

Wearable Sweat-based Glucose Sensor using Functionalized Graphene

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Recent advances in soft electronics have attracted great attention due in large to the potential applications in personalized, bio-integrated healthcare devices. The mechanical mismatch between conventional electronic devices and soft human tissues causes many challenges. Ultraflexible and stretchable electronic devices utilize the low system modulus and the intrinsic system-level softness to solve these issues. Here, we describe our unique strategies in the synthesis and functionalization of nanoscale two dimensional materials, their seamless assembly and integration, and corresponding device designs toward wearable healthcare devices. These wearable bioelectronic systems combine recent breakthroughs in unconventional soft electronics to address unsolved issues in the clinical medicine, which provides new opportunities the personalized healthcare, particularly for diabetic patients.