

Supporting Information

Enhanced intrinsic thermal conductivity of liquid crystalline polyester through monomer structure optimization in main chains

Panpan Yang^{a,c,d,e}, Yifei Wu^b, Kunxin Wang^{a,c,d,e}, Sheng Lu^{a,c,d,e}, Yuemiao Zhang^{a,c,d,e}, Junxi Wan^{f*}, Kun Wu^{a,e*}, Jun Shi^{a,d}

a Guangzhou Institute of Chemistry, Chinese Academy of Sciences, Guangzhou 510650, PR China.

b College of Materials Science and Engineering, North China University of Science and Technology, Tangshan, 063210, China

c CAS Engineering Laboratory for Special Fine Chemicals, Guangzhou 510650, China.

d CASH GCC Shaoguan Research Institute of Advanced Materials, Nanxiong 510650, PR China.

e University of Chinese Academy of Sciences, Beijing 10049, PR China.

f Yulin Normal University, Yulin, 537006, PR China.

*Corresponding author. E-mail address: wukun@gic.ac.cn; wanjx0193@163.com

S1. Supporting Results

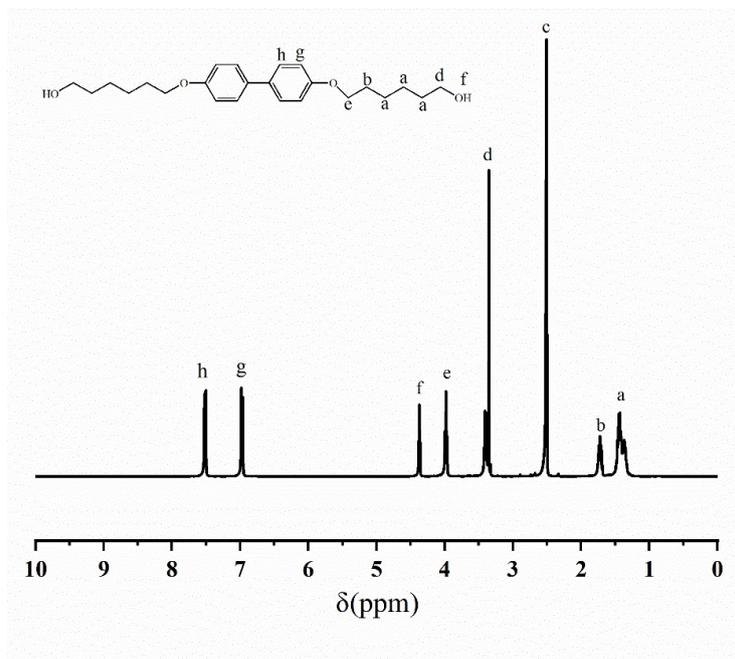


Fig. S1. FT-IR ¹H-NMR spectrum (b) of BHHBP

The assignment of H signals in ¹H-NMR spectrum are shown as follows:

δ 7.51 (d, 2H, h), 6.96 (d, 2H, g), 4.36 (t, 1H, f), 3.97 (t, 2H, e), 3.34 (s, 4H, d), 2.51 ((CD₃)₂SO, c), 1.79 – 1.64 (m, 2H, b), 1.53 – 1.23 (m, 6H, a).

