

Supporting Information

Enhanced Energy Density of Polymer Dielectrics at High Temperature by Building a B-N Coordinated Supramolecular Network

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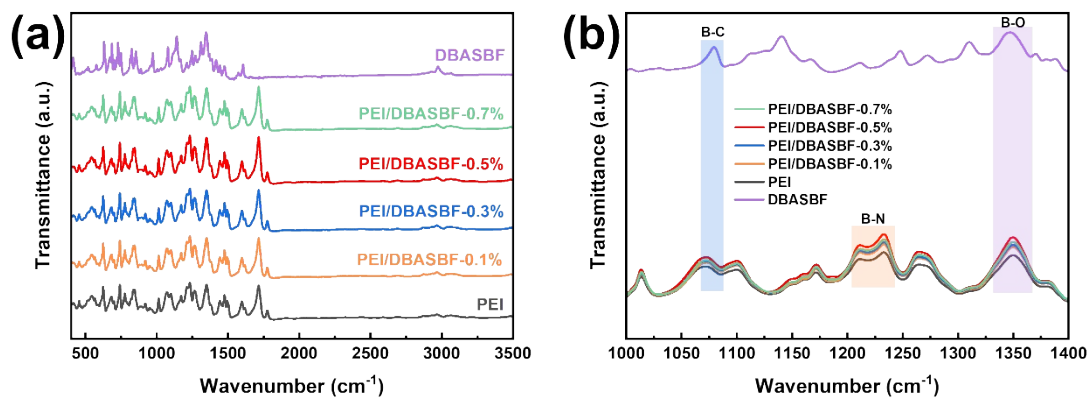


Fig S1. (a)FTIR spectra and (b)Intensity comparison of DBASBF and composite films with varying filler contents.

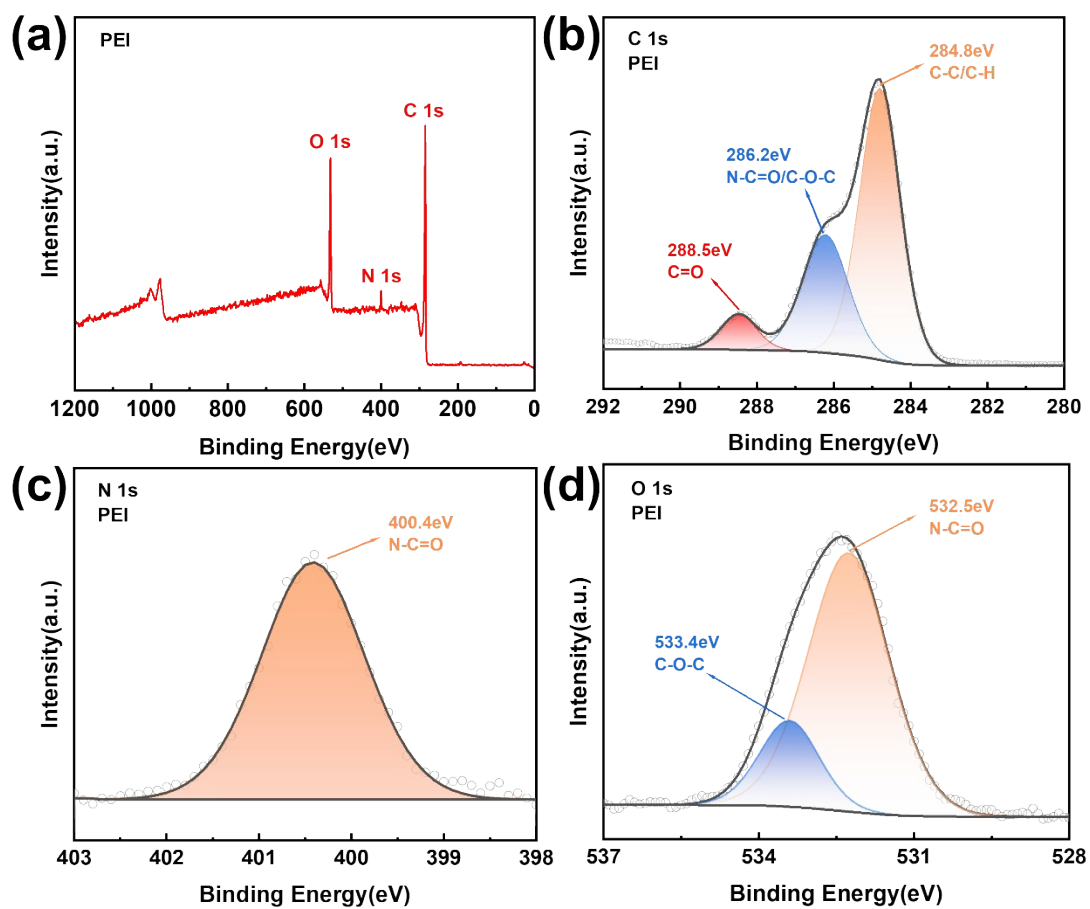


Fig S2. (a) XPS Spectrum of PEI; High-resolution (b)C 1s, (c)N 1s and (d)O1s XPS spectrum of PEI.

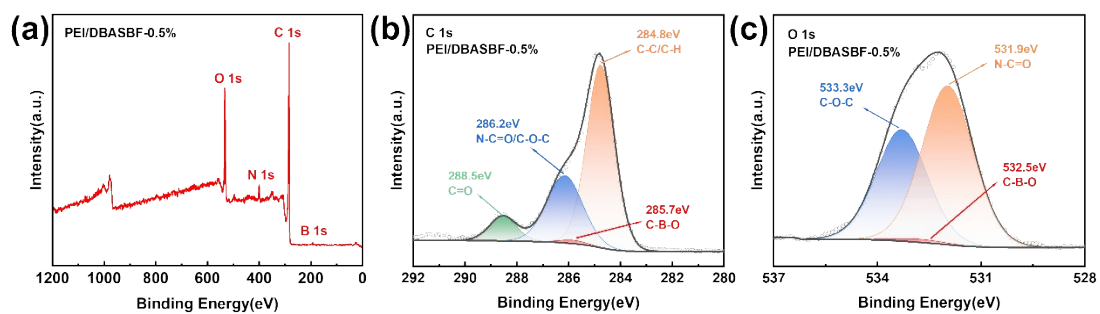


Fig S3. (a) XPS Spectrum of PEI/DBASBF-0.5%; High-resolution (b)C 1s and (c)O1s XPS spectrum of PEI/DBASBF-0.5%.

