

Electronic Supplementary Material

Highly sensitive iontronic sensor enabled by spherical boron nitride for intelligent pulse monitoring

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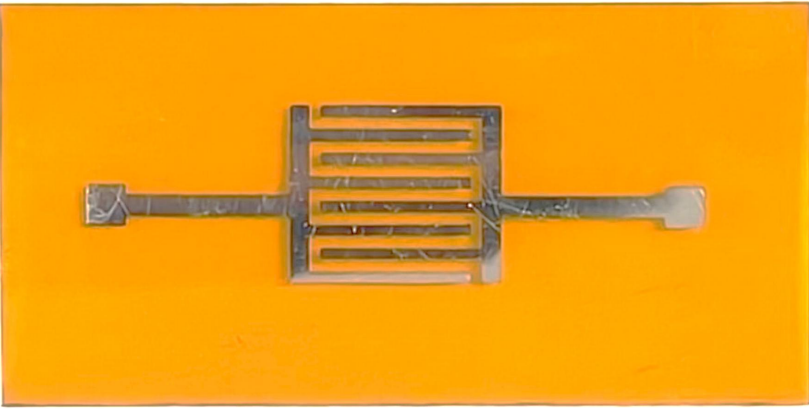
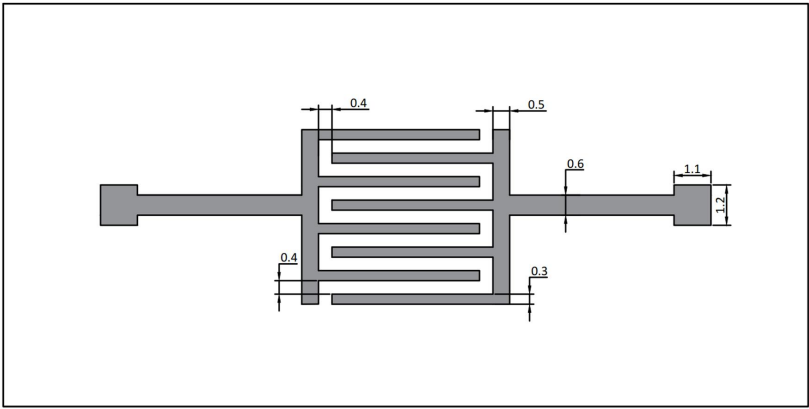


Fig. S1. Pt interdigitated electrode design and photograph.

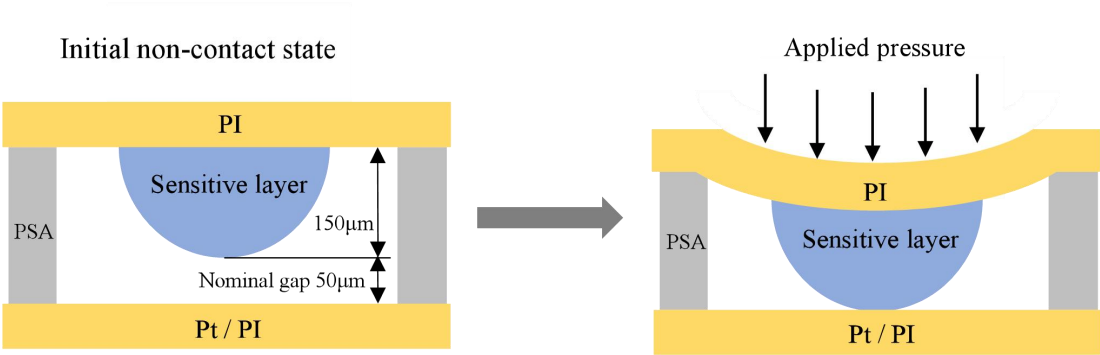


Fig. S2. Dimensional basis and working transition of the spacer-defined interface.

