Electronic Supplementary Material (ESI) for RSC Advances.

Three-Dimensional Paper-Based Microfluidic Electrochemical Integrated Devices (3D-PMED) for Wearable Electrochemical Glucose Detection

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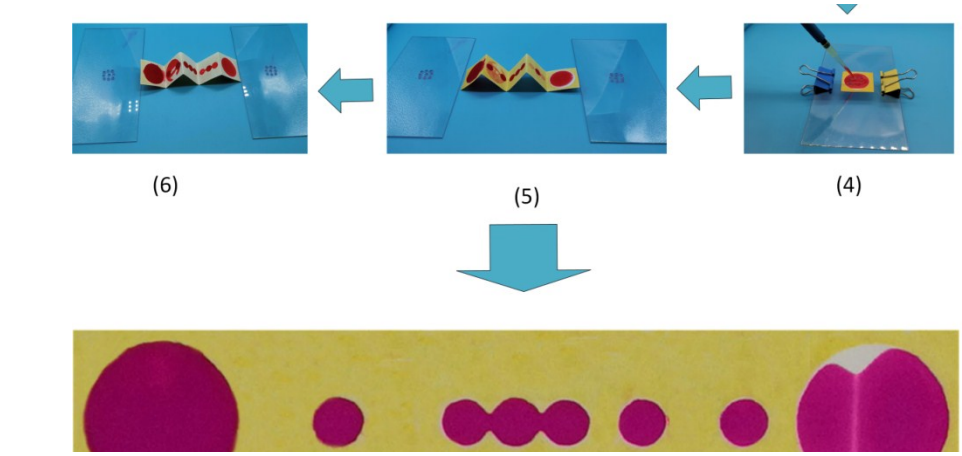
Table S1. Inter-electrode reproducibility for glucose sensor. The mean current and standard deviations are from the measured data of five samples.

Glucose (mM)	I (μA)	Standard Deviation	Glucose (mM)	I (μA)	Standard Deviation
0	-0.11	0.02	1.0	-1.76	0.07
0.1	-0.26	0.01	1.1	-1.95	0.09
0.2	-0.42	0.03	1.2	-2.09	0.06
0.3	-0.58	0.03	1.3	-2.29	0.07
0.4	-0.76	0.03	1.4	-2.47	0.07
0.5	-0.92	0.04	1.5	-2.66	0.08
0.6	-1.08	0.05	1.6	-2.83	0.09
0.7	-1.25	0.05	1.7	-2.98	0.09
0.8	-1.42	0.05	1.8	-3.15	0.09
0.9	-1.60	0.07	1.9	-3.28	0.10

Table S2. Inter-electrode reproducibility for glucose sensor in 3D-PMED. The mean current and standard deviations are from the measured data of three samples.

Glucose (mM)	I (μA)	Standard Deviation
0	-0.10	0.02
0.5	-0.52	0.07
1	-0.83	0.07
1.5	-1.20	0.12
2	-1.49	0.08

Fig S1. The photograph of the modelling process for 3D-PMED with red ink. (1-2） The folded 3D-PMED was sandwiched between two plastic plates. (3—4) The 3D-PMED was drop some volume of red ink onto the sweat collector of 3D-PMED. (5-6) After the dropping of red ink, the folded 3D-PMED was unfolded.



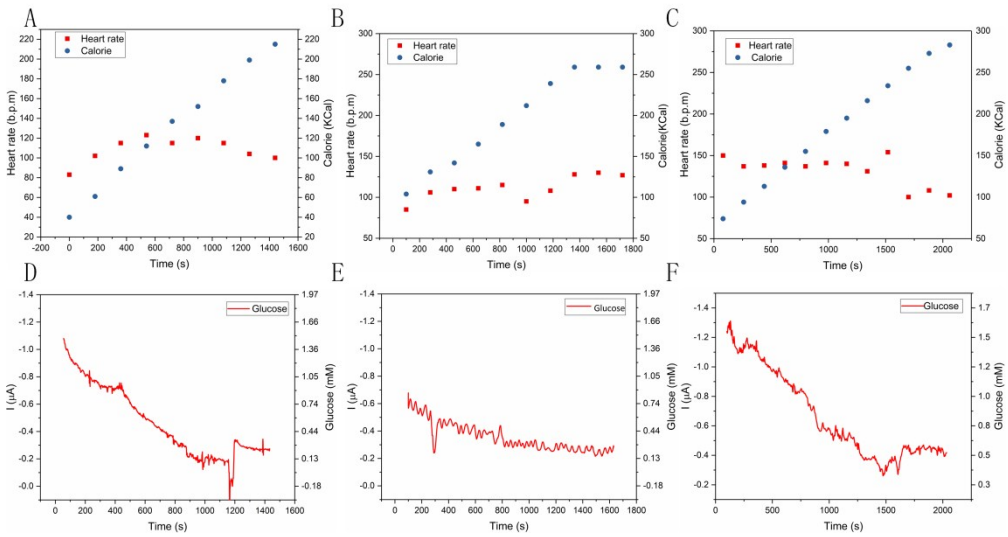


Fig S2. (A,B,C)Discrete records of heart rate and consuming calorie of three subjects by the multifunctional cycle ergometer. (D,E,F) Real-time glucose concentration monitoring in sweat by the 3D-PMED for three different subjects