



**Topic of the Speech:**  
Wearable Smart Sensor System

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**Professor Youfan Hu** received her Ph.D. degree in Physical Electronics from Peking University, Beijing, China in 2008. She is currently an Assistant Professor in the Department of Electronics at Peking University.

Her research interests include high performance nanosensors, flexible carbon nanotube based integrated circuits, energy harvesting technology, and integrated smart sensor system. So far, she has published over 60 peer reviewed journal articles with a citation exceed 6000.

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## **Wearable Smart Sensor System**

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### **ABSTRACT (NO MORE THAN 500 WORDS:)**

The development of electronic devices that offer biointegration capabilities is of interest in various clinical and biological applications, where they could be used for monitoring, diagnosis and therapy. In general, an intimate interface is required between the device and the biological material, so the devices need to be built in a flexible form. At the same time, the increasing demand for portability restricts the allowable power dissipation of any device. Here we show several examples of wearable smart sensor systems for human body monitoring, including triboelectric nanogenerator-based self-powered sensors for respiratory and pulse monitoring, ultrasensitive flexible pressure sensors based on wrinkled microstructures for vocalization recognition, general 3D adjustable sensor platforms conformable to curved biological surface by utilizing kirigami art to extend 2D structures into 3D ones, and integrated smart sensor systems on ultrathin plastic foil with in-situ signal processing capability based on high-performance carbon nanotube complementary electronics. These cases show the great possibility of next-generation wearables for personal health care.