

Figure S1. Variation of relative change in capacitance as a function of time at different applied pressure range of (a) 1 Pa - 2 Pa. (b) 3 Pa - 5 Pa. (c) 10 Pa - 50 Pa. (d) 100 Pa - 500 Pa. (e) 1 kPa - 20 kPa. (f) 30 kPa - 111 kPa.



Figure S2. Variation of capacitance change $(\Delta C/C_0)$ as a function of applied pressure range to calculate the sensitivity in pressure regions of (a) 1 Pa - 5 Pa. (b) 10 Pa to 50 Pa (c) 100 Pa to 500 Pa and (d) 5 kPa to 30 kPa.



Figure S3. The correlation (*a*, *b*) and Bland-Altman (*c*, *d*) plots to compare the determined systolic and diastolic from the sensor to mercury-based sphygmomanometer.

Category	Systolic BP	Diastolic BP
Hypotension	< 90	< 60
Low normal	90-120	60-80
Normal	120-129	80-84
High Normal	130-139	85-89
Grade 1 Hypertension	140-159	90-99
Grade 2 Hypertension	160-179	100-109
Grade 3 Hypertension	≥ 18 0	≥ 110

Table ST1. Categories of human blood pressure.