

Supporting information

In-situ and Real-time Monitoring of Internal Temperature, Pressure, and Current of Lithium-Ion Batteries for Long Cyclic Life Safety Using Flexible Multi-Parameters Sensor Array

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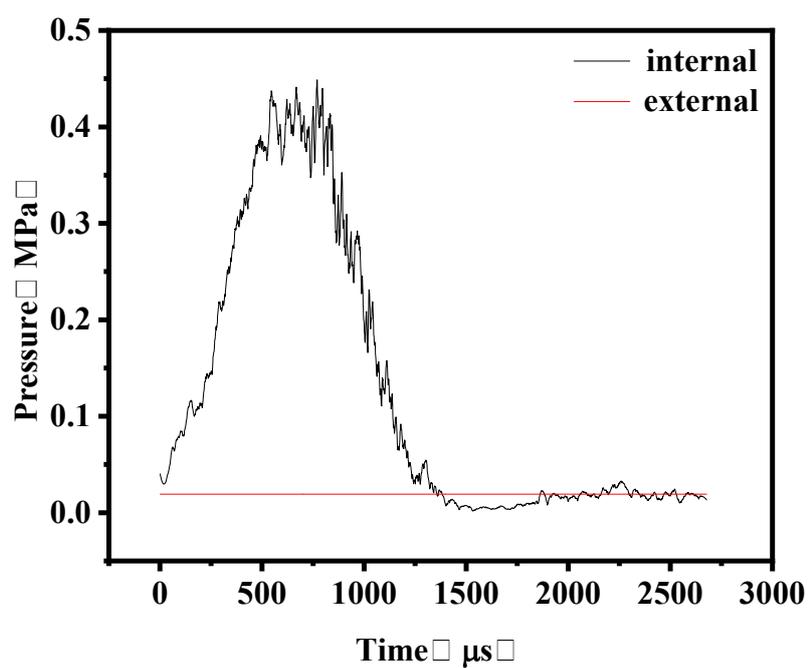


Figure.S1 Comparison of pressure between internal and external FMS.

The external sensor fails to monitor the pressure changes due to the free expanding of the encapsulating material of LIB, as shown in Figure S1.

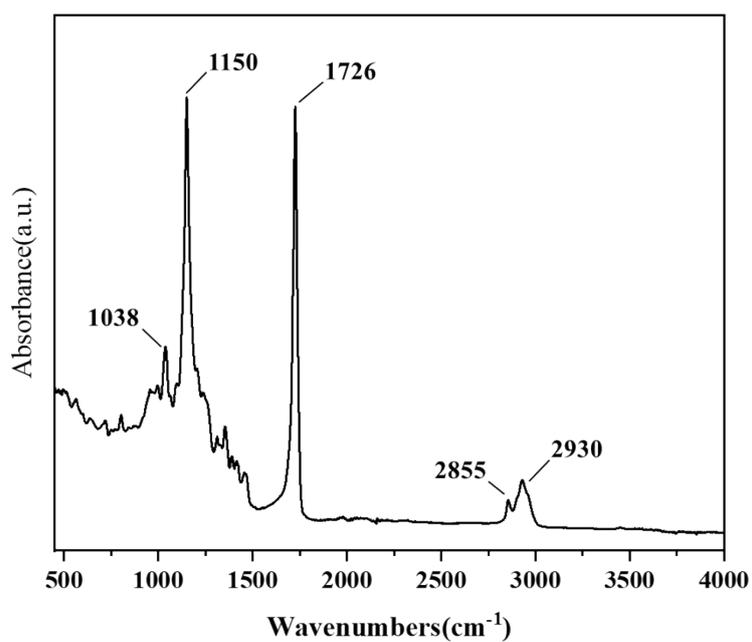


Figure.S2 FTIR spectra of the PBDSE material.

Figure S2 shows the FTIR spectra of the PBDSE. The characteristic absorption peaks of symmetric and antisymmetric vibrations of methylene ($-\text{CH}_2$) in PBDSE are located at 2930 and 2855cm^{-1} , respectively. The characteristic absorption peak at 1726cm^{-1} is the vibration peak of ester carbonyl group, which indicates the existence of ester group in PBDSE. 1150cm^{-1} is the characteristic absorption peak of C-O-C=O group. In addition, the characteristic absorption peak at 1038cm^{-1} belongs to the C-O group in 1,3-propanediol.