

Supporting Information

Covalently cross-linked polymer stabilized electrolytes with self-healing performance via boronic ester bonds

Sibo Li,^{1,#} Cai Zuo,^{1,#} Yong Zhang,¹ Jirong Wang,¹ Huihui Gan,¹ Shaoqiao Li,¹ Liping Yu,¹
Binghua Zhou^{*,2}, Zhigang Xue^{*,1,3}

¹Key Laboratory for Material Chemistry of Energy Conversion and Storage, Ministry of Education, School of Chemistry and Chemical Engineering, Huazhong University of Science and Technology, Wuhan 430074, China. ²Institute of Advanced Materials (IAM), Jiangxi Normal University, Nanchang 330022, China. ³State Key Laboratory of Materials Processing and Die & Mold Technology, Huazhong University of Science and Technology, Wuhan 430074, China.

E-mail addresses: zhoubh@jxnu.edu.cn (B. Zhou); zgxue@mail.hust.edu.cn (Z. Xue)

[#]These authors contributed equally to this work.

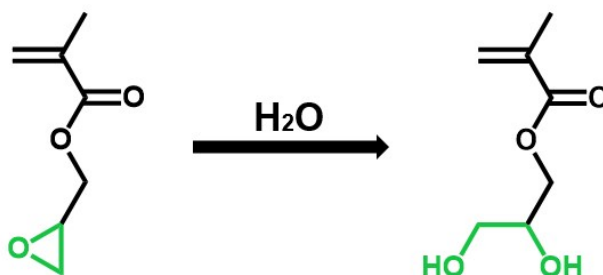


Fig. S1. Schematic illustration of the preparation procedure of DHPMA.

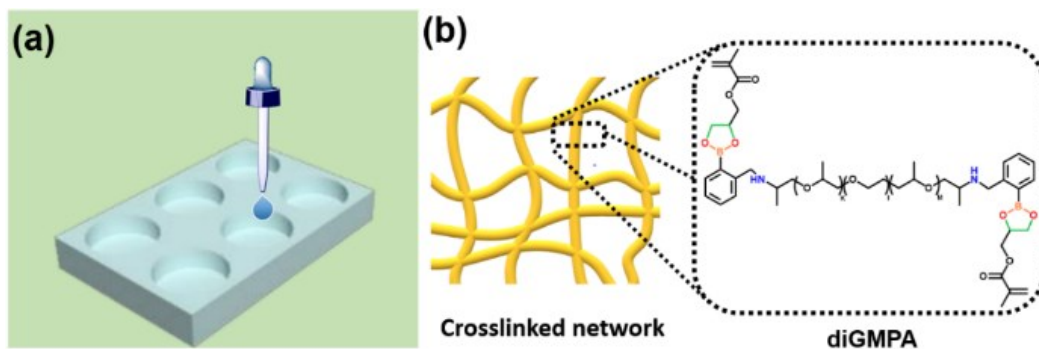


Fig. S2. (a) Fabrication route of SPEs via the solution casting procedure; (b) Schematic illustration of the diGMPA-based SPEs with the cross-linked network.

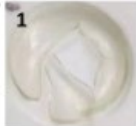
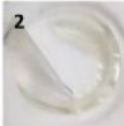


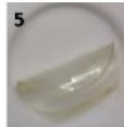
Entry	diGMPA (g)	BA (g)	LiClO ₄ (wt%)	BP (wt%)	σ (S cm ⁻¹) _{60°C}		
1	0.5	0.1	11	0.5	×		
2	0.5	0.2	11	0.5	×		
3	0.5	0.3	11	0.5	×		
4	0.5	0.4	11	0.5	5.7E-6		
5	0.5	0.5	11	0.5	9.8E-6		

Fig. S3. Ionic conductivity of P(*n*-BA)-diGMPA system at 60°C (left); Optical images of P(*n*-BA)-diGMPA system (right).

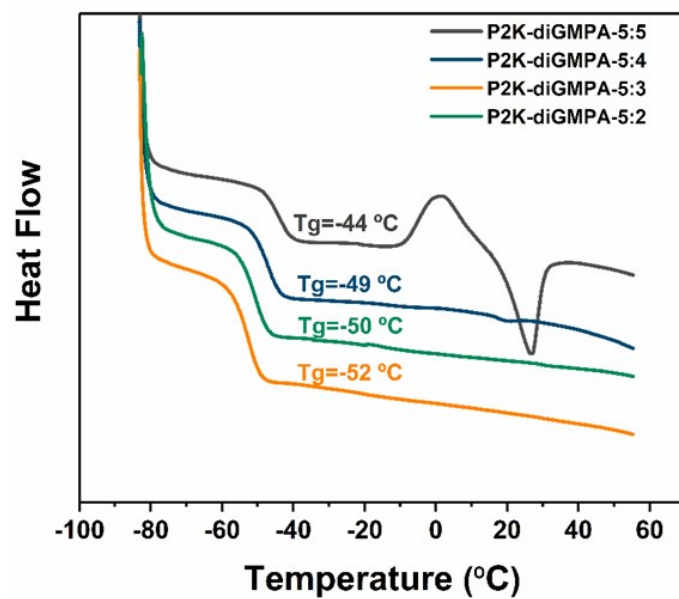


Fig. S4 DSC curves of solid polymer electrolytes with different content of PEGDA.

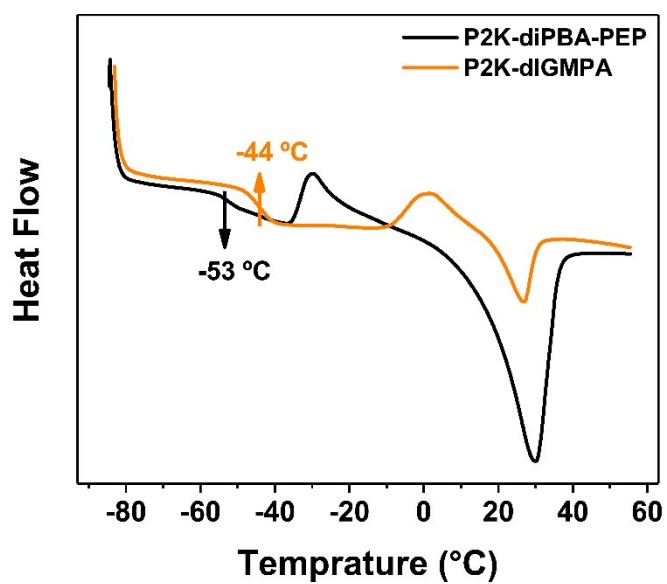


Fig. S5 DSC curves of P2K-diPBA-PEP and P2K-diGMA.