Electronic Supplementary Materials

For https://doi.org/10.1631/jzus.A2500648

High-sensitivity flexible iontronic pressure sensor for pulse signal detection and underwater intelligent communication

Menghui XIANG[1,2], Cong ZHAI[2], Congcong HAO[3], Guirong WU[1], Jin CHAI[2,4], Yunlong ZHAO[1], Zekai HUANG[1], Bin YAO[1,2], Heying ZHANG[3], Mengran LIU[5], Lei NIE[5], Xiewen WEN[6], Chenyang XUE[1,2], Libo GAO[1]

[1]*Discipline of Intelligent Instrument and Equipment, Pen-Tung Sah Institute of Micro-Nano Science and Technology, Xiamen University, Xiamen 361005, China*
[2]*Laoshan Laboratory, Qingdao 266237, China*
[3]*Key Laboratory of Instrumentation Science & Dynamic Measurement, North University of China, Taiyuan 030051, China*
[4]*College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China*
[5]*Key Lab of Modern Manufacture Quantity Engineering, School of Mechanical Engineering, Hubei University of Technology, Wuhan 430068, China*
[6]*Department of Industrial and Systems Engineering, University Research Facility in 3D Printing, State Key Laboratory of Ultra-precision Machining Technology, The Hong Kong Polytechnic University, Hong Kong 999077, China*