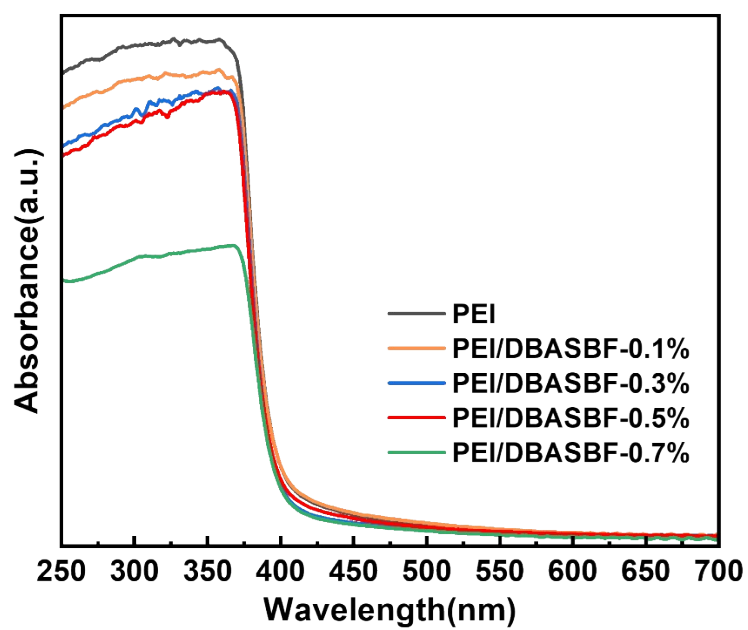


Fig S4. UV-Vis absorption spectra of the films with different DBASBF contents

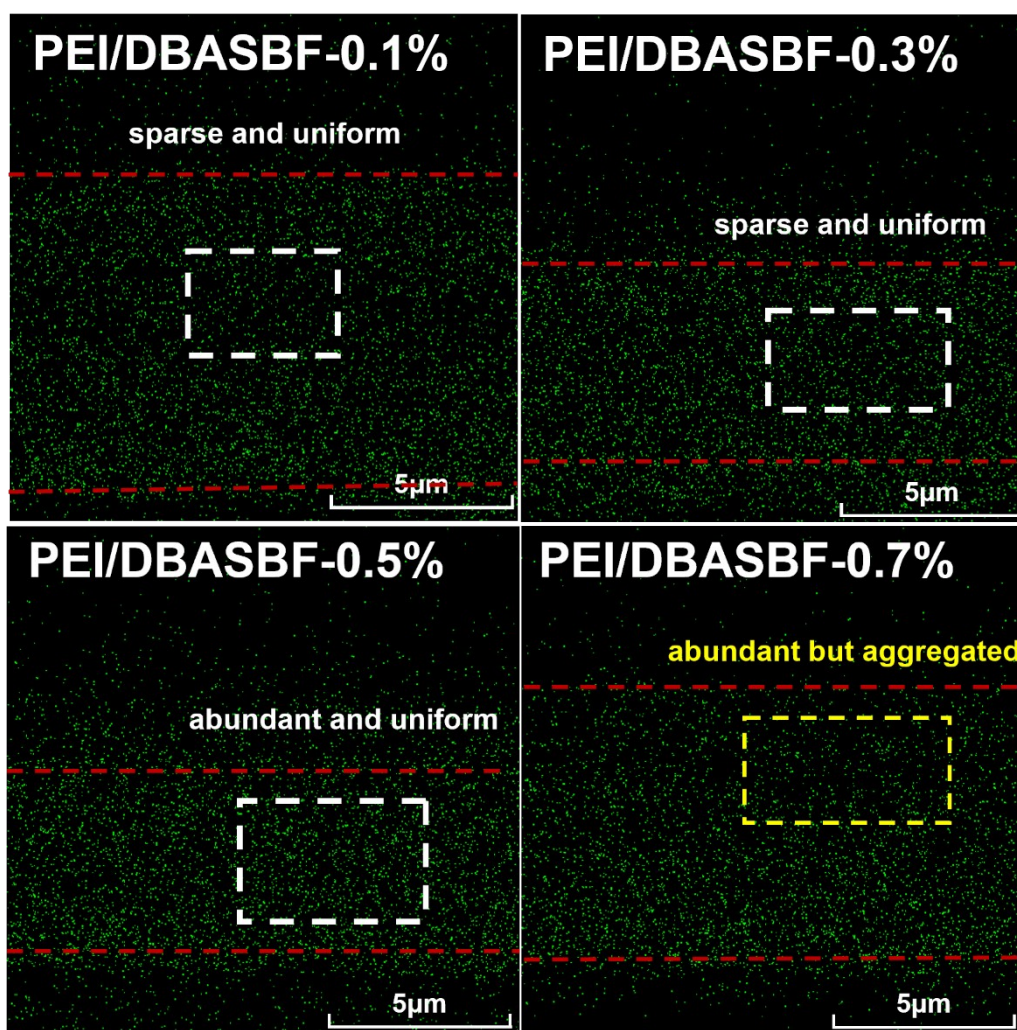


Fig S5. Comparison of B-element EDX mapping images of the cross sections of PEI/DBASBF composites

