

**ADVANCED  
HEALTHCARE  
MATERIALS**

Supporting Information

for *Adv. Healthcare Mater.*, DOI: 10.1002/adhm.201800419

Flexible-Device Injector with a Microflap Array for  
Subcutaneously Implanting Flexible Medical Electronics

*Kwangsun Song, Juho Kim, Sungbum Cho, Namyun Kim,  
Dongwuk Jung, Hyuck Choo, and Jongho Lee\**

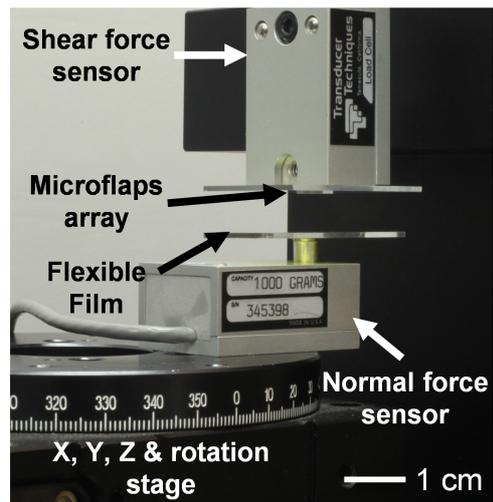
## Supporting Information

### **Title**

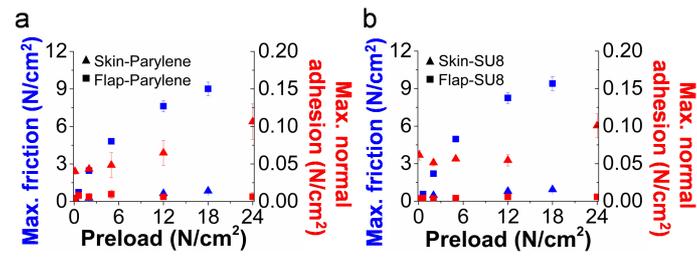
Flexible-device injector with a microflap array for subcutaneously implanting flexible medical electronics

*Author(s), and Corresponding Author(s)\**

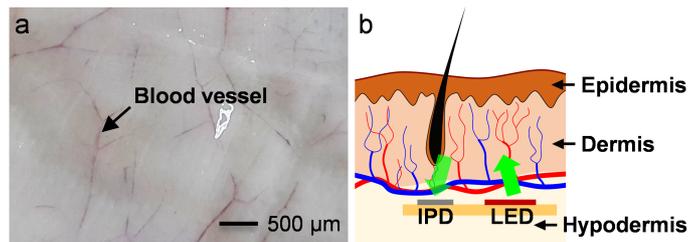
*Kwangsun Song, Juho Kim, Sungbum Cho, Namyun Kim, Dongwuk Jung, Hyuck Choo, Jongho Lee\**



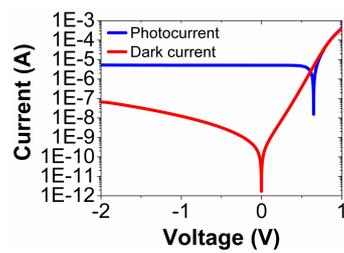
**Figure S1.** Experimental apparatus for assessing the mechanical characteristics of the microflap array, pig skins and flexible films. After vertically preloading the microflap array and pig skins, the translational microstage moves in the horizontal direction to measure friction or moves vertically to measure normal adhesion.



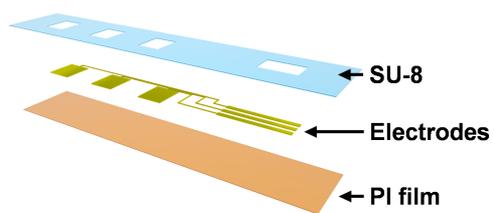
**Figure S2.** Experimental results (mean  $\pm$  SD) measuring maximum friction and normal adhesion of the microflaps ( $n = 5$ ) and skin ( $n = 4$ ) on (a) flexible parylene and (b) SU-8 films, depending on the preloads.



**Figure S3.** a) An optical image of blood vessels under the dermis layer of the skin isolated from a live pig (age: 5 months, weight: ~7 kg, male). b) A schematic illustration of the principle of measuring pulse signals with an injected pulse (PPG) sensor. The IPD detects the light reflected from blood vessels, tissues or other substances.



**Figure S4.** Current (I)-voltage (V) characteristics of the IPDs on the PPG pulse sensor under the dark condition (red line) and red light illumination (blue line, 620 nm,  $\sim 1.1$  mW/cm<sup>2</sup>).



**Figure S5.** An exploded view of the ECG sensor

Flexible-device injector with a microflap array  
for subcutaneously implanting flexible  
medical electronics

Kwangsun Song, Jongho Lee

GIST

**Video S1.** Flexible-device injector with a microflap array for subcutaneously implanting flexible medical electronics