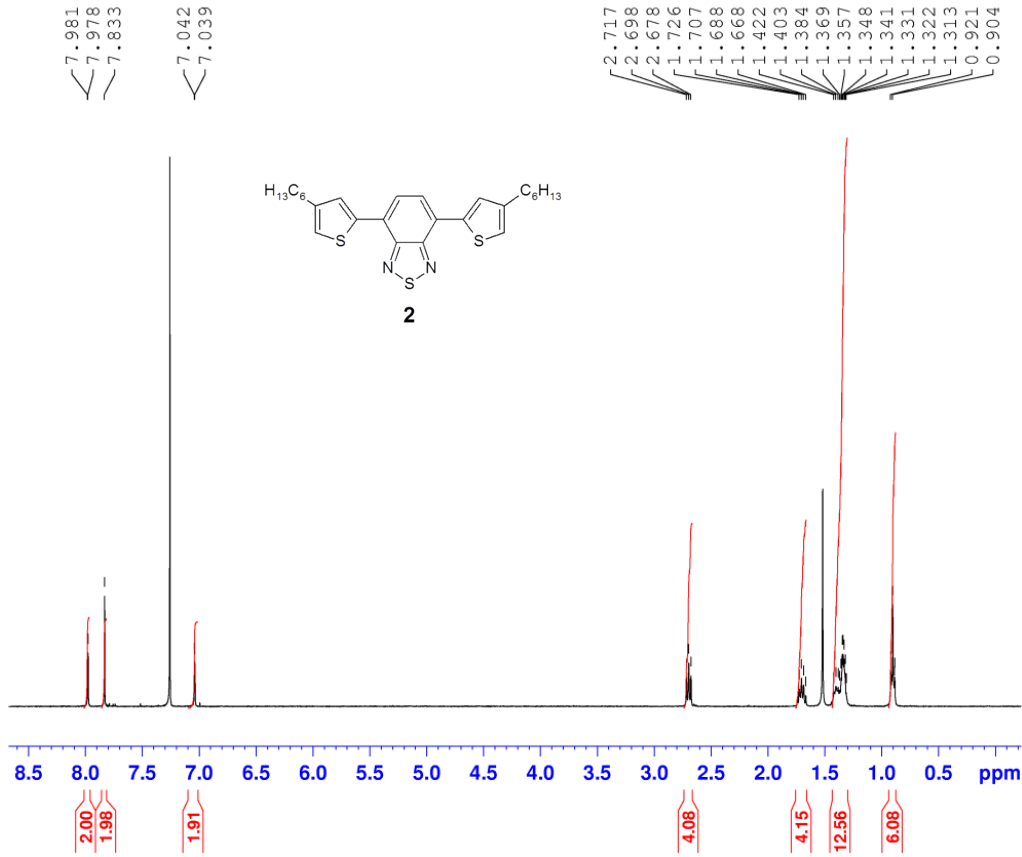


**The role of structural and electronic factors in shaping the ambipolar
properties of donor-acceptor polymers of thiophene and
benzothiadiazole**

Przemyslaw Ledwon, Neil Thomson, Enrico Angioni, Neil J. Findlay, Peter J. Skabara, Wojciech Domagala

Supporting information

a)