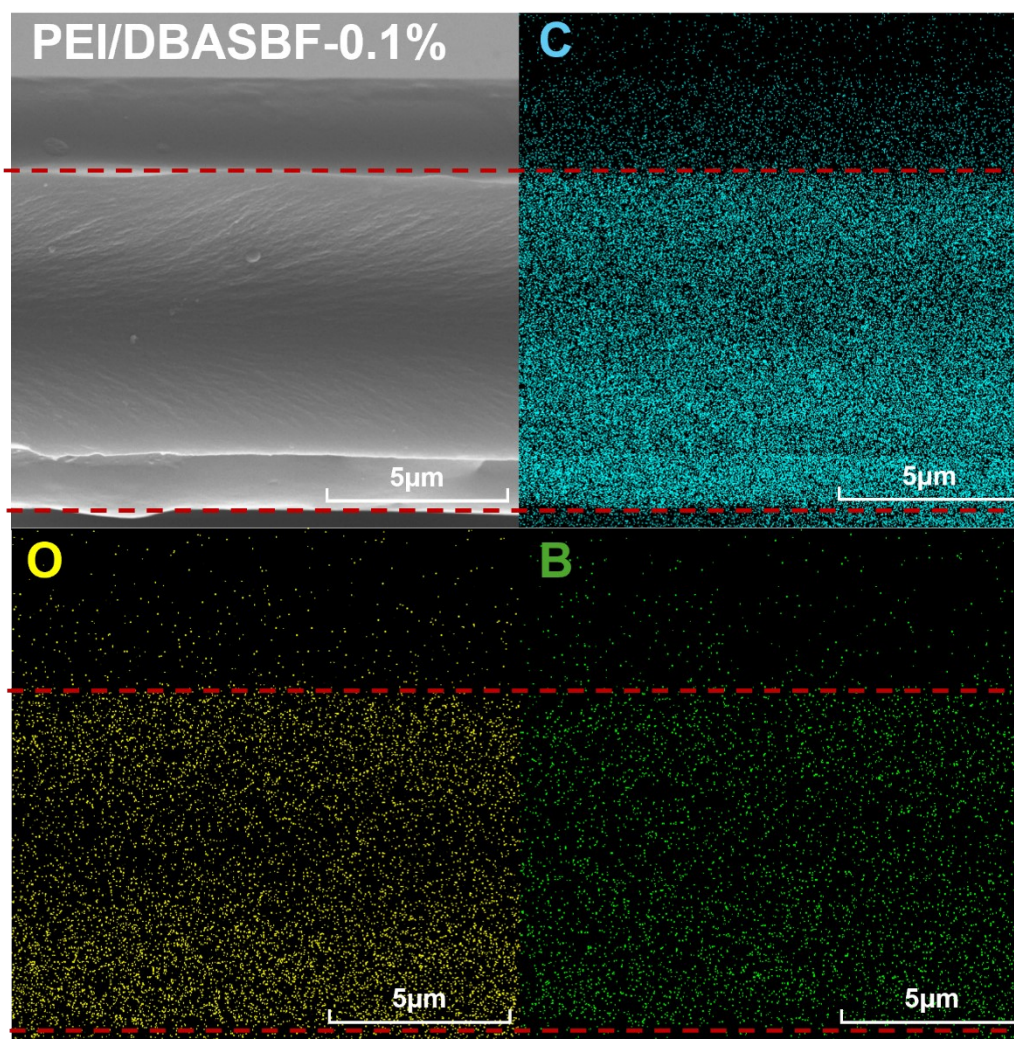


Fig S6. Cross-sectional SEM image and EDX mapping images of C, O, and B elements for PEI/DBASBF-0.1%

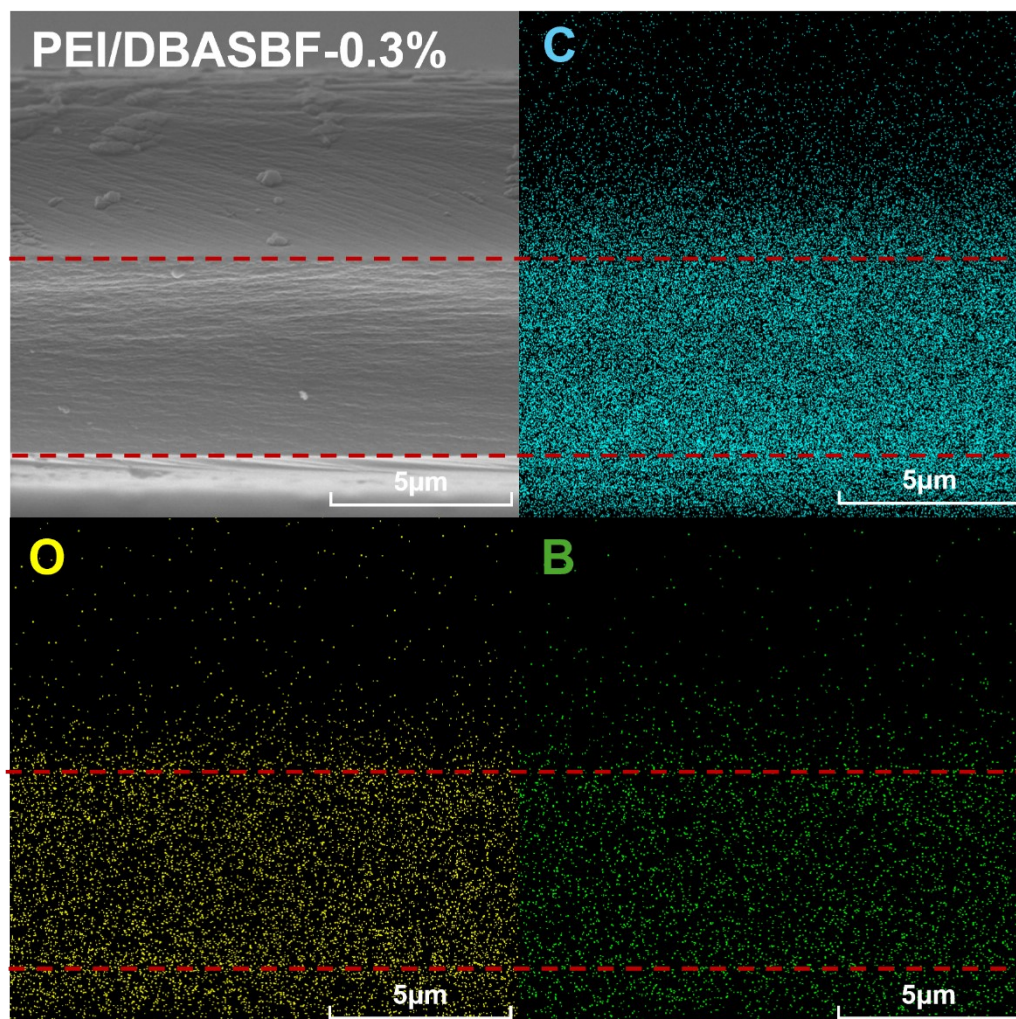


Fig S7. Cross-sectional SEM image and EDX mapping images of C, O, and B elements for PEI/DBASBF-0.3%

