Electronic Supplementary Material (ESI) for Polymer Chemistry.
This journal is © The Royal Society of Chemistry 2015

High-performance polymer field-effect transistors fabricated with low-bandgap DPP-based semiconducting materials

Zupan Mao,[a,b†] Weifeng Zhang,[a†] Jianyao Huang,[a,b] Keli Shi,[a] Dong Gao,[a,b] Zhihui Chen,[a,b] and Gui Yu[a*]

[a]Beijing National Laboratory for Molecular Sciences, Institute of Chemistry, Chinese Academy of Sciences, Beijing 100190, P. R. China.

E-mail: yugui@iccas.ac.cn.

[b]University of Chinese Academy of Sciences, Beijing 100049, P. R. China.

†Authors Z. P. Mao and W. F. Zhang contributed equally to this work.

S1. Thermogravimetric analysis (TGA) of **PDMOTT-*n***.

.

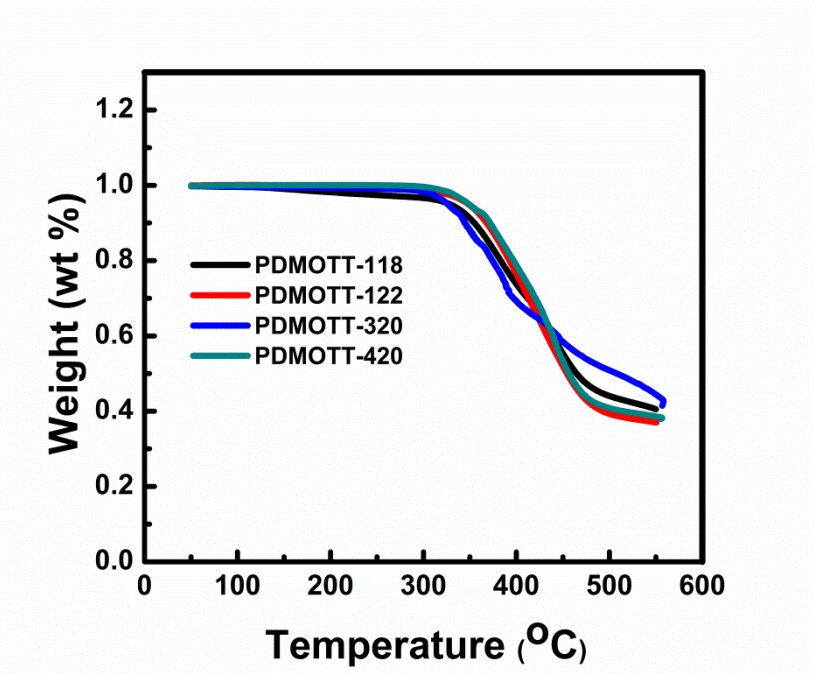


Fig. S1 TGA traces of copolymers **PDMOTT-*n*.**

S2. Electrochemical properties of **PDMOTT-*n***.

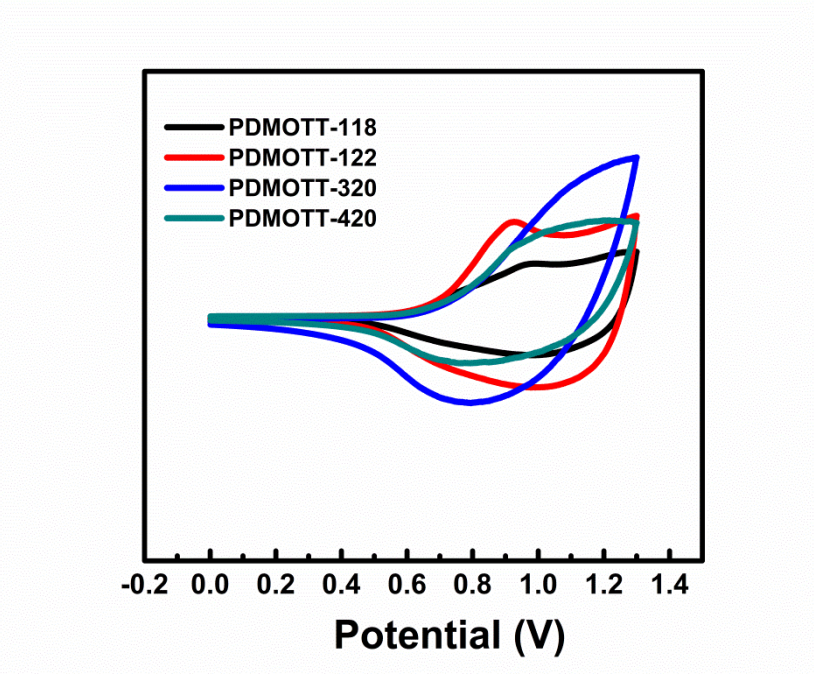


Fig. S2 CV traces of copolymers **PDMOTT-*n*.**

S3. AFM topography images of **PDMOTT-*n*** pristine thin films.

