

1. **Section Collection: Flexible, wearable biosensors for digital health**

2. **Deadline for Manuscript Submissions: 2024-06-30**

3. **Section Editors' Information:**

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Research Interest:	Research Interest includes Biomedical Instrumentation design, medical devices, Finite element modeling and computational fluid dynamics. He is working on multiple devices to improve maternal and child health, especially in the neonatal and pediatrics.

4. **Summary:**

Flexible, wearable biosensors are a promising technology for digital health, offering real-time monitoring of physiological signals and health status. These biosensors are designed to be non-invasive, comfortable, and unobtrusive, making them suitable for long-term and continuous monitoring. They can be integrated into various forms, such as patches, textiles, wearable tattoos, microneedles, contact lenses, and mouthguards.

The development of flexible, wearable biosensors has been driven by the growing demand for point-of-care testing, personalized medicine, cost-effective lab tests, and the increasing prevalence of aging populations and chronic diseases. These biosensors enable real-time and multi-functional testing, and can realize long-term and continuous monitoring in clinical healthcare. They are being adopted rapidly within the healthcare industry, as they offer several advantages over traditional monitoring methods.

Flexible, wearable biosensors can be used to monitor various health conditions, including saliva, sweat, tears, interstitial fluids, respiration, and physiological pressure. They can also provide real-time feedback to both patients and healthcare providers, enabling timely interventions and improving patient outcomes. However, there are challenges associated with the development and implementation of flexible, wearable biosensors, such as ensuring reliable measurements regardless of variations in temperature, humidity, motion, and other environmental factors. Effective data management strategies are also necessary to handle the substantial volume of data while maintaining data privacy, integrity, and accessibility.

In conclusion, flexible, wearable biosensors have the potential to revolutionize digital health by providing non-invasive monitoring of physiological signals and health status. Addressing the challenges discussed here through multidisciplinary collaboration will be crucial in realizing the full potential of flexible, wearable biosensors in transforming digital health and improving patient outcomes.

5. **Keywords:** Flexible electronics, Stretchable electronics, Bioelectronics, Digital health, Wearable biosensors, Real-time monitoring, Physiological signals, Finite Element Modelling (FEM), Simulation.

Reference:

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2. Smith, A.A., Li, R. & Tse, Z.T.H. Reshaping healthcare with wearable biosensors. *Sci Rep* 13, 4998 (2023). <https://doi.org/10.1038/s41598-022-26951-z>
3. Zhu, P., Peng, H., & Rwei, A. Y. (2022). Flexible, wearable biosensors for digital health. *Medicine in Novel Technology and Devices*, 14, [100118]. <https://doi.org/10.1016/j.medntd.2022.100118>
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