## **Electronic Supplementary Information**

for

## Enhancement of Thermoelectric Performance of DPP based Polymer by Introducing 3,4-Ethylenedioxythiophene Electron-rich Building Block

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## **GPC** results



Figure S1 GPC results of PDPP5T



Figure S2 GPC results of PDPP-4T-EDOT

## **Thermal property**

The thermal properties of PDPP5T and PDPP-4T-EDOT were studied by thermogravimetric analysis (TGA). TGA analysis shows that both polymers have good thermal stability with decomposition temperature at 5% weight loss higher than 400  $^{\circ}$ C under N<sub>2</sub>.



Figure S3. TGA curves of PDPP5T and PDPP-4T-EDOT

Electrical conductivity of doped polymer films



**Figure S4.** Conductivity of doped PDPP5T and PDPP-4T-EDOT films with dopant concentration from 0.25 mM to 20 mM



Figure S5. Conductivity of doped PDPP5T and PDPP-4T-EDOT films versus their  $I_{polaron} / I_{\pi-\pi^*}$ 

X-ray diffraction of polymer films



Figure S6 XRD patterns for PDPP-5T and PDPP-4T-EDOT films before and after doping.