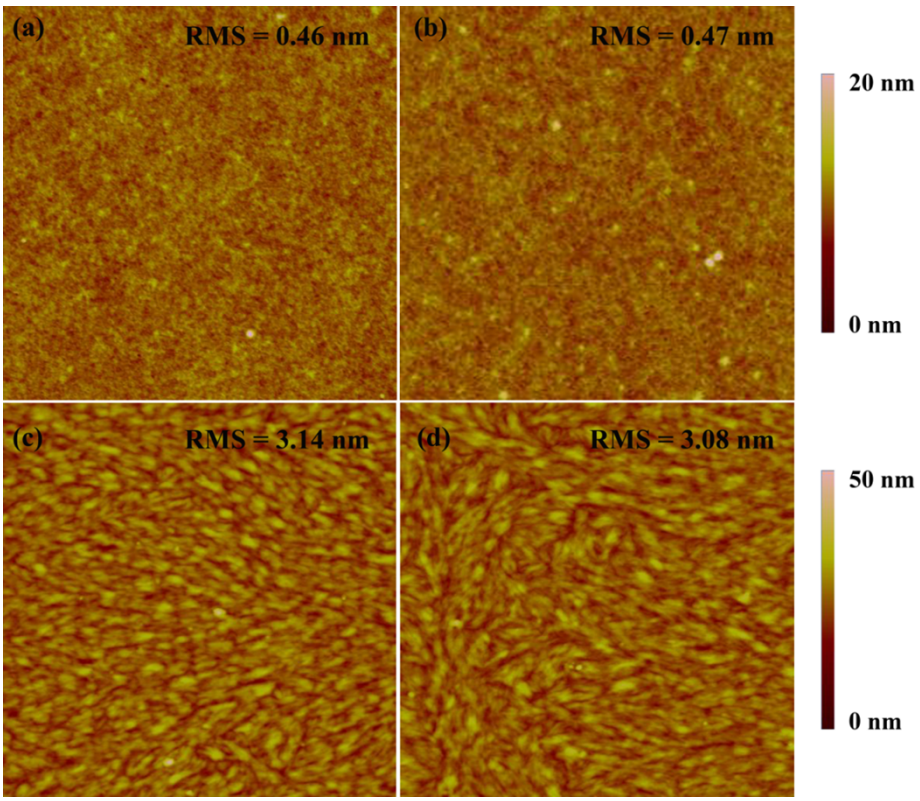


Fig. S3 AFM topography images of **PDMOTT-*n*** pristine thin films on OTS-modified SiO_2/Si substrates. (a) **PDMOTT-*118***, (b) **PDMOTT-*122***, (c) **PDMOTT-*320*** and (d) **PDMOTT-*420***. All images are 5 μm × 5μm in size.