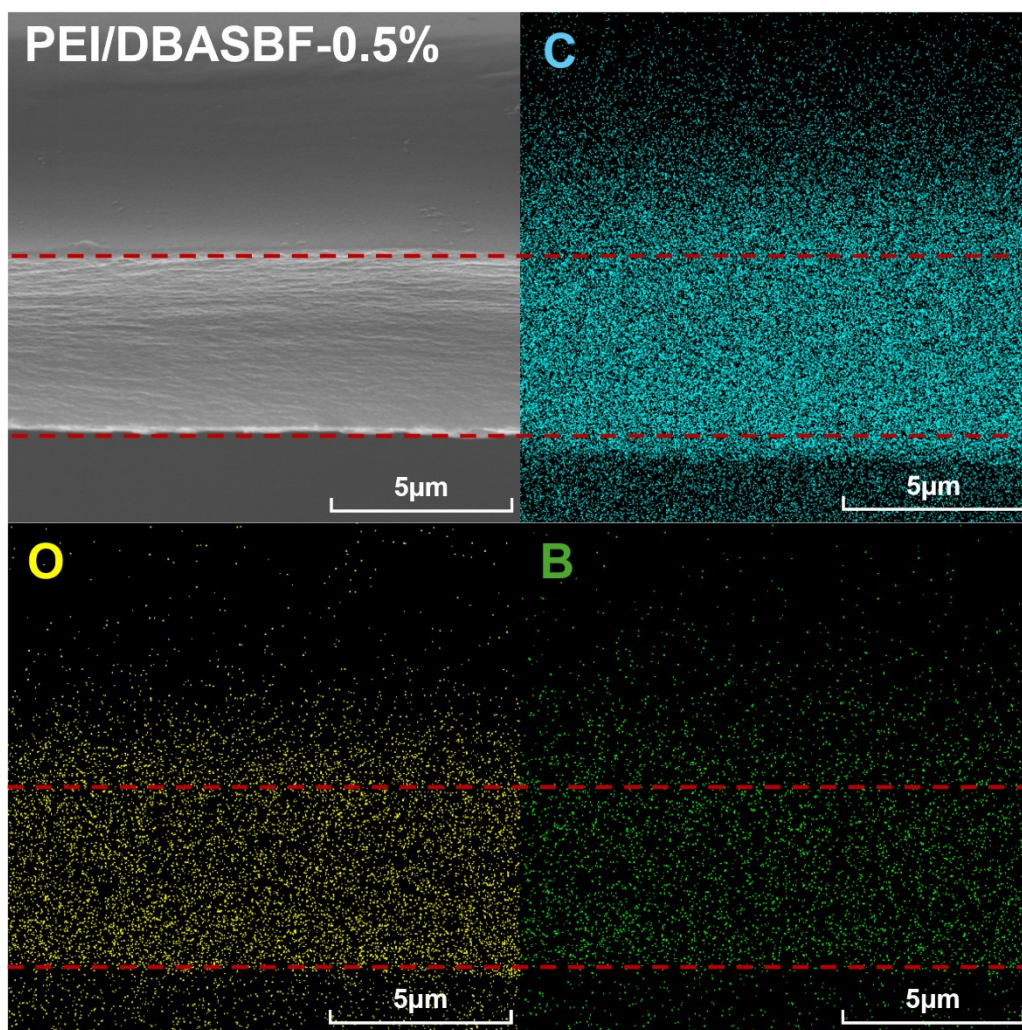


Fig S8. Cross-sectional SEM image and EDX mapping images of C, O, and B elements for PEI/DBASBF-0.5%