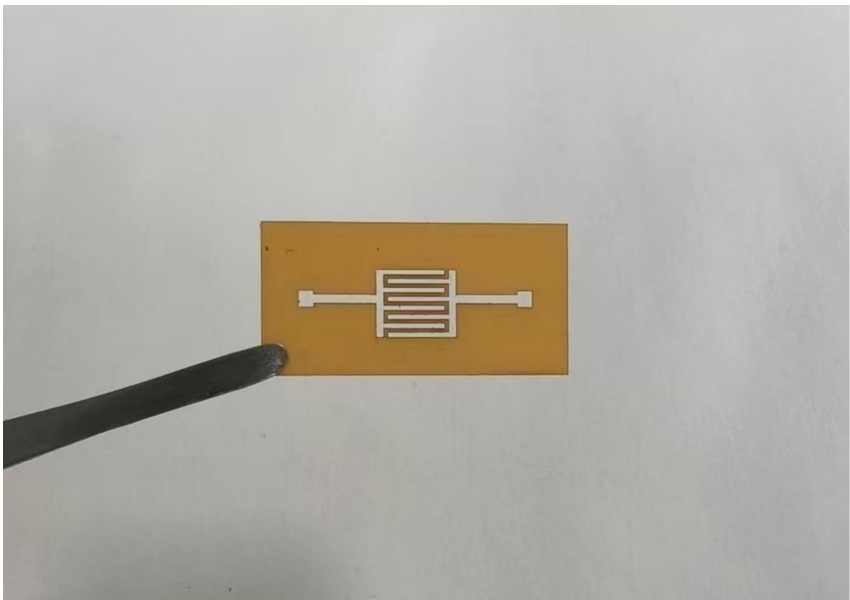


Fig. S3. Shadow mask for Pt electrode patterning.



Fig. S4. Magnetron sputtering system for Pt electrode fabrication.

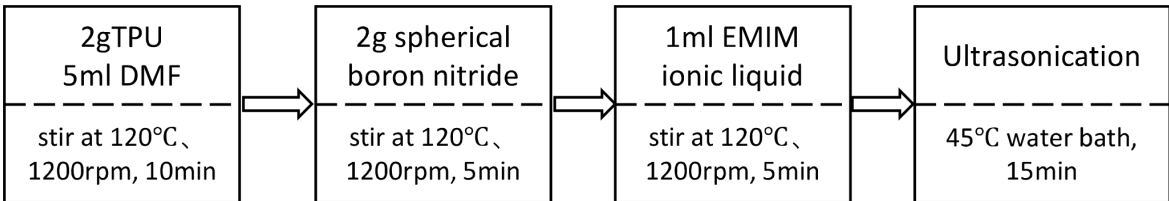


Fig. S5. Preparation procedure of the TPU/SBN/ionic liquid composite ink.



Fig. S6. Thickness measurement of the assembled flexible pressure sensor.



Fig. S7. Pressure calibration setup for sensor characterization.

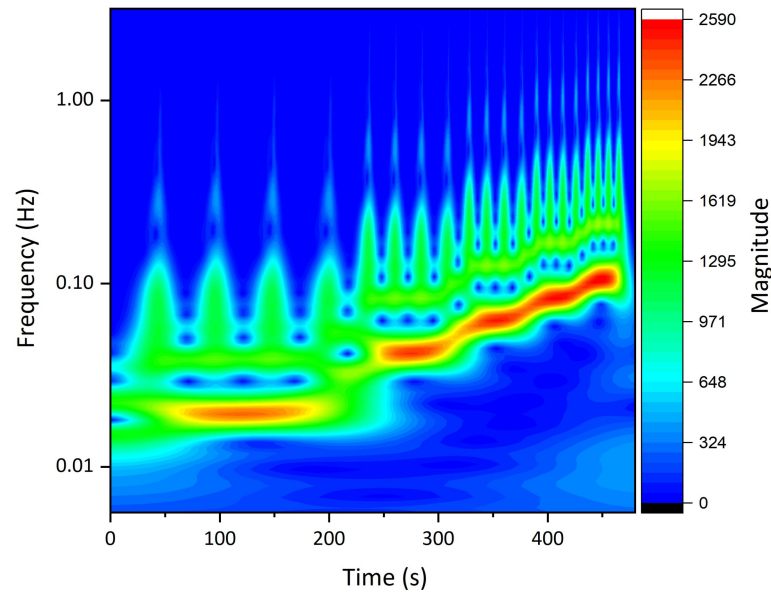


Fig. S8. Wavelet-transform analysis of the frequency-response signals.

