## **Effect of Side Chain Substituent Volume on Thermoelectric Properties of IDT-Based Conjugated Polymers**

De-Xun Xie 1,2, Tong-Chao Liu 3, Jing Xiao 1,2, Jing-Kun Fang 4,\*, Cheng-Jun Pan 3 and Guang Shao 1,2,\*

- <sup>1</sup> School of Chemistry, Sun Yat-sen University, Guangzhou 510275, China; xiedx9@mail.sysu.edu.cn (D.-X.X.); xiaoj69@mail.sysu.edu.cn (J.X.)
- <sup>2</sup> Shenzhen Research Institute, Sun Yat-sen University, Shenzhen, 518057, China
- <sup>3</sup> Shenzhen Key Laboratory of Polymer Science and Technology, College of Materials Science and Engineering, Shenzhen University, Shenzhen 518060, China: liu21645@163.com (T.-C.L.); pancj@szu.edu.cn (C.-J.P.)
- <sup>4</sup> School of Chemical Engineering, Nanjing University of Science and Technology, Nanjing, 210094, China
- \* Correspondence: shaog@mail.sysu.edu.cn (G.S.); fjk\_003@163.com (J.-K.F.)





Figure S1. <sup>1</sup>H NMR spectrum of P1(a) and P2 (b) (CDCl<sub>3</sub>, 600 MHz, room temperature).



Figure S3. GPC curve of P2.



Figure S4. TGA curves of P1 and P2.



Figure S5. DSC curves of P1 and P2.



Figure S6. DFT calculations of P1 and P2 dimers.



Figure S7. SEM and EDS images of doped P1 and P2.



Figure S8. AFM phase images of P1 and P2 before and after doping.



Figure 9. Calculated intensities of  $\lambda_{854}/\lambda_{630}$  for P1 (black) and  $\lambda_{856}/\lambda_{620}$  for P2 (red).