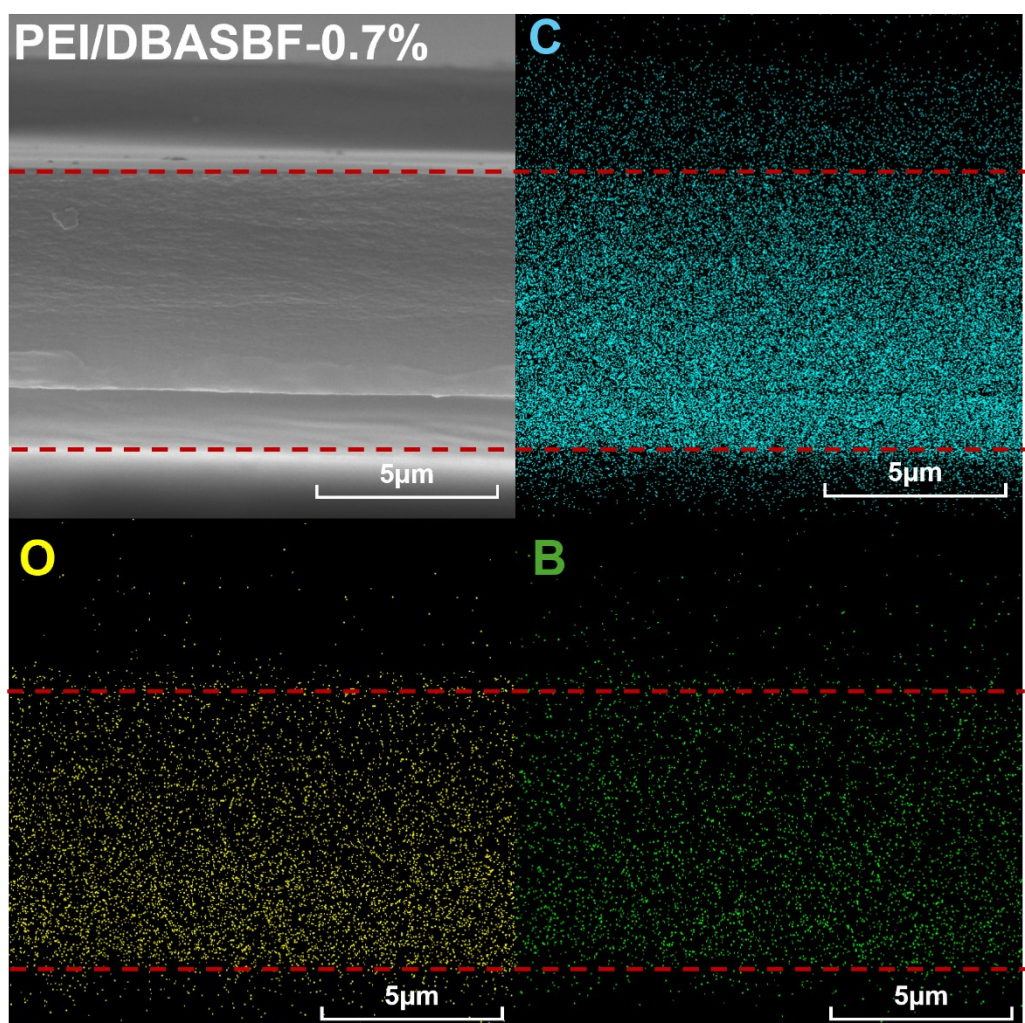


Fig S9. Cross-sectional SEM image and EDX mapping images of C, O, and B elements for PEI/DBASBF-0.7%

