

Development of Flexible and Wearable Electronics for Human Health Monitoring

Yichun Ding

(Biomedical Engineering Ph.D. candidate; Advisor: Dr. Zhengtao Zhu)

Abstract Flexible and wearable sensors can provide convenient, timely, and portable solutions for human health monitoring, which have attracted wide attention in both academia and commercial market. Some commercial products such as Fitbit™ wristband and Apple™ watch have been developed for fitness tracking of human activities including walking steps/distance, sleep stage, heart rate, and wrist pulse, yet the function is still very limited. In addition, human health monitoring systems not only requires functional sensors but also needs power supply, connector (conductor), data acquisition, and signal processing components, *etc.* Recently, some endeavors have been made to explore various novel electronics for human health monitoring, but it is still a challenge to develop flexible electronics with features of multi-functional, highly sensitive, fast-response, good stability, wearable and conformable, and low-cost, *etc.* Our research is to develop versatile flexible electronics including different flexible sensors (*e.g.*, UV sensor, strain sensor, pressure/tactile sensor, and biosensor), stretchable conductive textile, and wearable power supply devices based on the preparation of various functional materials/structures. In this presentation, we will demonstrate some of our results on the development of stretchable strain sensor and compressible pressure sensor for human motion monitoring (*e.g.*, joint bending, speaking, and walking gait).

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Where: EP#252