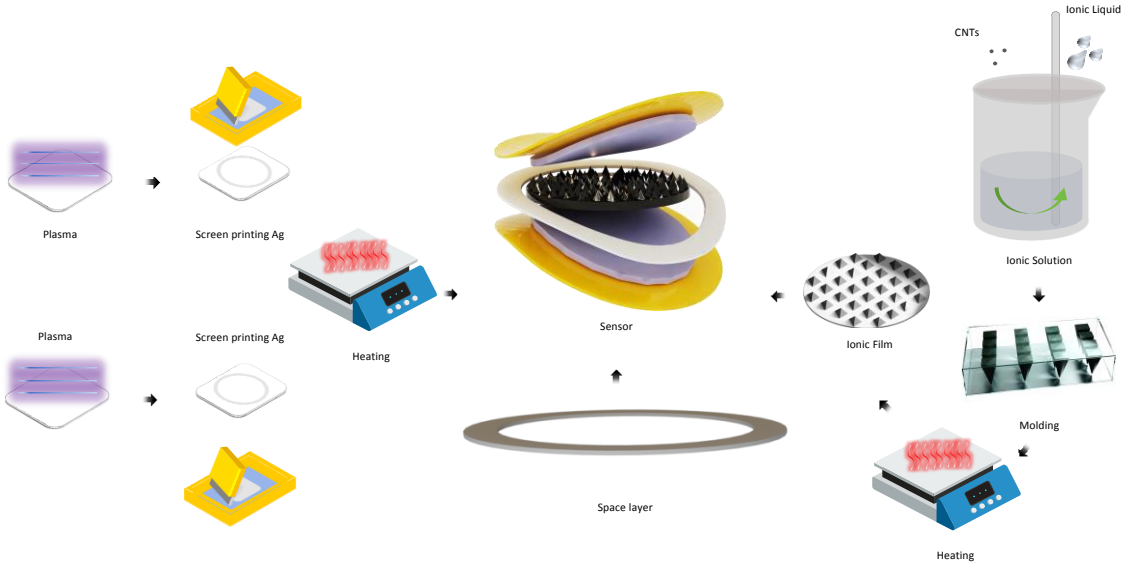


Fig. S1 Detailed preparation process of sensor

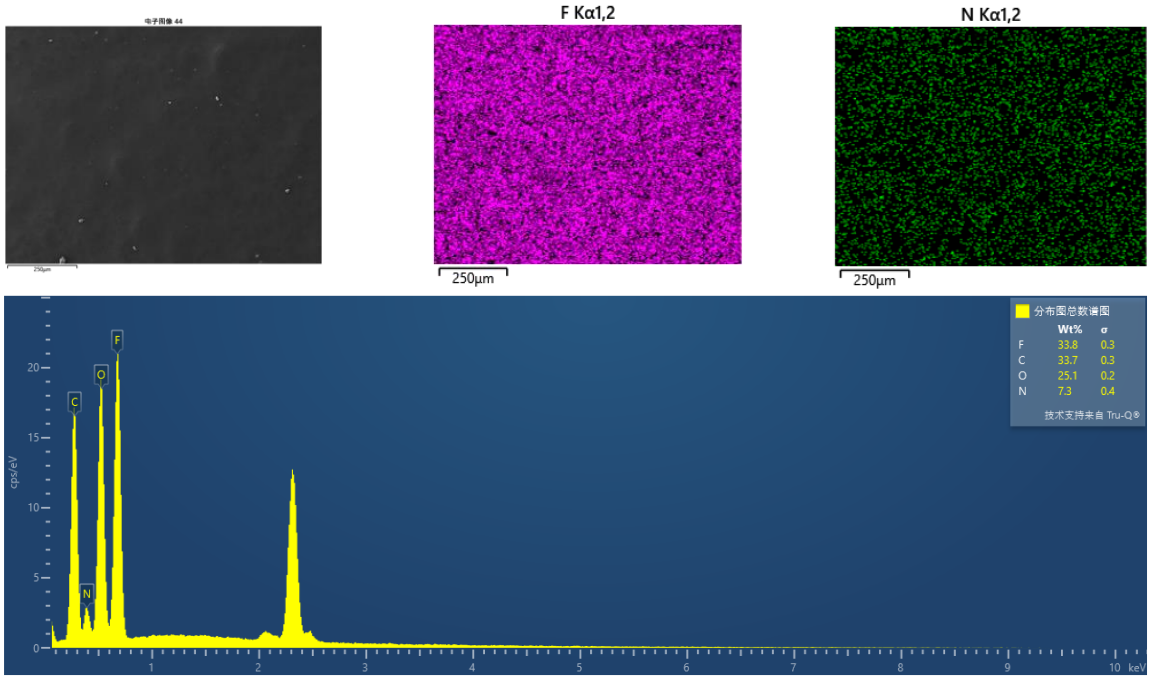


Fig. S2 The detailed SEM and EDS figures of sensitive material

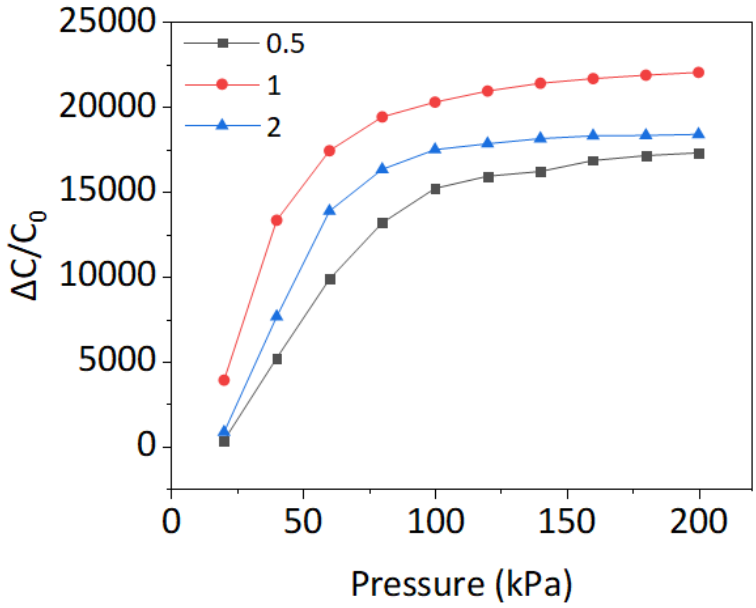


Fig. S3 Experimental comparison of different ionic liquid contents at fixed CNTs levels