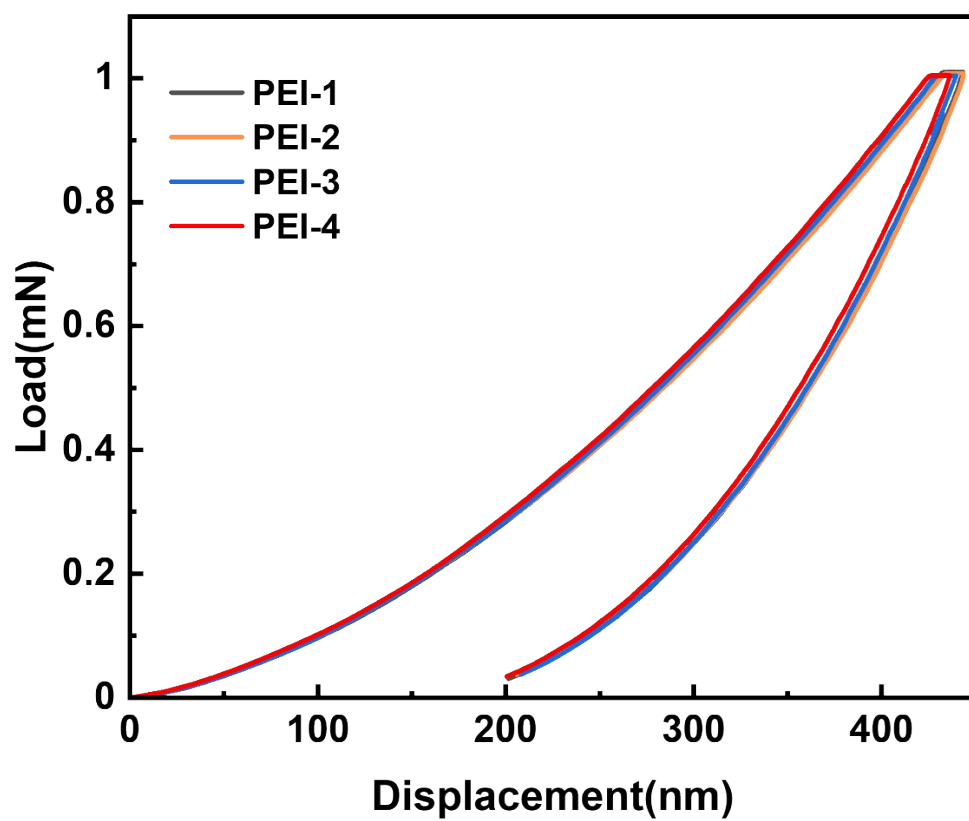


Fig S10. The modulus comparisons for all loadings of PEI

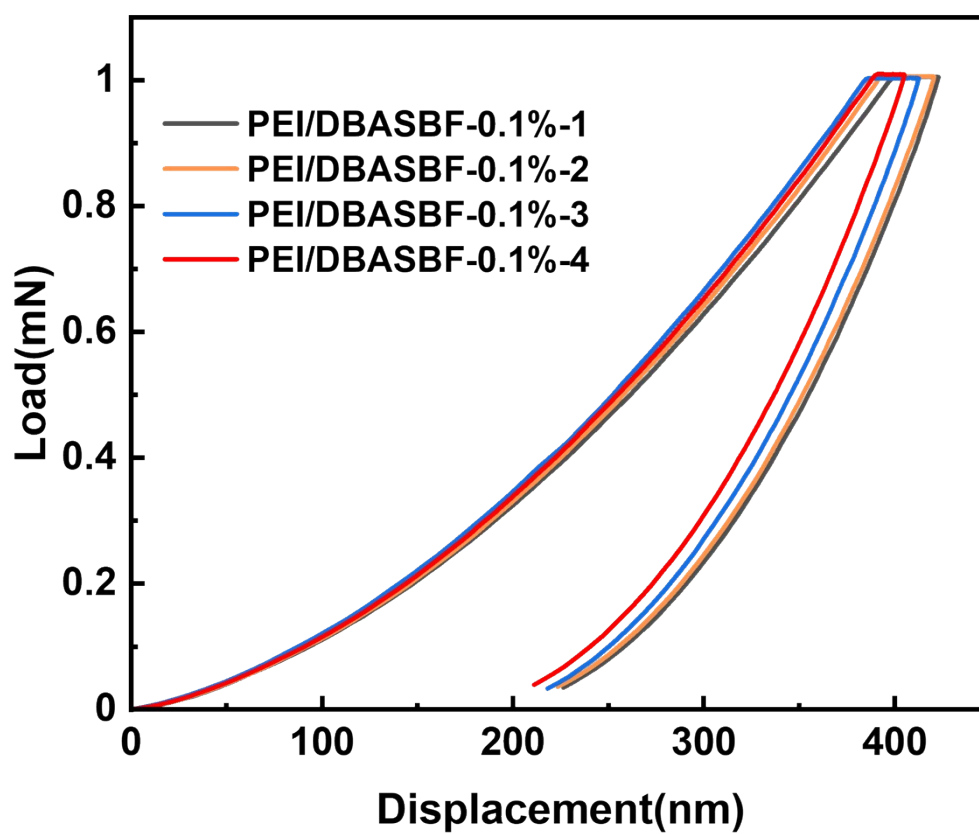


Fig S11. The modulus comparisons for all loadings of PEI/DBASBF-0.1%

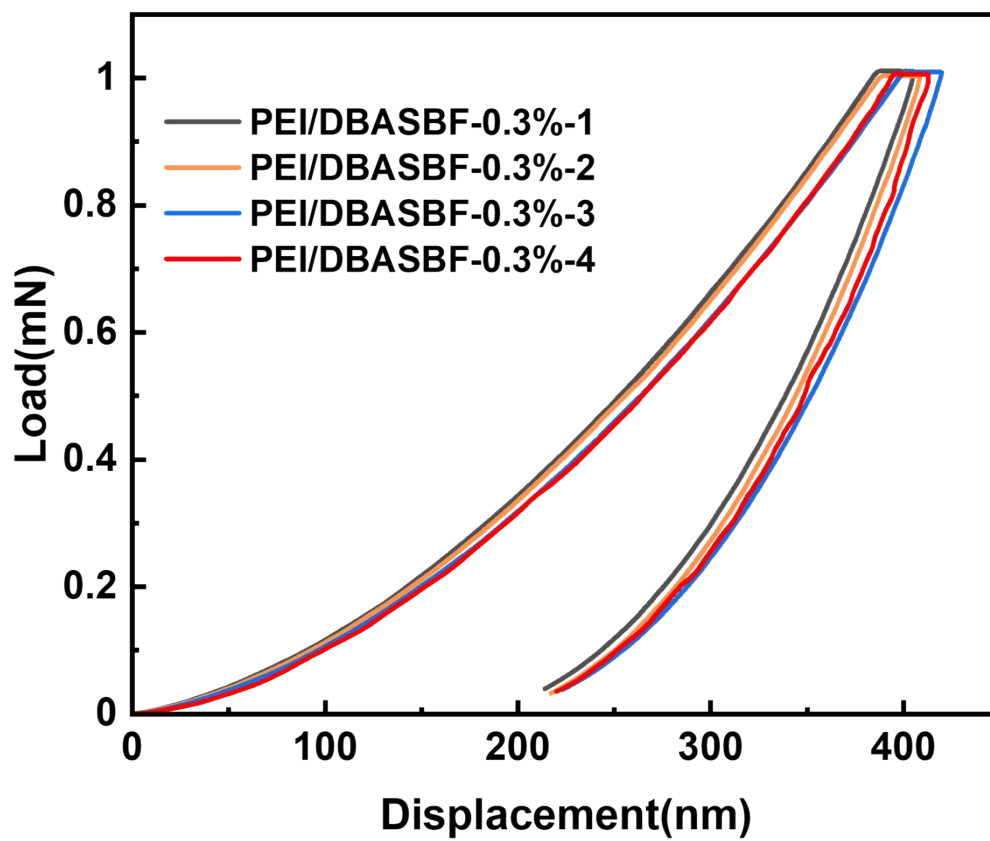


Fig S12. The modulus comparisons for all loadings of PEI/DBASBF-0.3%

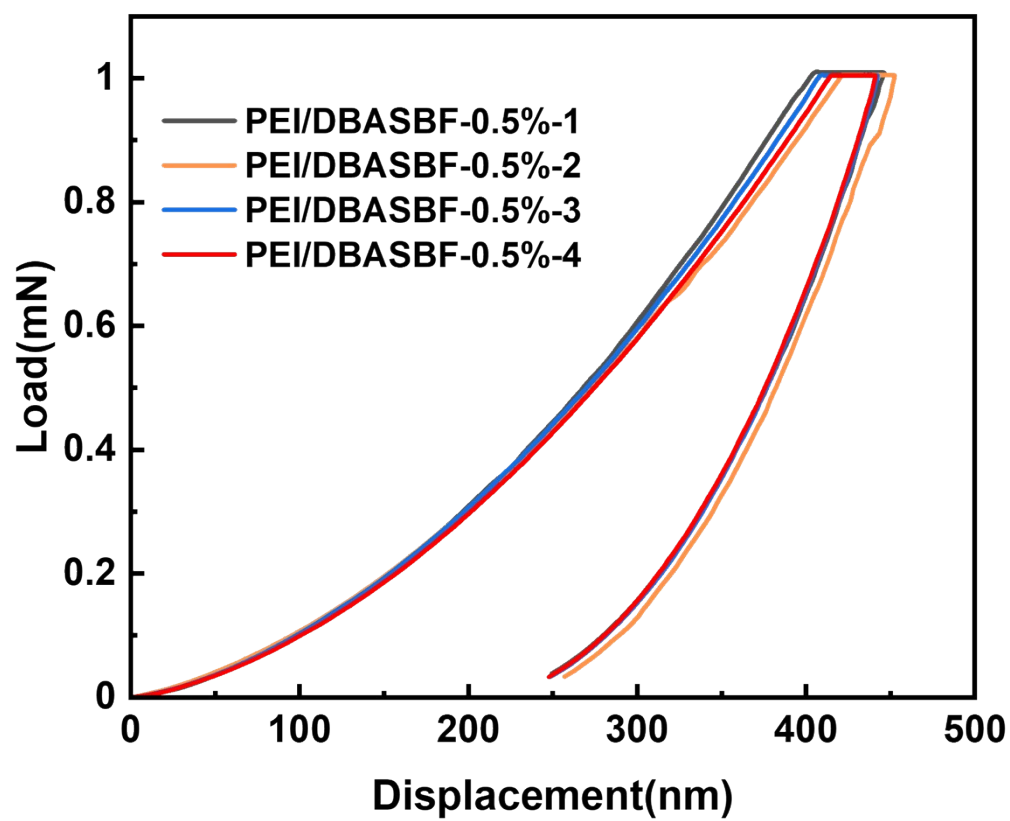


Fig S13. The modulus comparisons for all loadings of PEI/DBASBF-0.5%