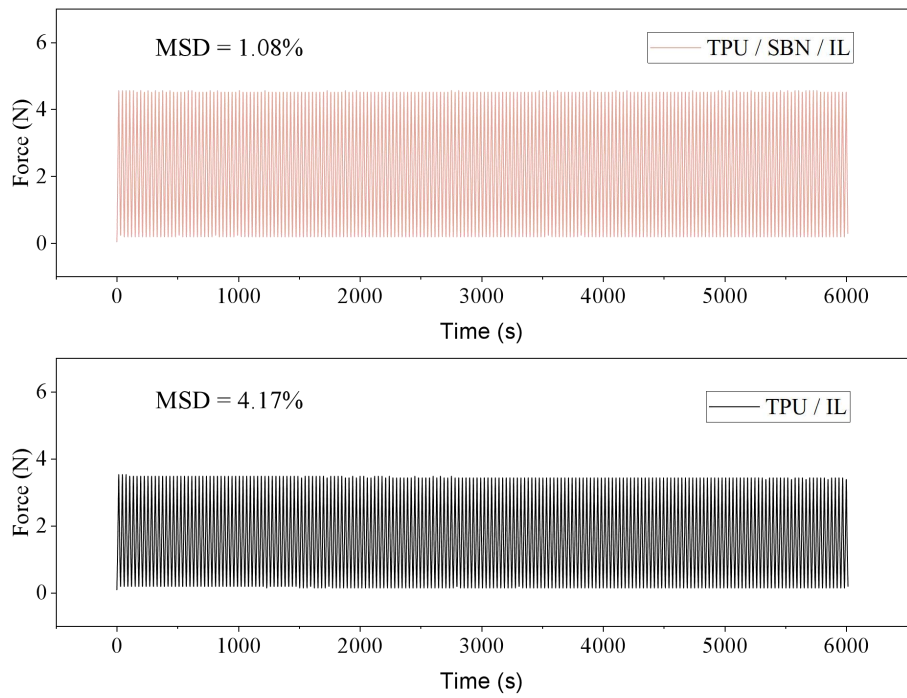


Fig. S9. Cyclic compression behavior of TPU/IL and TPU/SBN/IL.

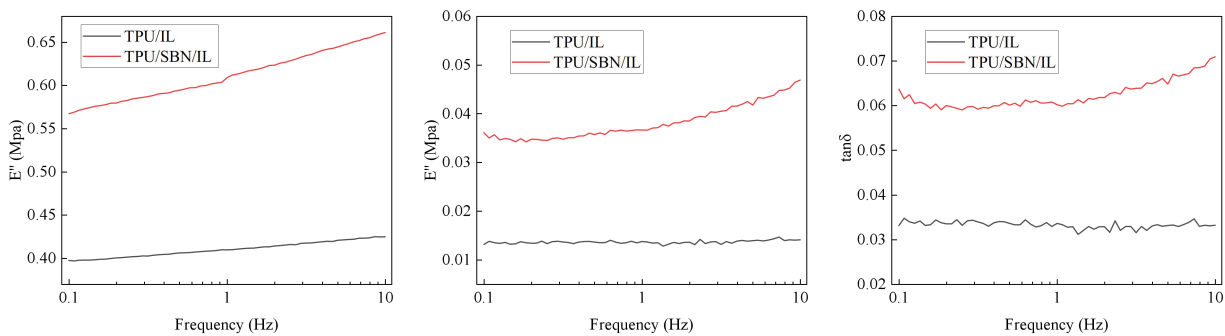


Fig. S10. Compression-mode dynamic mechanical analysis of TPU/IL and TPU/SBN/IL at 25 °C using a fixed dynamic strain of 0.2% and a logarithmic frequency sweep from 0.1 to 10 Hz with 30 points per decade.

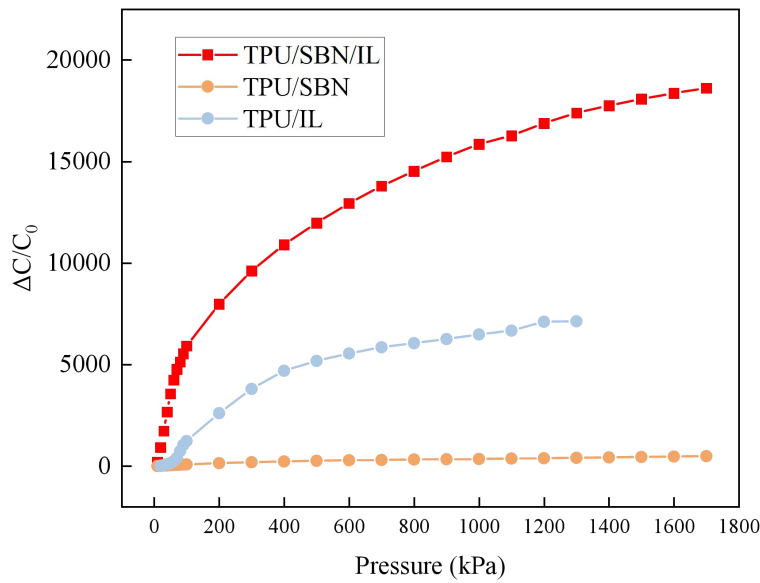


Fig. S11. Composition-control pressure-response comparison.

