Supporting Information

## Flexible hemispheric microarrays of highly pressure-sensitive sensors based on breath figure method

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**Figure S1.** A series of SEM micrograph of porous PS templates from different PS solution concentration: a) 15mg/ml, b) 30mg/ml, c) 65mg/ml, d) 80 mg/ml, e) 50mg/ml, f) 50mg/ml and P123 addition.



**Figure S2.** SEM images of surface (a) and cross-section (b) morphology of Au/PDMS composite films.



Figure S3. The hysteresis behavior of pressure sensor during several loading-unloading cycles.



**Figure S4.** The current response behavior of the micro-structured sensor under different measurement frequencies: a) 1HZ; b) 0.5HZ; c) 0.25 HZ.



**Figure S5.** SEM images of surface (a) and cross-section (b) morphology of Au/PDMS composite films after 10000 loading-unloading cycles.

Type of pressure	Sensitivity	Detection	Pressure	Operation	Response	Durability
sensor		limit	range	Voltage	time	Reversibility
Silk-molded	1.8 kPa <sup>-1</sup>	0.6 Pa	0-0.2 kPa	2V	<10 ms	>67 500
SWNTs/PDMS	0.1 kPa <sup>-1</sup>		0.2-1.2 kPa			cycles
film <sup>[1]</sup>						
Mimosa-inspired	50.17 kPa <sup>-</sup>	-	0-0.07 kPa	10mV	<20 ms	>10 000
Au/PDMS film <sup>[2]</sup>	1		0.2-1.5 kPa			cycles
	1.38 kPa <sup>-1</sup>					
Microstructured	5.53 kPa <sup>-1</sup>	1.5 Pa	<0.1 kPa	1V	0.2 ms	>5 000
graphene/PDMS						cycles
arrays <sup>[3]</sup>						
Polyaniline	2 kPa <sup>-1</sup>	15 Pa	<0.22 kPa	1V	50 ms	>10 000
nanofibers and Au-						cycles
coated PDMS						
micropillars <sup>[4]</sup>						
All-Textile Pressure	14.4 kPa <sup>-1</sup>	2 Pa	0-15 kPa	0.2V	24 ms	>1 000
Sensors <sup>[5]</sup>						cycles
Hierarchical	10 kPa <sup>-1</sup>	~1 Pa	0-7 kPa	-	36 ms	>10 000
Microstructure and						cycles
Microcracks <sup>[6]</sup>						
Our sensor	196 kPa <sup>-1</sup>	0.5 Pa	0-10 kPa	0.5V	26 ms	>10 000
	12.8 kPa <sup>-1</sup>		10-100 kPa			cycles

 Table S1 sensing performance comparison with previous reported literatures.



**Figure S6.** The normalized current variation versus applied pressure curves of different assembly manner, including structured / structured, structured / flat and flat / flat three types.

Reference

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