S4. 1D-GIXRD patterns of the **PDMOTT-*n*** thin films

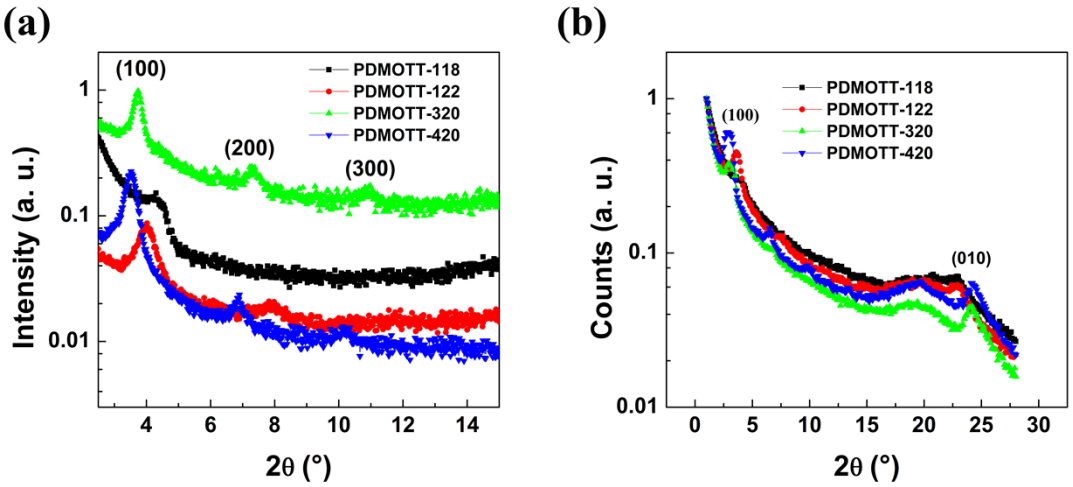
