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Supplemental information

**A wireless optoelectronic skin patch
for light delivery and thermal monitoring**

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Supplemental Information

Figures

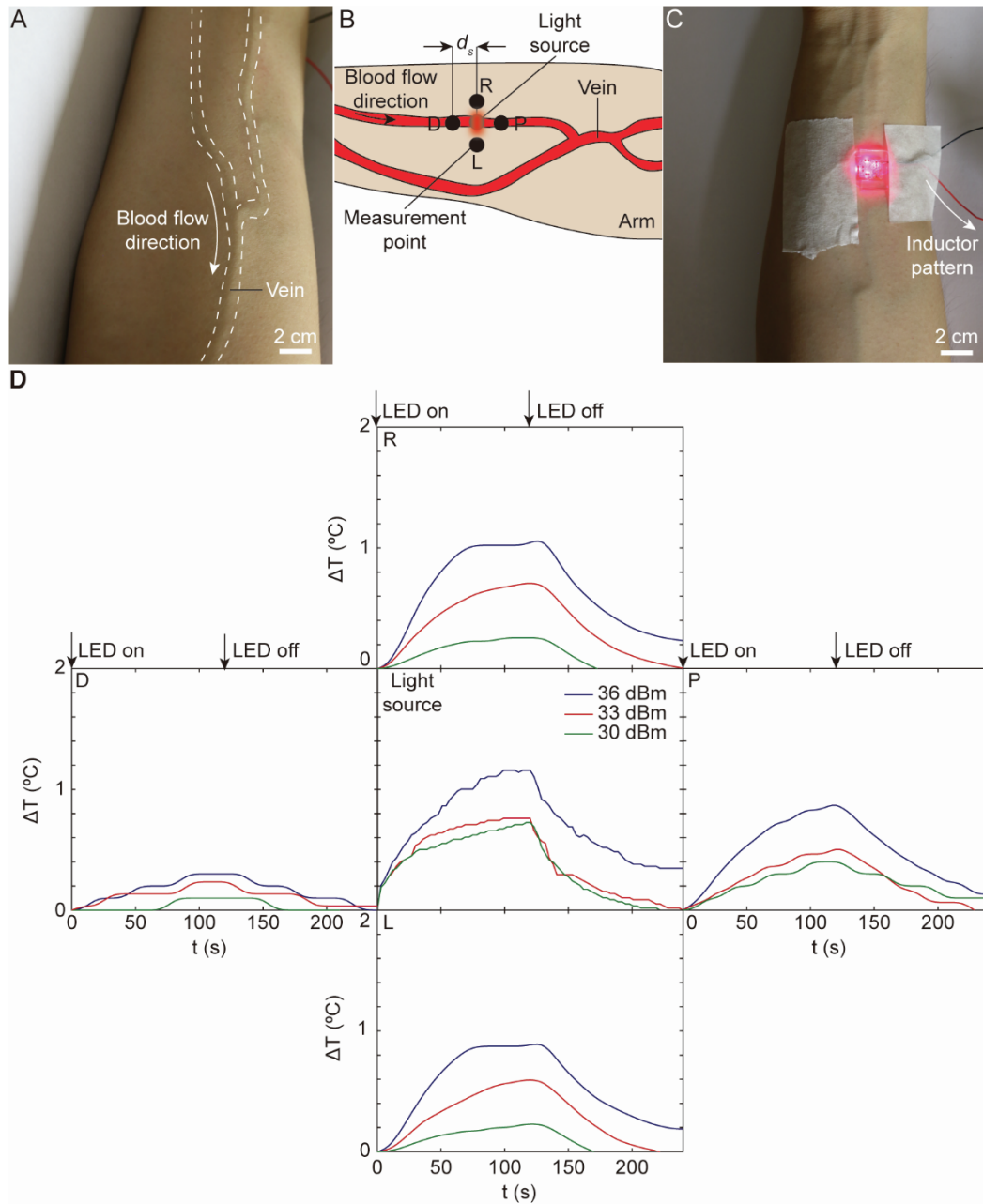


Figure S1. Alternative sensor arrangement for blood flow monitoring, Related Figure 4. (A) Image of the subject's forearm with visible radial and ulnar arteries. Arrow indicates direction of blood flow. (B) Schematic of placement of the light source and thermal sensors on the radial artery. The spacing between the sensors is $d_s=5$ mm. (C) Image of the sensor and LED array. The LED array is detached from the skin patch and fixed on the skin using medical tape to visualize the placement. (D) Temperature profiles measured by the thermal sensors when the LED array is wirelessly powered with input power 30, 33, and 36 dBm. D, distal; P, proximal; L, left; R, right.

