

Electronic Supplementary Information (ESI)

Correlation Between Ion Gel Characteristics and Performance of Ionic Pressure Sensors

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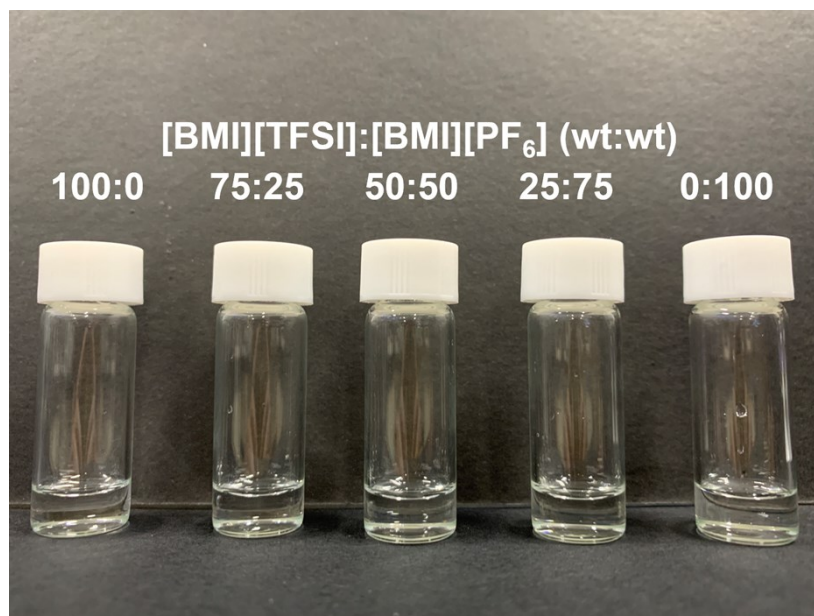


Fig. S1 Photographs of mixed ILs consisting of [BMI][TFSI] and [BMI][PF₆] at various compositions.

