

Supplementary Information

To map out temperature and humidity changes underneath the capsules at the skin, preliminary in situ experiments were executed. Sweat tests were approved by the Human Research Ethics Committee of Delft University of Technology. A participant (male, 30 years old) cycled at an ergometer in a climate chamber that was set to 33 °C and 65% relative humidity. The protocol included 30 min cycling at 40%-50% of the maximum heart rate, followed by 20 min at 60% maximum heart rate, 20 min at 70 % and a 20 min recovery period. Two capsules were placed at the back of the athlete. The NH₃ sensors were turned on two hours before the experiment, for stabilization. Dry air flow rates through the capsules were set at 1.2 l/min to ensure that all sweat evaporates. Figure S1. Shows the sensor resistances, temperature levels and humidity measurements of the two sensors over time. It can be seen that temperature and humidity levels increase with increasing exercise intensity. Once the participant stops exercising, the values decrease again. For the sensor measurements, the expected inverse effect can be seen.

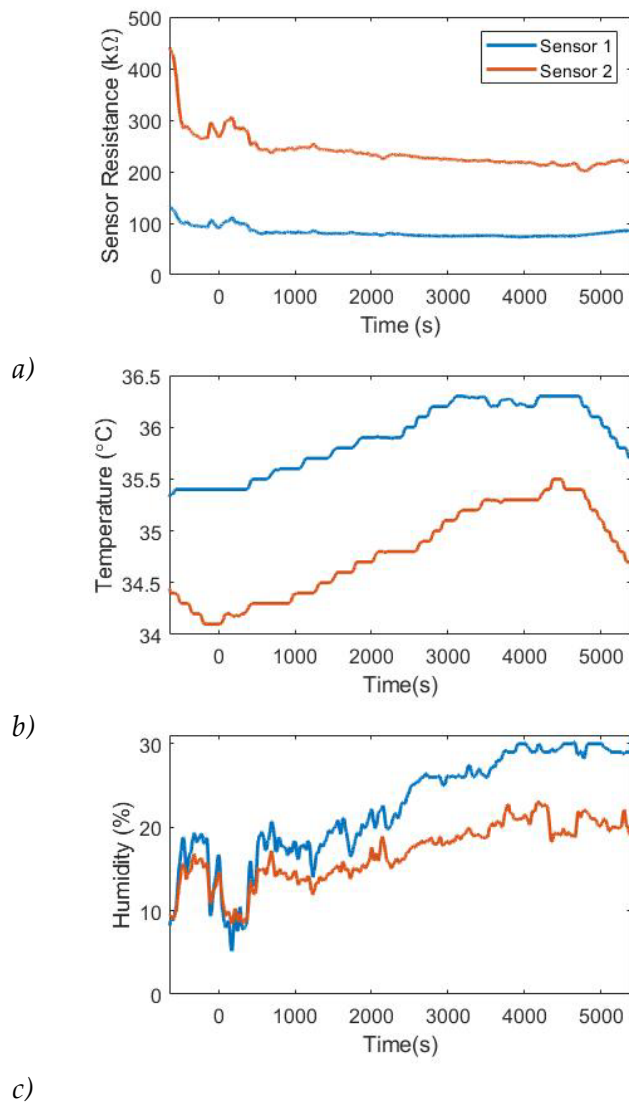


Figure S1. Results of the physiological test, the exercise starts at time=0s. a) Sensor resistance plotted over time. b) Temperature underneath the capsule during the test c) Humidity levels plotted over time.