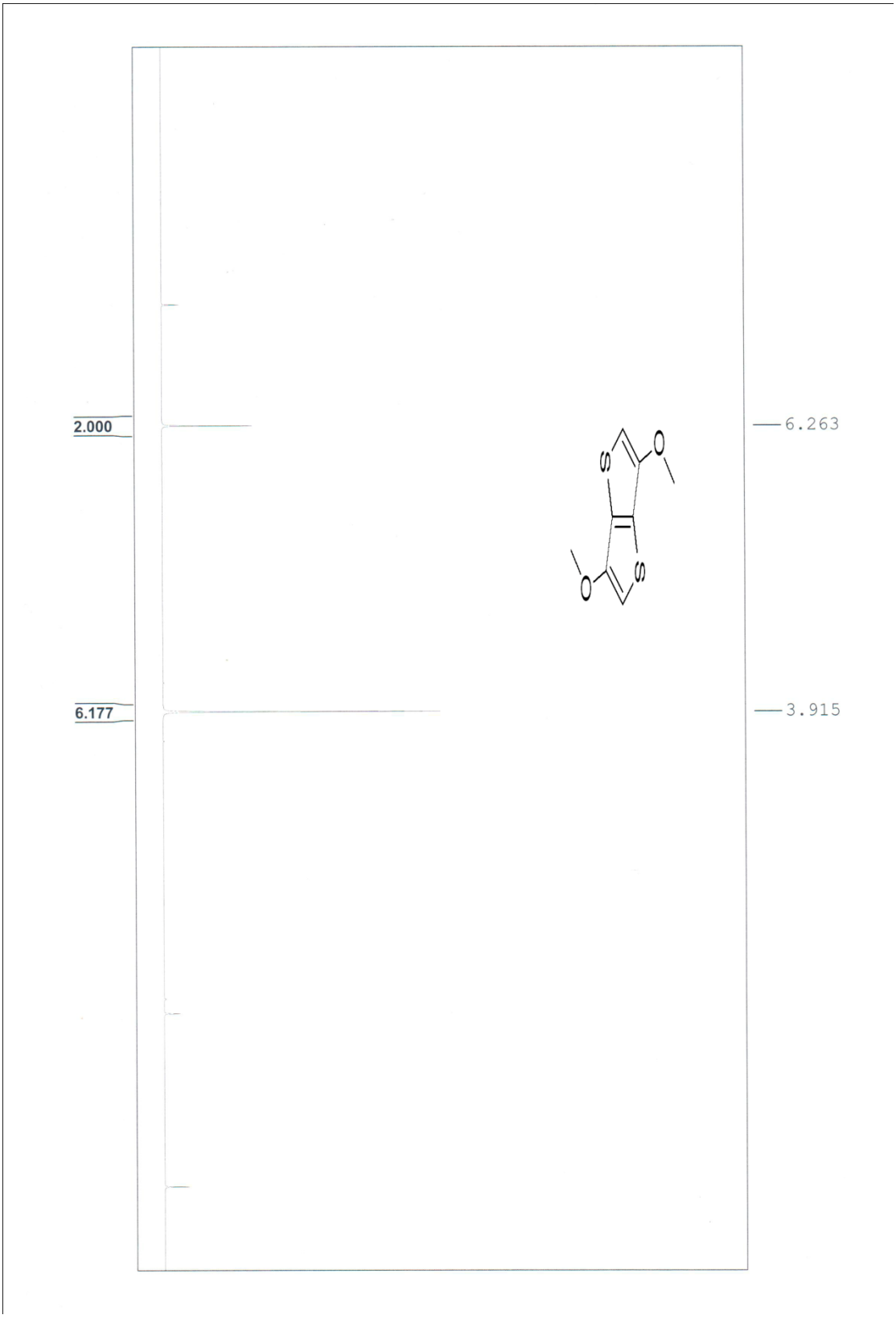
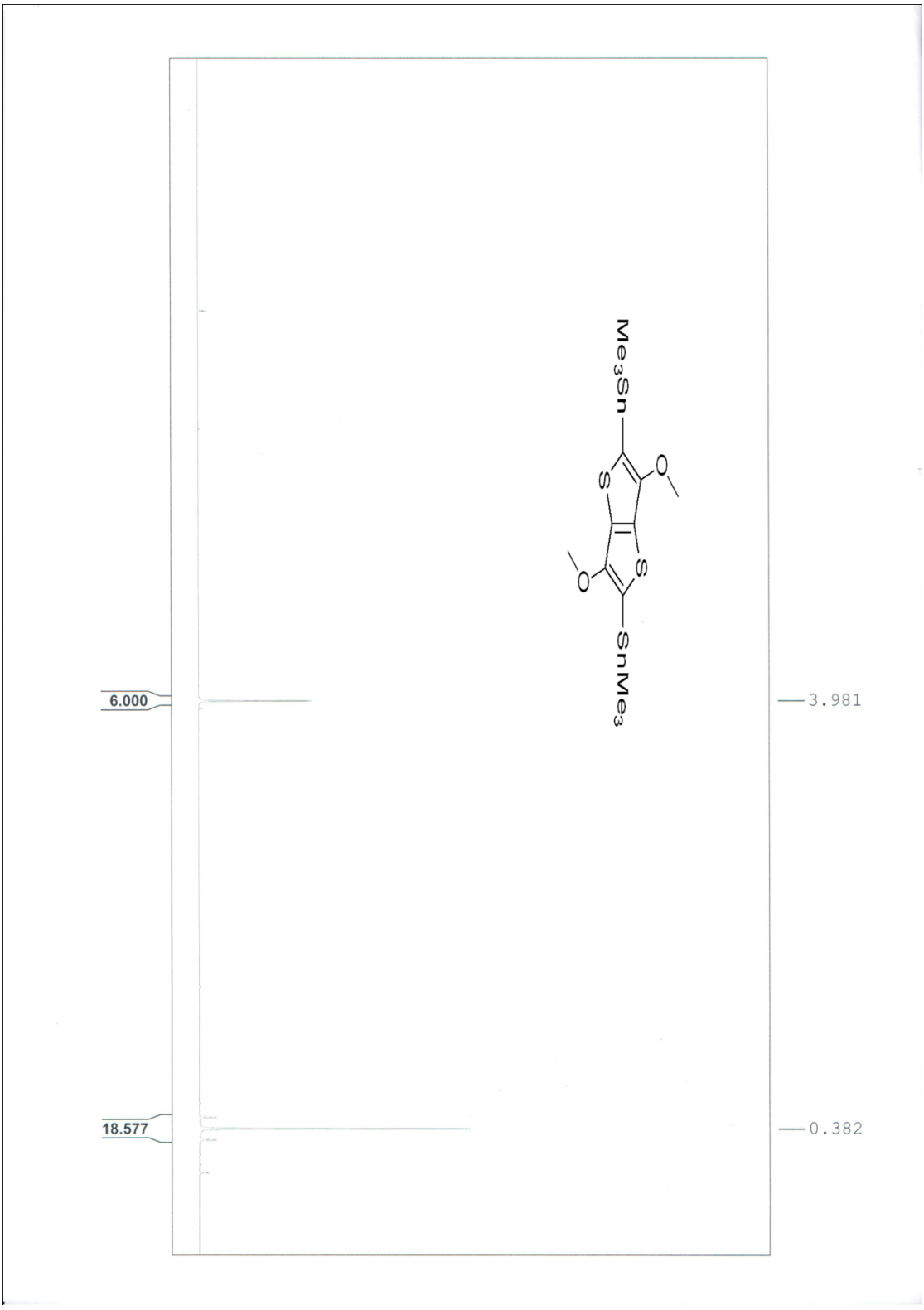