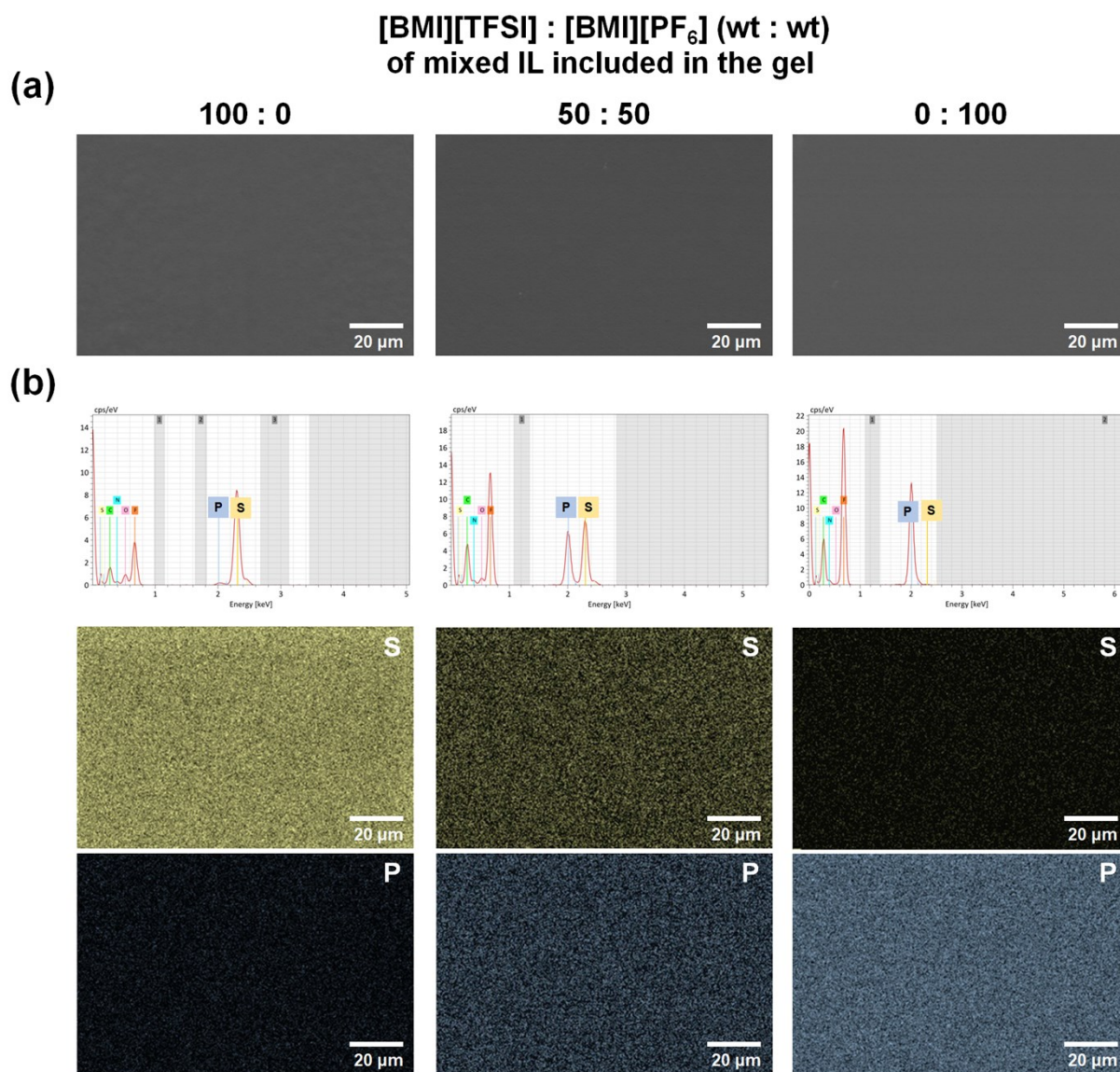


Fig. S2 (a) SEM images and (b) the results of EDS analysis for three ion gels at different compositions of mixed IL. The colors corresponding to sulfur (S) and phosphorus (P) imply the presence of [BMI][TFSI] and [BMI][PF₆], respectively.

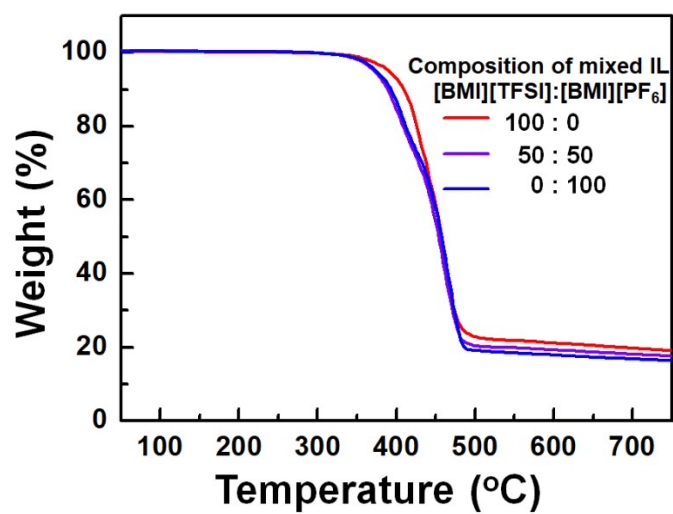


Fig. S3 TGA thermograms of ion gels based on different compositions of mixed ILs, indicating their high thermal stability.

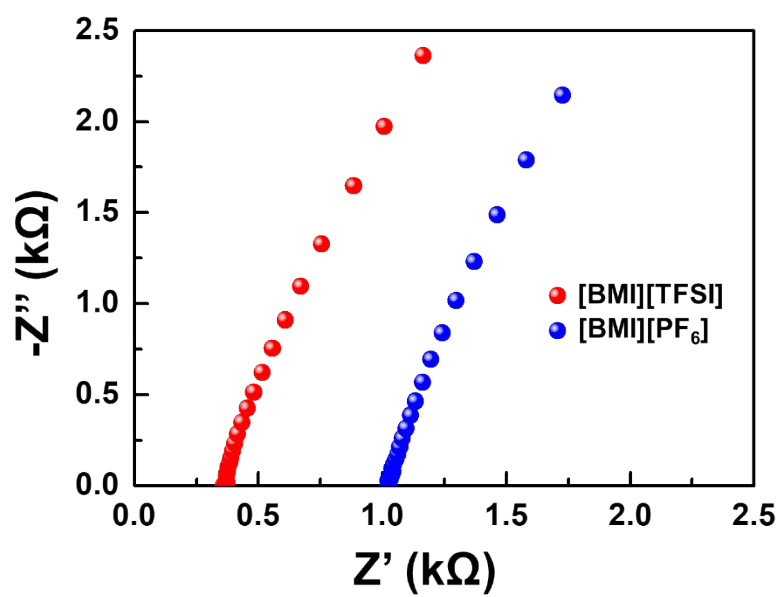


Fig. S4 Nyquist plots of pure [BMI][TFSI] and [BMI][PF₆], from which the ionic conductivities of ~ 4.27 and ~ 1.54 mS \cdot cm⁻¹ were extracted, respectively.

Table S1 Performance summary of reported pressure sensors with simple gel-type electrolyte films.

Ref	Electrolyte layer	Detectable pressure range showing the highest sensitivity (kPa)	Sensitivity (kPa⁻¹)
This work	P(VDF- <i>co</i> -HFP) /mixed IL with 50% [BMI][TFSI]	75.8	0.058
(S1)	CS-PHEAA DN-Cit hydrogel	136	0.023
(S2)	NNMBA/[VEIm][DCA]	0.025	15.4
(S3)	PVA-PAM hydrogel/KCl	3.27	0.05
(S4)	PAA/PVA/CNT/EG	4.67	0.243
(S5)	P(AM- <i>co</i> -LMA) HLP cross-linked hydrogel	15	0.131
(S6)	Cross-linked PAA/[EMI][DCA]	0.2	0.73
(S7)	ACC/PAA/alginate hydrogel	1	0.17
(S8)	PVA/CNF D hydrogel	4	0.75

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