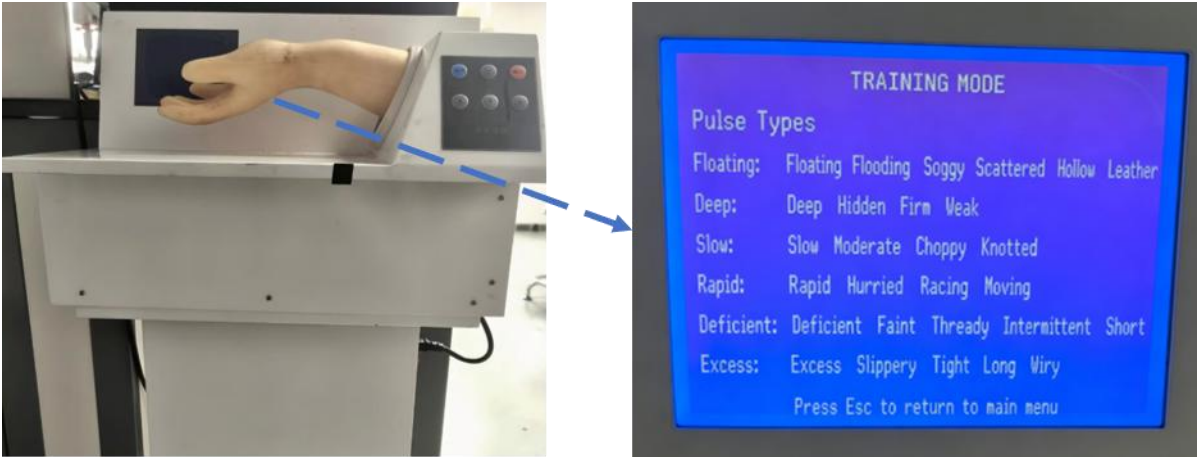


Fig. S12. Pulse generator and selectable pulse-type interface.

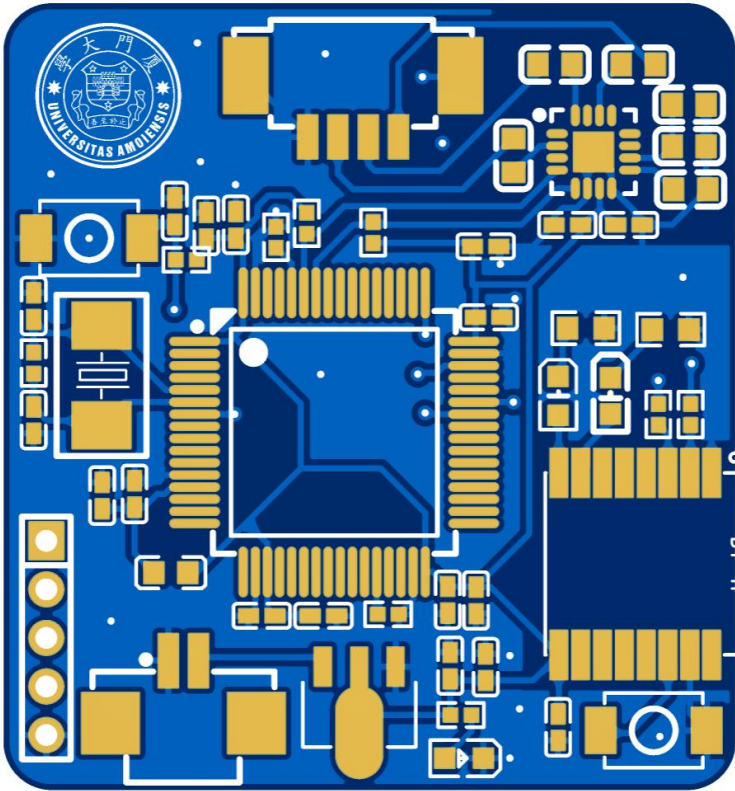


Fig. S13. Wireless readout circuit board.

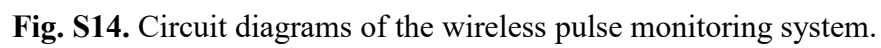


Fig. S14. Circuit diagrams of the wireless pulse monitoring system.