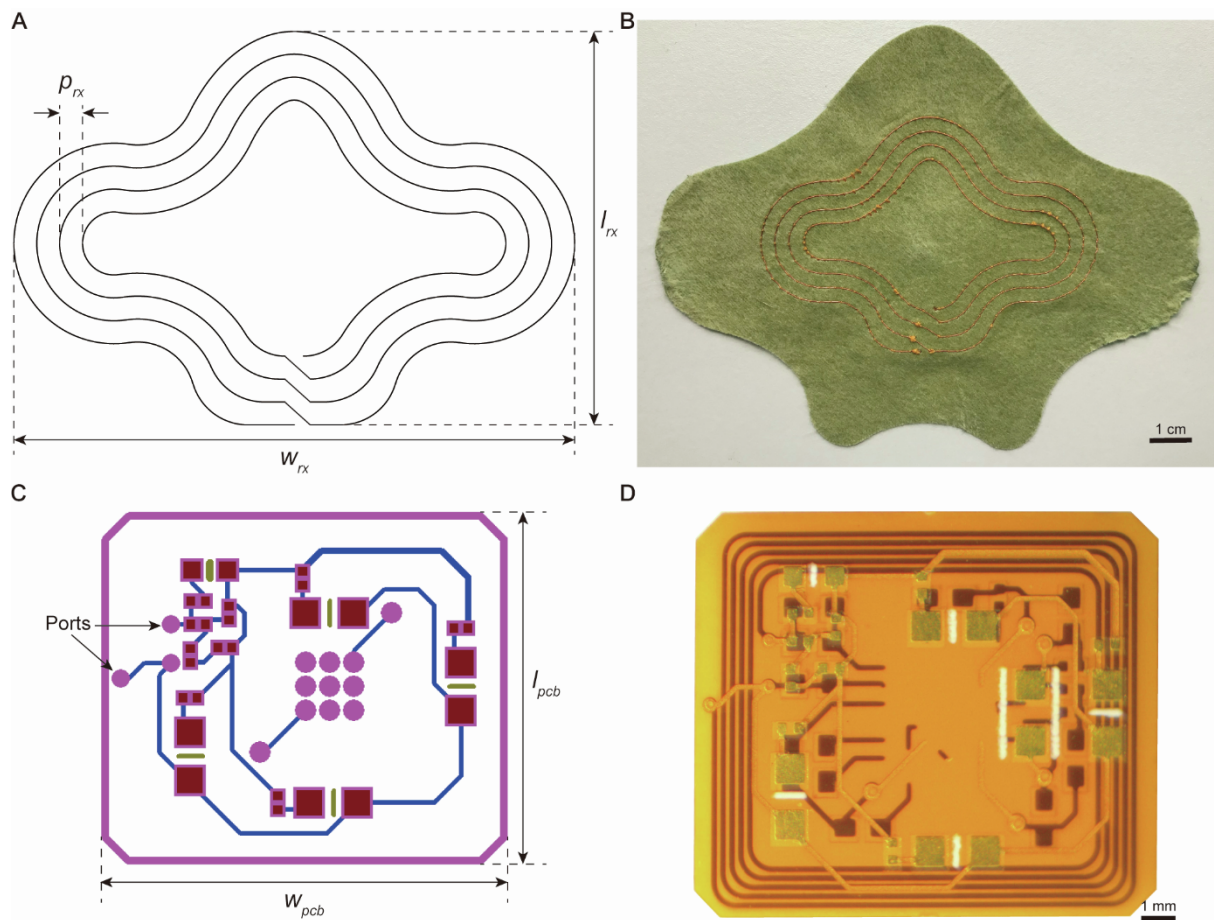


Figure S2. Detailed design of the skin patch, Related Figure 3. (A) Illustration of the inductive pattern. The final design parameters are shown in Table 2. (B) Image of the inductive pattern embroidered on the skin patch using copper wire. (C) Schematic of the printed circuit board for the LED array and wireless power circuit. The design is fabricated on a flexible circuit board (PCB). The width (w_{PCB}) and length (l_{PCB}) of the board are 13.5 and 11.4 mm, respectively. Ports indicate the connection pads for the inductive pattern. (D) Image of the fabricated PCB. The backside of the PCB is not used in this work.

Tables

Table S1. Comparison of transmittance, Related Figure 2.

Ref.	Transparent electrodes	Transmittance (%)	Wavelength (nm)	Sheet resistance ($\Omega \text{ sq}^{-1}$)
Jin et al. (2015)	AgNWs/gel	94.0	550	50.3
Jin et al. (2018)	AgNWs/Chitosan	93.5	550	18.0
Zhang et al. (2019)	AgNWs/PU	84.0	550	10.6
Tang et al. (2019)	AgNWs/Mxene/PU	83.3	550	26.0
Yang et al. (2020)	AgNWs/GO (laser irradiation)	91.1	550	3.3
Bi et al. (2020)	Ag metal	75.0	550	11.0
Bi et al. (2020)	ZTO/Ag/ZTO	82.0	550	8.8
This work	AgNWs/GO	93.0	550	12.0