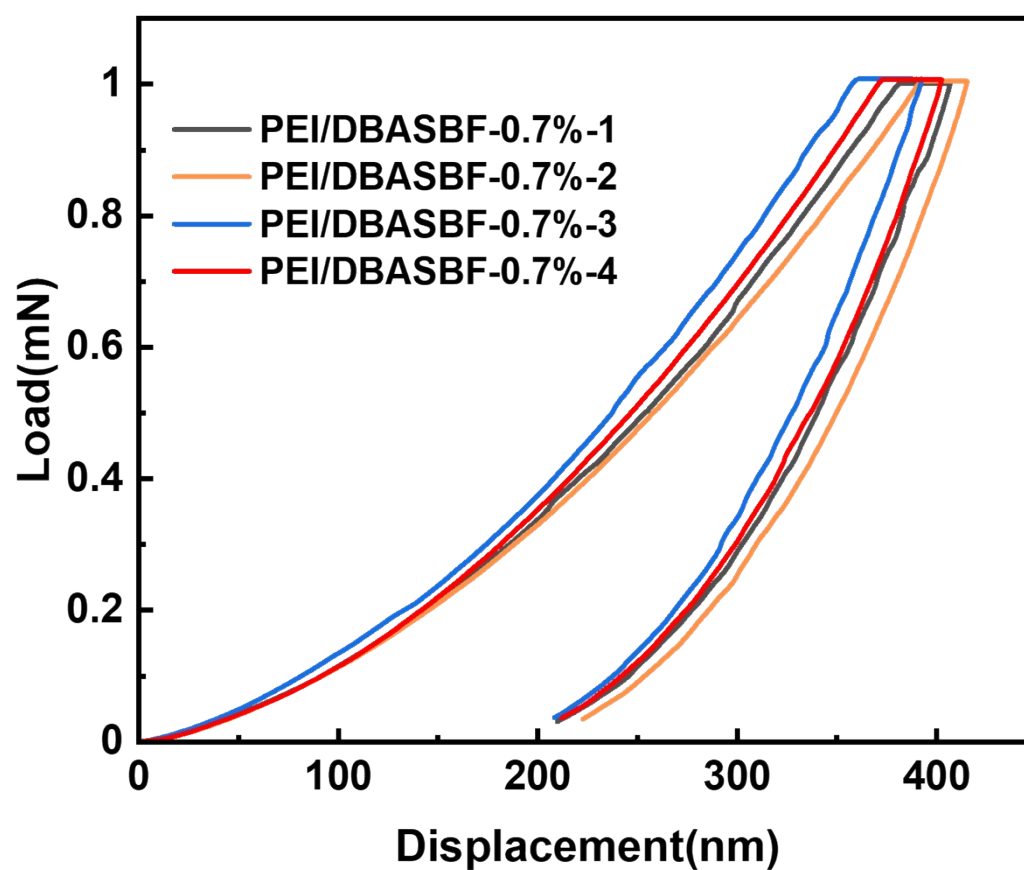


Fig S14. The modulus comparisons for all loadings of PEI/DBASBF-0.7%

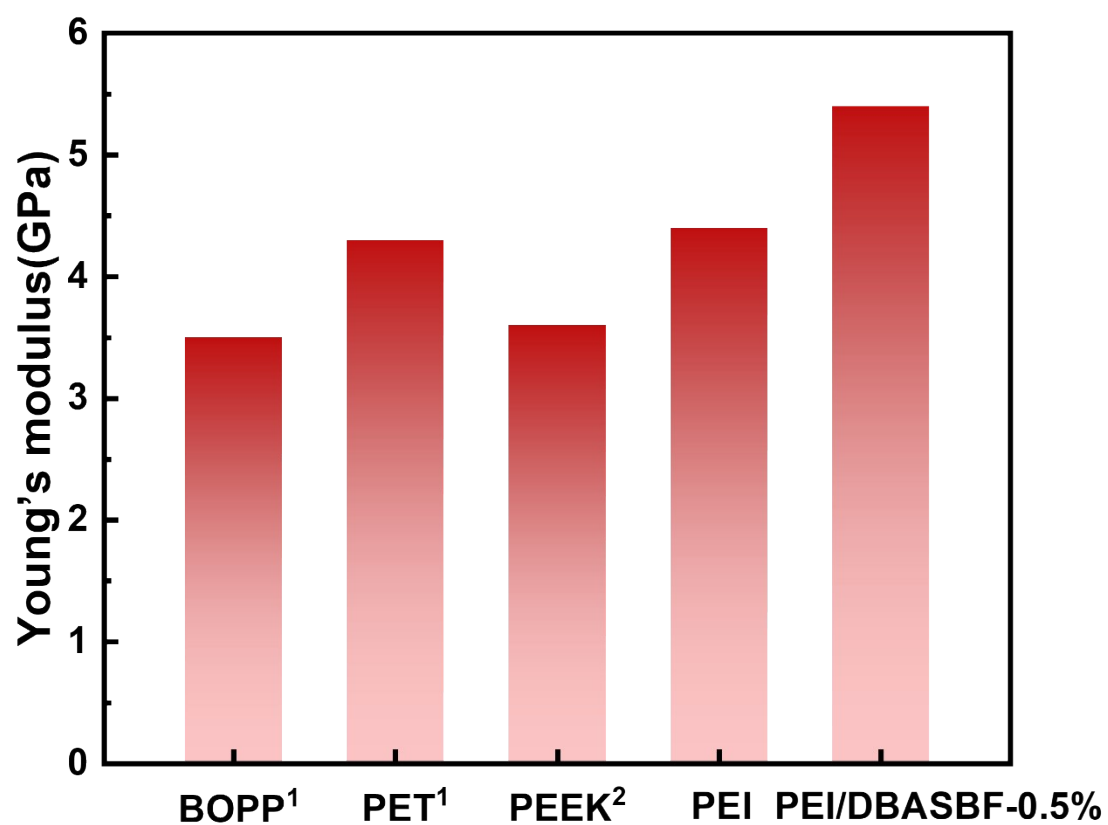


Fig S15. Comparisons of Young's Modulus between PEI/DBASBF-0.5% and other dielectric polymers^{1,2}

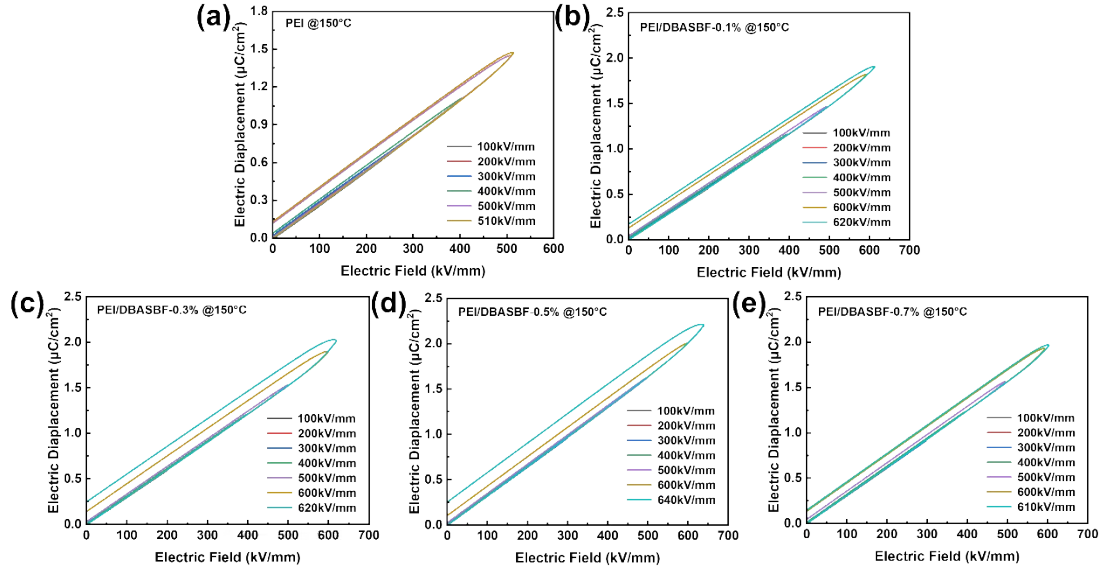


Fig S16. D-E loops of the (a)PEI, (b)PEI/DBASBF-0.1%, (c)PEI/DBASBF-0.3%, (d)PEI/DBASBF-0.5%, (e)PEI/DBASBF-0.7% at 150°C.