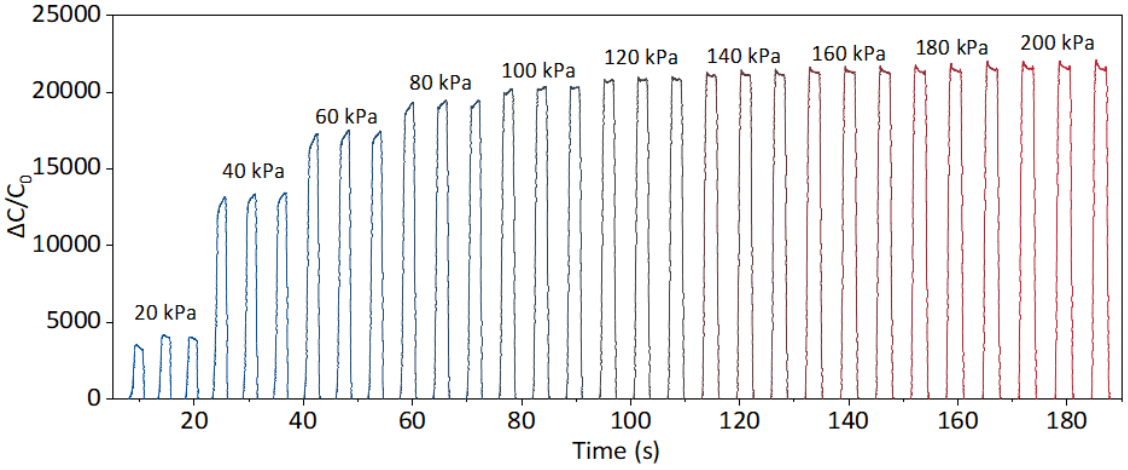


Fig. S4 The output of the sensor under different pressures

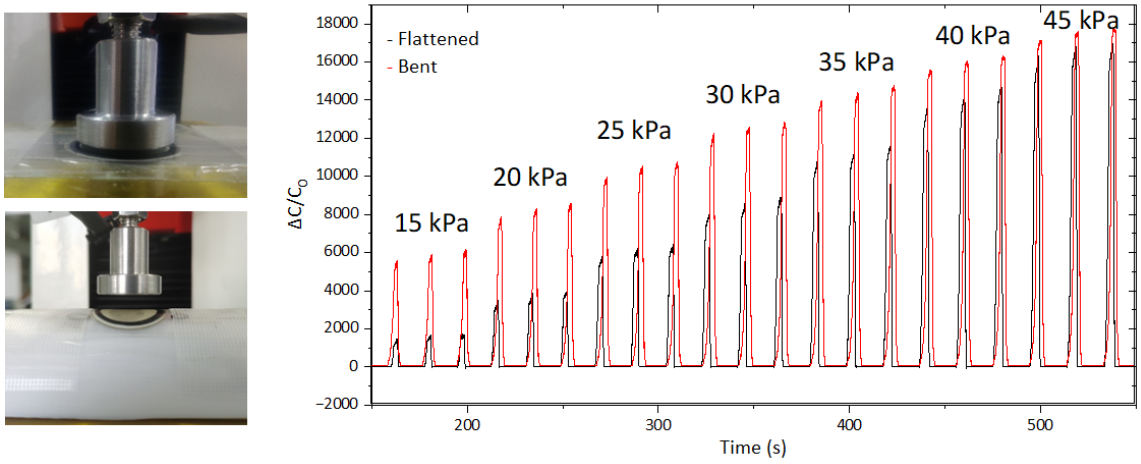


Fig. S5 The output of the sensor under force (15-45 kPa) in flattened and bent states