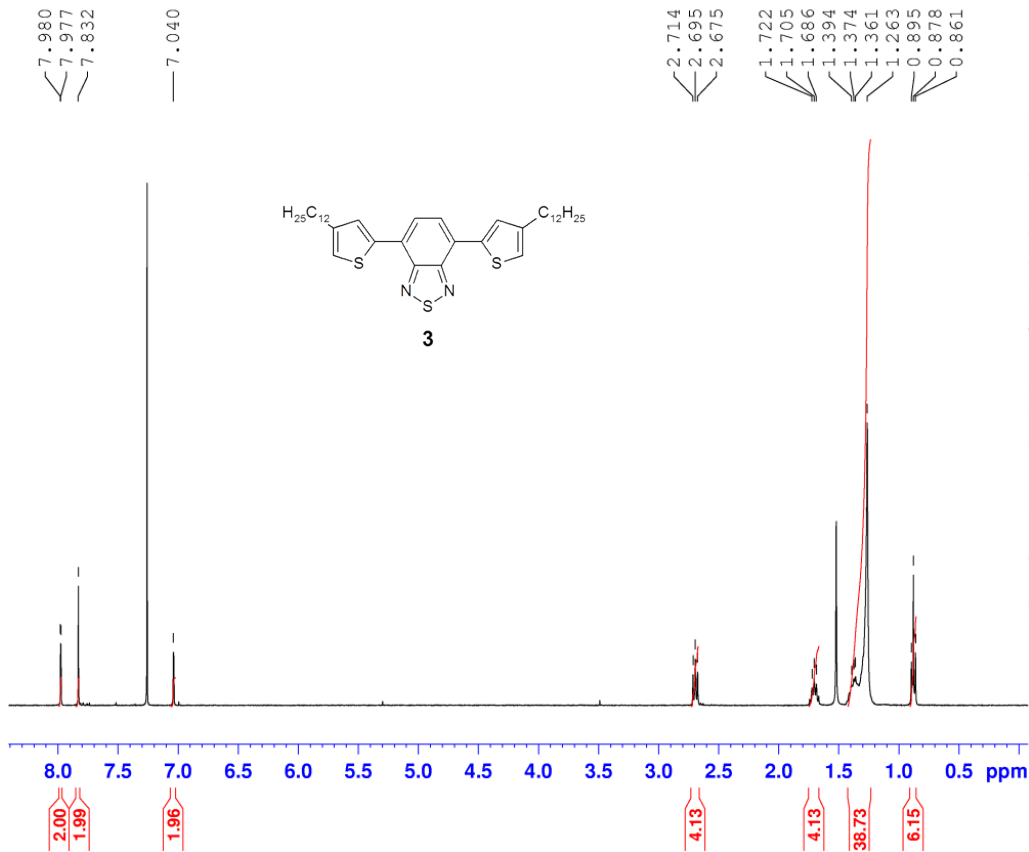


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NAME      NT027_D196045
EXPNO     1
PROCNO    1
Date_     20140214
Time      11.01
INSTRUM   spect
PROBHD    5 mm QNP 1H/13
PULPROG   zg30
TD         32564
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 Hz
FIDRES     0.252539 Hz
AQ         1.9799412 sec
RG         645
DW         60.800 usec
DE         6.50 usec
TE         300.0 K
D1         2.00000000 sec
TD0        1

===== CHANNEL f1 =====
NUC1      1H
P1        9.40 usec
PL1       -4.00 dB
PL1W      19.93825150 W
SF01      400.1324710 MHz
SI         32768
SF         400.1300098 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
  
```

b)

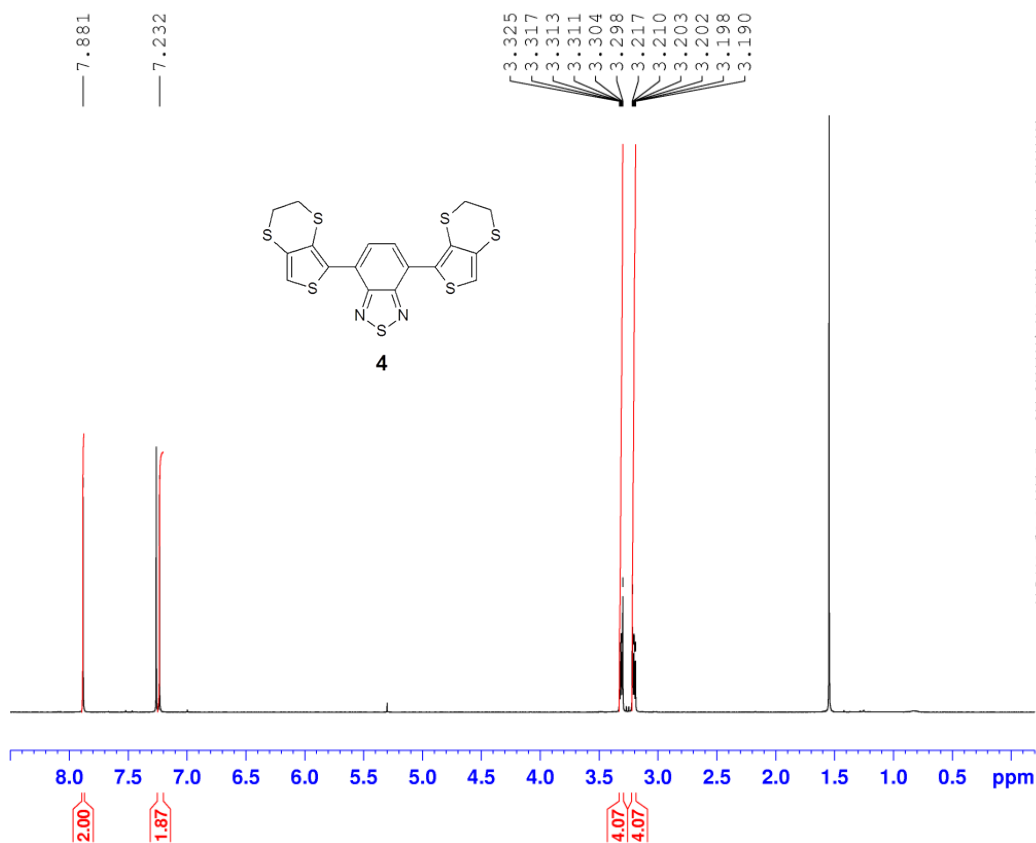


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EXPNO     1
PROCNO    1
Date_     20140220
Time      11.56
INSTRUM   spect
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PULPROG   zg30
TD         32564
SOLVENT   CDCl3
NS         16
DS         2
SWH        8223.685 Hz
FIDRES     0.252539 Hz
AQ         1.9799412 sec
RG         406
DW         60.800 usec
DE         6.50 usec
TE         300.0 K
D1         2.00000000 sec
TD0        1

===== CHANNEL f1 =====
NUC1      1H
P1        9.40 usec
PL1       -4.00 dB
PL1W      19.93825150 W
SF01      400.1324710 MHz
SI         32768
SF         400.1300098 MHz
WDW        EM
SSB        0
LB         0.30 Hz
GB         0
PC         1.00
  
