

Highly Sensitive Pulse Sensor for Accurately Monitoring of Blood Flow

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Abstract

The monitoring of blood flow is important to the recovery of patient after reconstructive surgeries.^[1] Here, we reported a flexible pressure sensor for the accurately monitoring of blood flow. The pulse sensor consists of two sensitive strain gauge, made of Au resistor, and connected each other with serpentine traces. The sensitive is proved by the monitoring of human pulse via directly attaching the sensor to the artery of the wrist (Figure 1). The accuracy is demonstrated on a test set-up of mimicking pulsatile behavior and typical expansion of blood vessel. This technology may be advantageous in real-time post-operative monitoring of blood flow after reconstructive surgery.

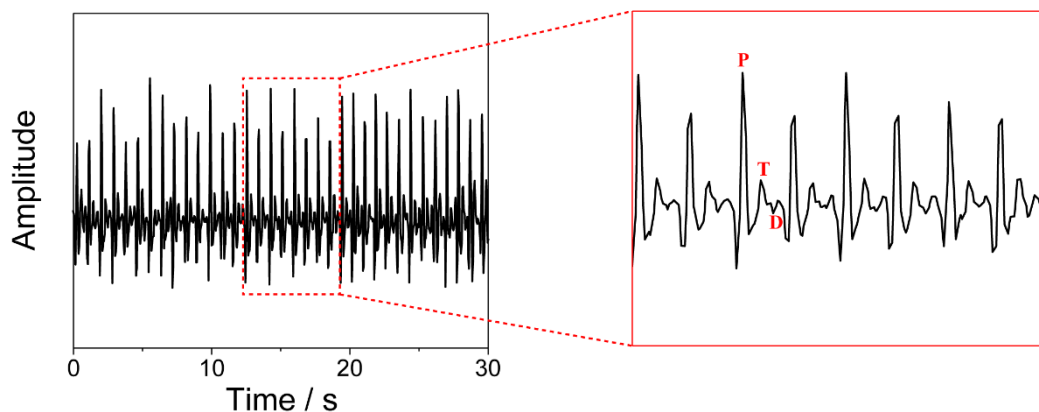


Figure 1. Human pulse monitoring via directly attached the pressure sensor to the artery of the wrist. The P-wave, T-wave and D-wave are significant in the pulse signals^[2], confirming the sensitivity of the pulse sensor.

References

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- [2] Wang X, Gu Y, Xiong Z, et al. Silk - molded flexible, ultrasensitive, and highly stable electronic skin for monitoring human physiological signals[J]. *Advanced materials*, 2014, 26(9): 1336-1342.