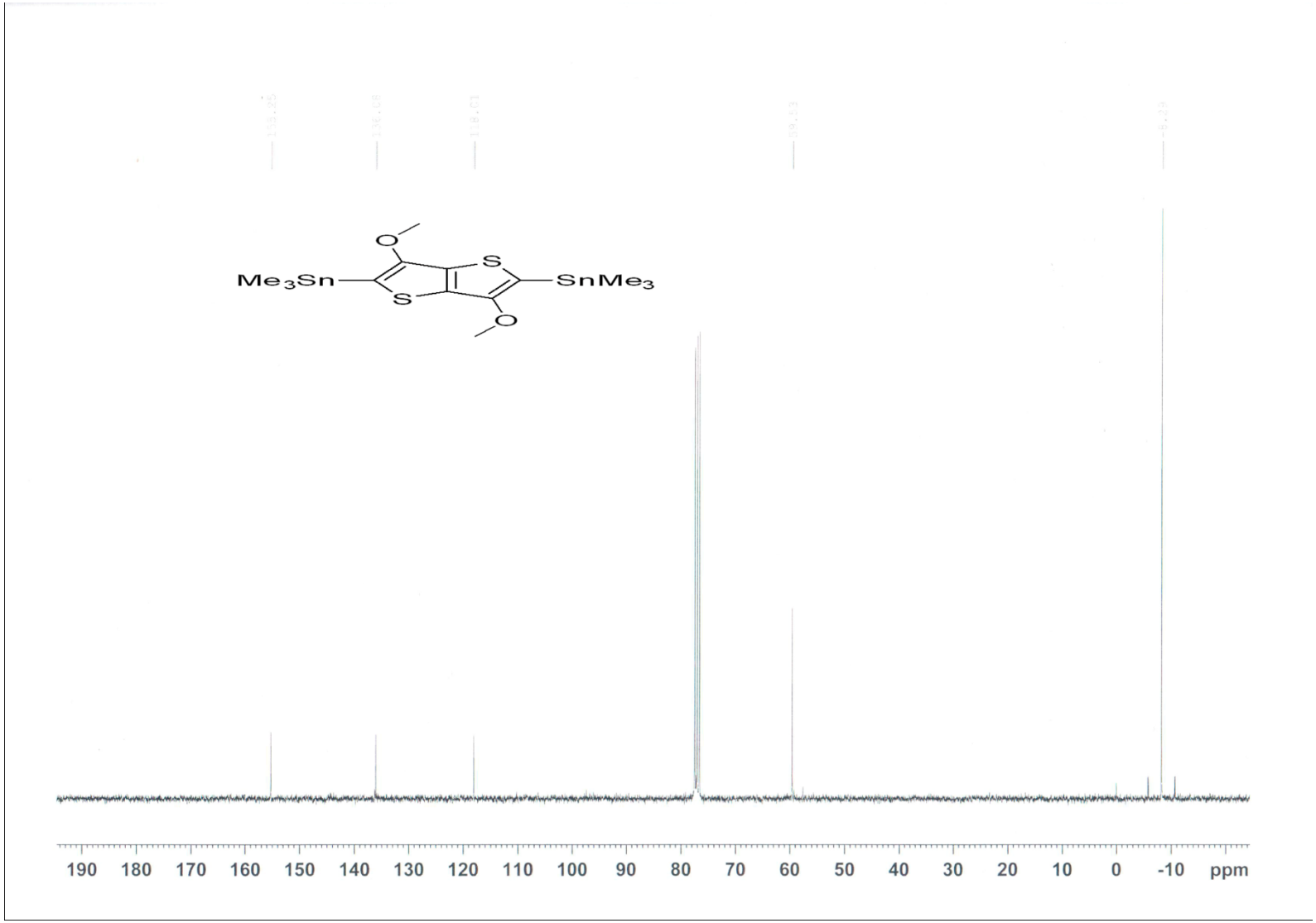
Fig. S4 GIXRD patterns of the **PDMOTT-*n*** thin films after annealing at 180 °C. (a) Out-of-plane X-ray diffraction pattern. (b) In-plane X-ray diffraction pattern.

S5. ^{1}H and ^{13}C NMR spectra of intermediates **2** and **3**.



170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
ppm
153.86
128.43
97.33
57.53
S
O
S
O


Me3Sn
O
S
S
O
S
SnMe3
6.000
3.981
18.577
0.382


Me3Sn
SnMe3
O
O
S
S
190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 -10 ppm