```

c)



```

NAME          D234777
EXPNO         1
PROCNO        1
Date_         20150811
Time          16.13
INSTRUM       spect
PROBHD        5 mm CPPBBO BB
PULPROG       zg30
TD            32564
SOLVENT       CDC13
NS            4
DS            2
SWH           8223.685 Hz
FIDRES        0.252539 Hz
AQ            1.9799412 sec
RG            181
DE            60.800 usec
TE            300.0 K
D1            2.00000000 sec
TD0           1

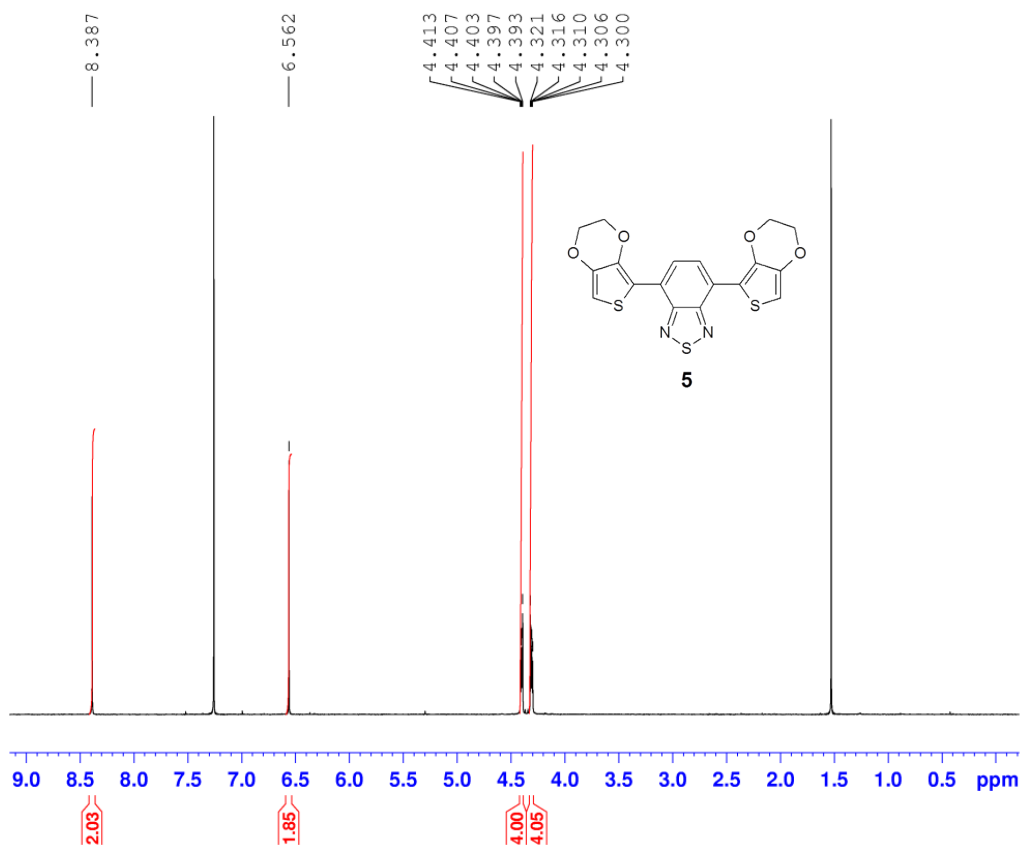
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===== CHANNEL f1 =====
SFO1          400.1324710 MHz
NUC1          1H
P1            12.00 usec
SI            32768
SF            400.1300098 MHz
WDW           EM
SSB           0
LB            0.30 Hz
GB            0
PC            1.00

