Submitted to Nanoscale

Supplementary Information

Vertically Stacked Nanocellulose Tactile Sensor

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S1. Fabrication process of tactile sensor with ink-jet printer

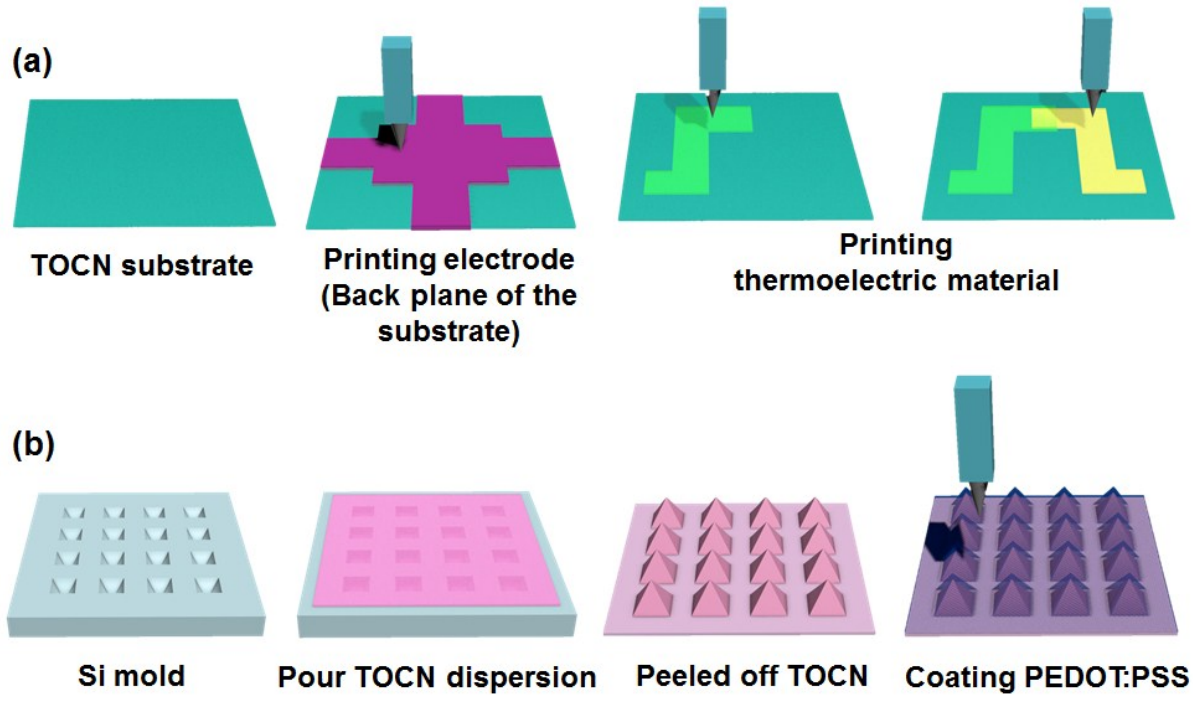

Figure S1. Fabrication process illustration of tactile sensor using ink-jet printing method. Fabrication process of (a) temperature sensor using the printing method (upper layer) and (b) pressure sensor (lower layer) with nano-cellulose substrate.

