, X., Wang, F., et al. (2020). Flexible hybrid electronics for digital healthcare. *Adv. Mater.* 32, 1902062
- [4] G.Bhat, R. Deb, and U. Y. Orga's, "OpenHealth: Open source platform for wearable health monitoring," *IEEE Design & Test*, 2019.
- [5] R. Yin, Z. Xu, M. Mei, Z. Chen, K. Wang, Y. Liu, T. Tang, M. K. Priydarshi, X. Meng, S. Zhao, B. Deng, H. Peng, Z. Liu, X. Duan, *Nat. Commun.* 2018, 9, 2334.
- [6] X. Huang, in *Flexible and Stretchable Medical Devices* (Ed: K. Takei), Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim 2018, Charper 13, pp. 323.
- [7] X. Huang, in *Flexible and Stretchable Medical Devices* (Ed: K. Takei), Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim 2018, Charper 13, pp. 323.
- [8] C. Steiger, A. Abramson, P. Nadeau, A. P. Chandrakasan, R. Langer, G. Traverso, *Nat. Rev. Mater.* 2019, 4, 83.
- [9] Y. J. Zhan, W. Hong, W. X. Sun, J. Q. Liu, *IEEE Electron Device Lett.* 2019, 40, 19058863.
- [10] Ma, Y., Zhang, Y., Cai, S., Han, Z., Liu, X., Wang, F., et al. (2020). Flexible hybrid electronics for digital healthcare. *Adv. Mater.* 32, 190206215.