```

d)



```

NAME          EA035__D195618
EXPNO         1
PROCNO        1
Date_         20140210
Time          9.22
INSTRUM       spect
PROBHD        5 mm QNP 1H/13
PULPROG       zg30
TD            32564
SOLVENT       CDC13
NS            32
DS            2
SWH           8223.685 Hz
FIDRES        0.252539 Hz
AQ            1.9799412 sec
RG            724
DE            60.800 usec
TE            300.0 K
D1            2.00000000 sec
TD0           1

```

```

===== CHANNEL f1 =====
NUC1          1H
P1            9.40 usec
PL1          -4.00 dB
PL1W         19.93825150 W
SFO1          400.1324710 MHz
SI            32768
SF            400.1300098 MHz
WDW           EM
SSB           0
LB            0.30 Hz
GB            0
PC            1.00

```

Figure S1 ¹H NMR spectra of compounds: a) 2, b) 3, d) 4, e) 5, synthesised in this work.

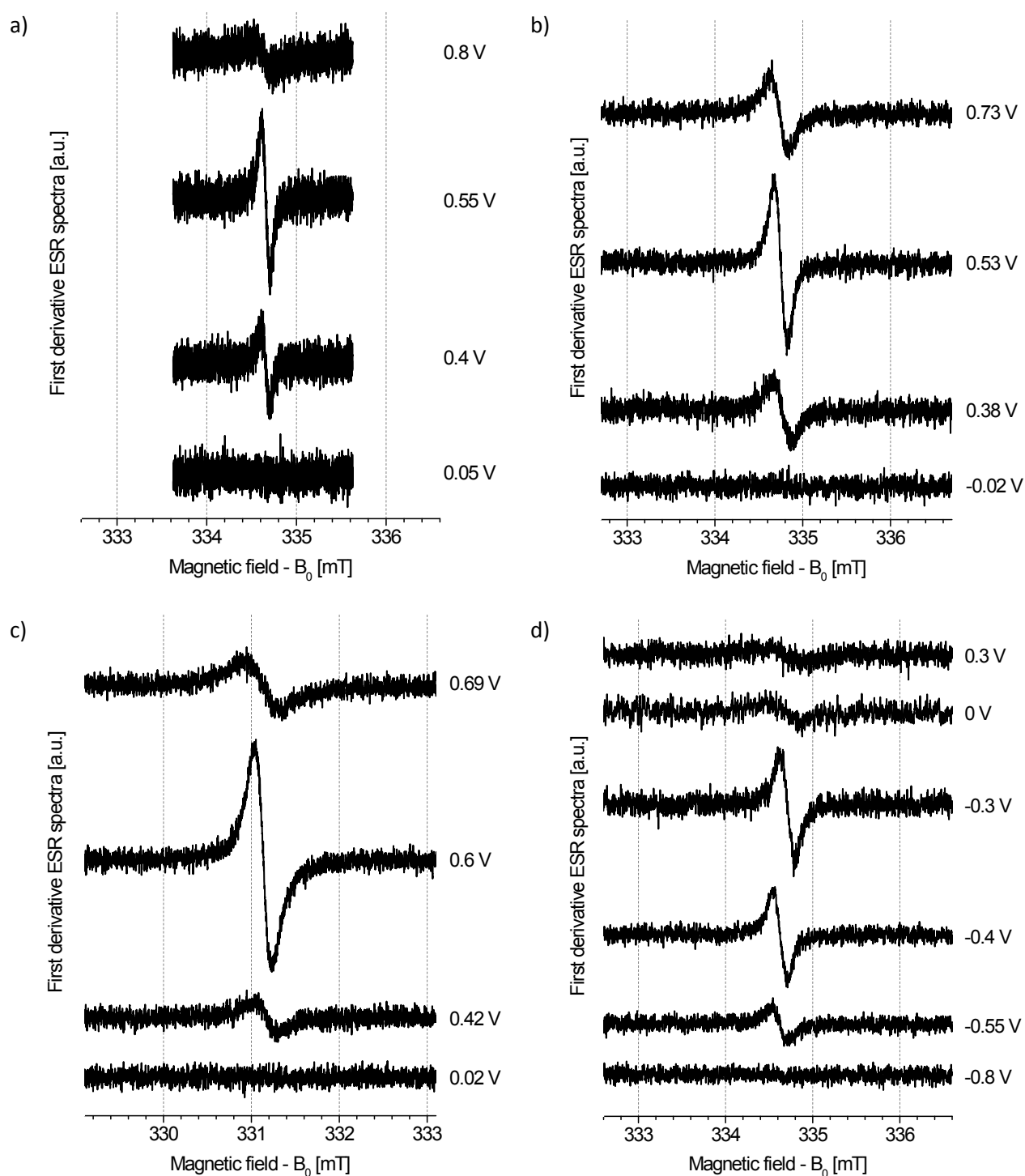


Figure S2 Selected EPR spectra of electrodeposited films of: a) **p1**, b) **p3**, c) **p4**, d) **p5** at ITO electrode in 0.1M Bu_4NPF_6 in acetonitrile, recorded in situ at progressively incremented potentials during their p-doping.

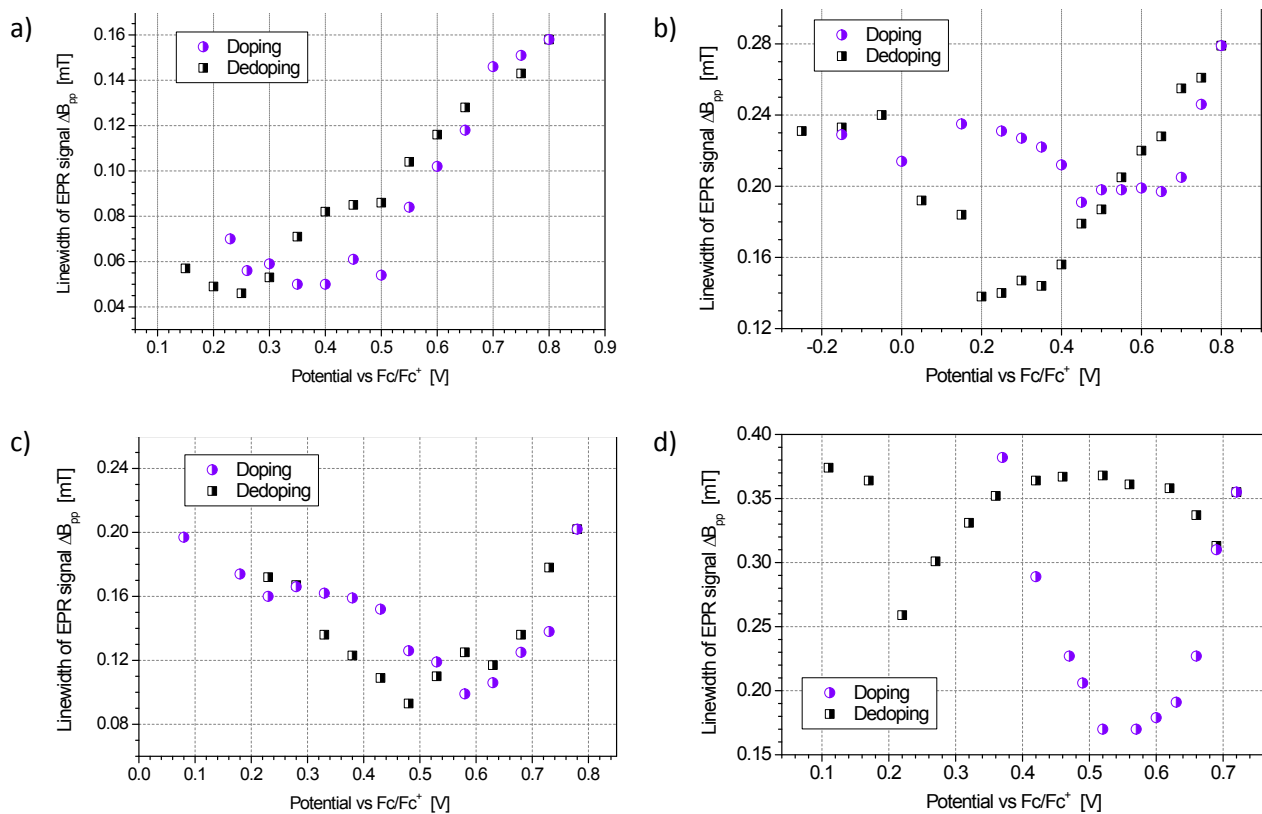


Figure S3 Linewidth (ΔB_{pp}) of EPR signal of: a) **p1**, b) **p2**, c) **p3**, d) **p4**, as a function of applied potential during their electrochemical p-doping and subsequent dedoping in 0.1M $\text{Bu}_4\text{NPF}_6 / \text{ACN}$.