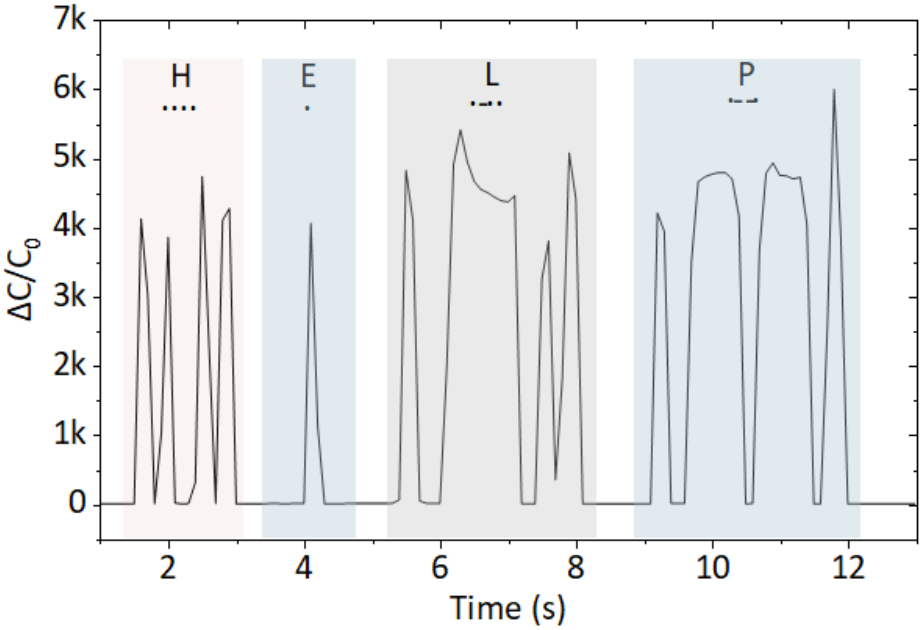


Fig. S6 Sensor output "help" signal

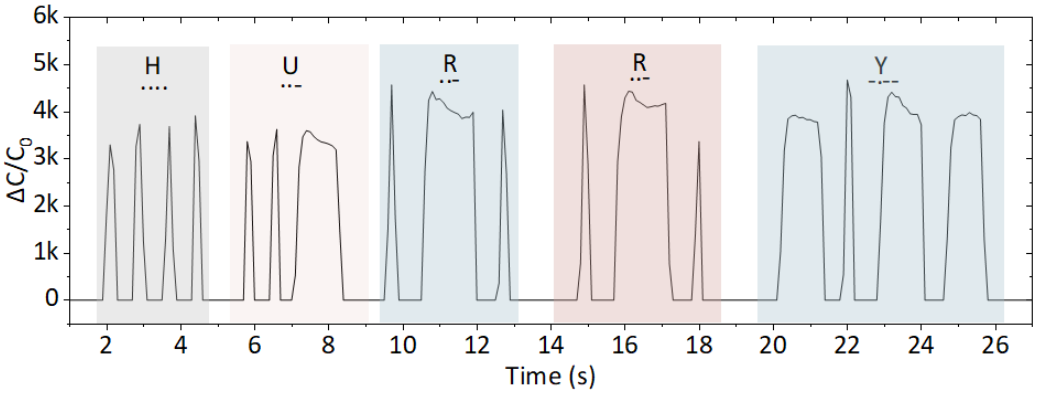


Fig. S7 Sensor output "hurry" signal

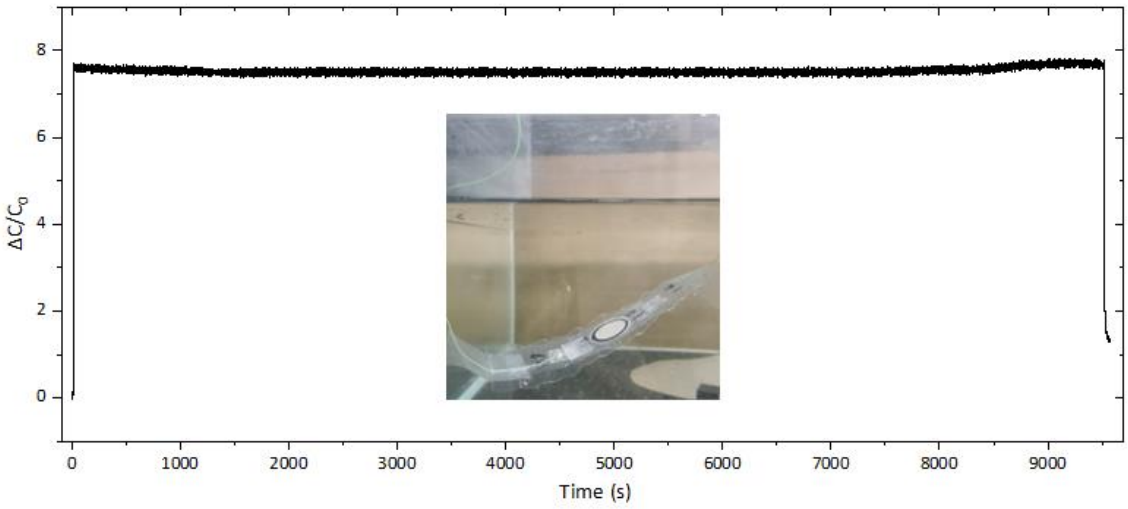


Fig. S8 The output of the sensor underwater for about 3 hours