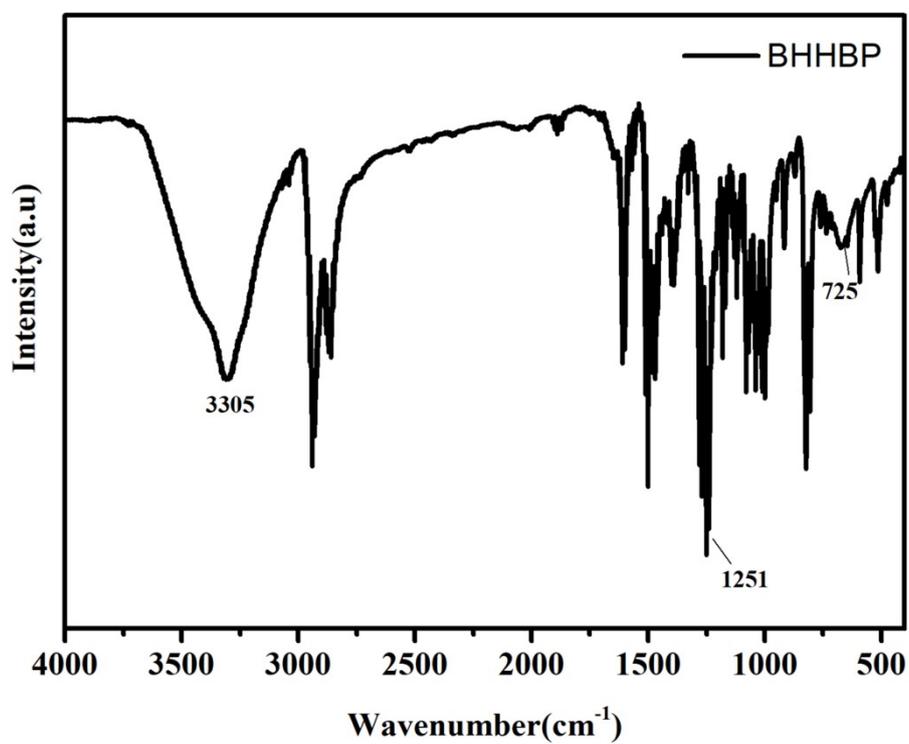


Fig. S2 FTIR graph of BHHBP

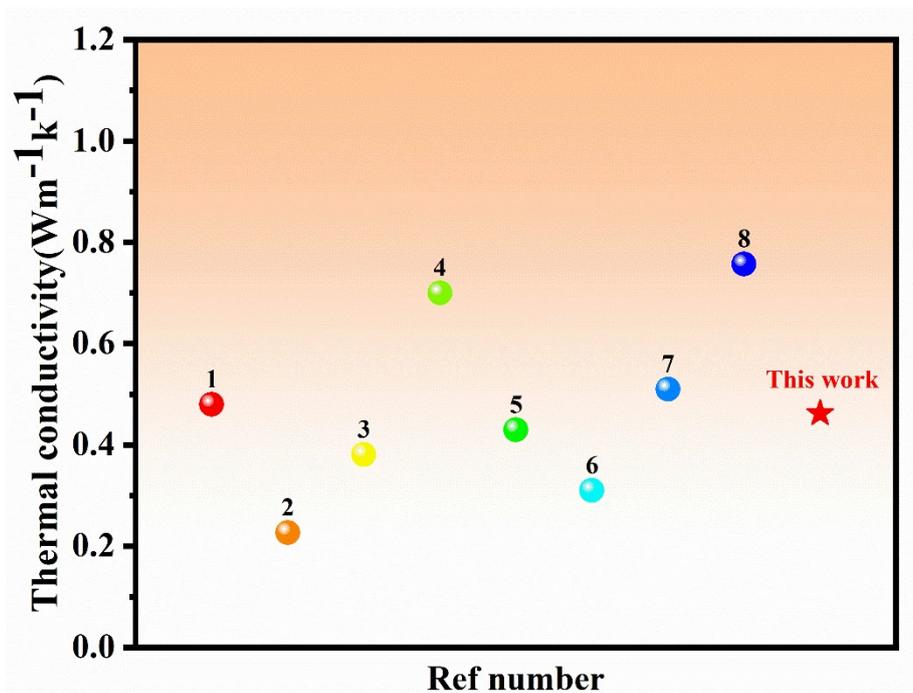


Fig. S3 Plots of versus TC, compared to those obtained from previous studies¹⁻⁸

Table S1. The molecular weight of polyesters

Sample	<i>M_w</i>	<i>PDI</i>
B-LCP2	53418	1.52
B-LCP3	65825	2.62
B-LCP4	87476	3.20

Reference

1. I. A. Md., L. Hongjin, Y. Nam-Ho, A. Seokhoon, G. Munju, H. J. Ryang, Y. Hyeonuk and J. S. Gyu, *ACS Macro Letters*, 2018, **7**, 1180-1185.
2. W. Chen, K. Wu, Z. Qu and M. Lu, *Eur. Polym. J.*, 2019, **121**.104370
3. W. Chen, K. Wu, B. Nan and M. Lu, *Reactive and Functional Polymers*, 2019, **145**.109275
4. Y. Li, C. Liu, W. Zhou, Z. Hou, Q. Shi, C. Gong and Y. Wu, *Materials Today Communications*, 2021, **29**, 102792.
5. M. M. Hossain, A. I. Olamilekan, H.-O. Jeong, H. Lim, Y.-K. Kim, H. Cho, H. D. Jeong, M. A. Islam, M. Goh, N.-H. You, M. J. Kim, S. Q. Choi, J. R. Hahn,

- H. Yeo and S. G. Jang, *Macromolecules*, 2022, **55**, 4402-4410.
6. R. Takehara, N. Kubo, M. Ryu, S. Kitani, S. Imajo, Y. Shoji, H. Kawaji, J. Morikawa and T. Fukushima, *Journal of the American Chemical Society*, 2023, **145**, 22115-22121.
 7. X. Zhong, K. Ruan and J. Gu, *Research*, 2022, **2022**, 9805686.
 8. T. E. Trinh and H. Yeo, *Materials Advances*, 2024, **5**, 1702-1714.