S2. Real image of cellulose substrate with micro-pyramid structure

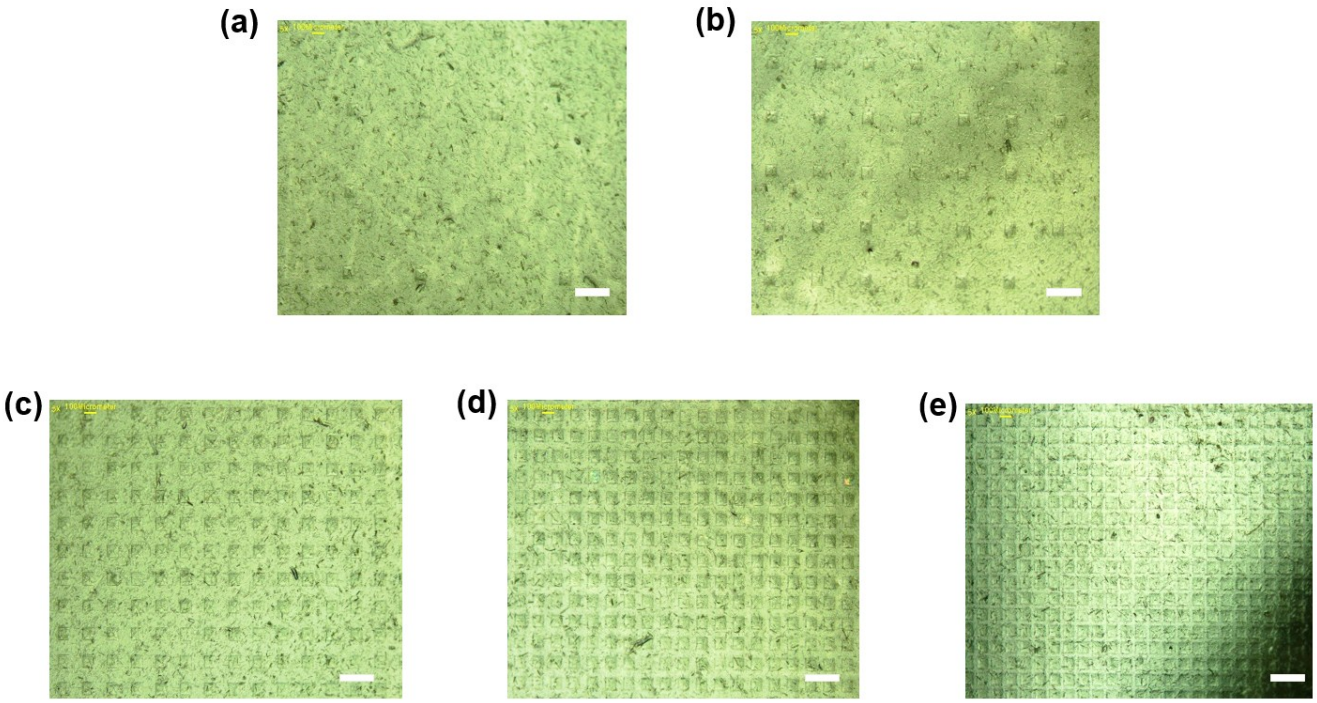

Figure S2. Optical images of nano-cellulose pyramid patterns. Pyramid patterns with the same pattern size (100μm) with different pattern space of (a) 500, (b) 300, (c) 100, (d) 50 and (e) 20μm. Scale bar is 200μm.

S3. Low voltage driving characteristics of pressure sensors

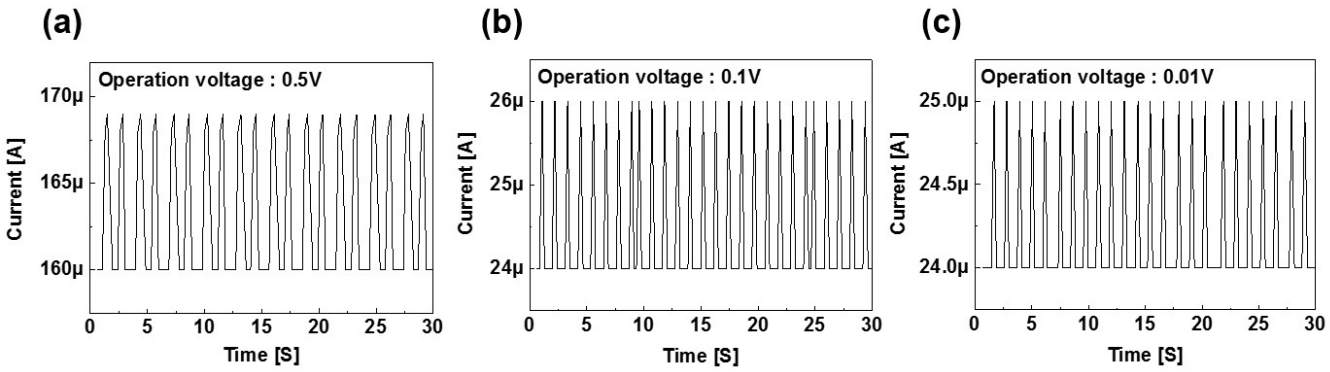

Figure S3. Current characteristics of nano-cellulose based pressure sensor under low operation voltage. A clear current change is seen for the applied voltage at low operating voltage, (a) 0.5V, (b) 100mV, (c) 10mV. The performance of a pressure sensor that works well under low operating conditions can be confirmed.