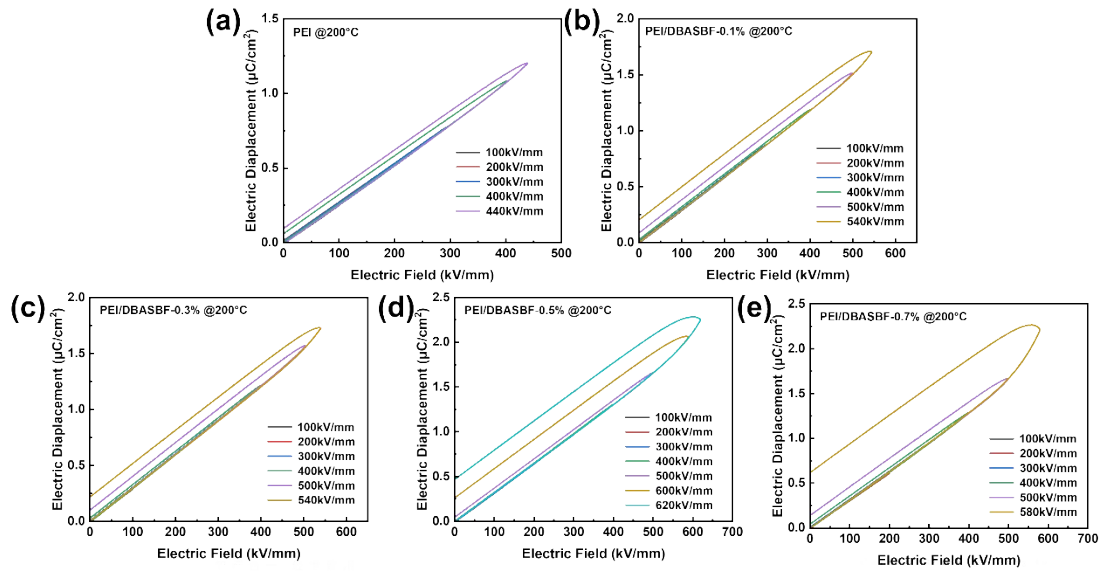


Fig S17. D-E loops of the (a)PEI, (b)PEI/DBASBF-0.1%, (c)PEI/DBASBF-0.3%, (d)PEI/DBASBF-0.5%, (e)PEI/DBASBF-0.7% at 200°C .

References

- 1 H. Li, M. R. Gadinski, Y. Huang, L. Ren, Y. Zhou, D. Ai, Z. Han, B. Yao and Q. Wang, *Energy Environ. Sci.*, 2020, 13, 1279–1286.
- 2 X. Li, K. Fan, J. He, S. Sun, Y. Chai, Z.-M. Dang and X. Liu, *Energy Environ. Sci.*, DOI:10.1039/d5ee01964h.