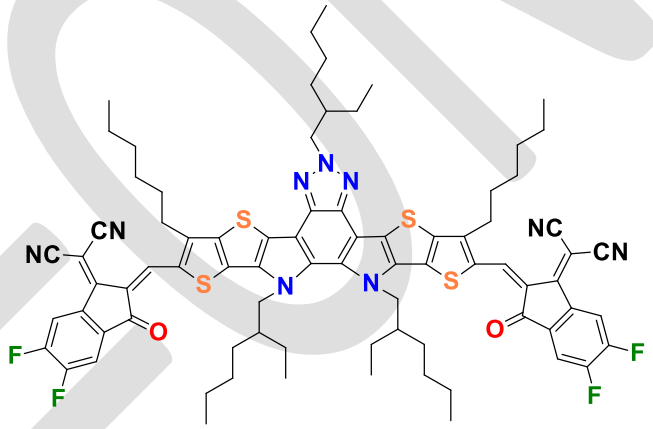
1-Material Inc
2290 Chemin St-Francois
Dorval, Quebec
H49P 1K2, Canada

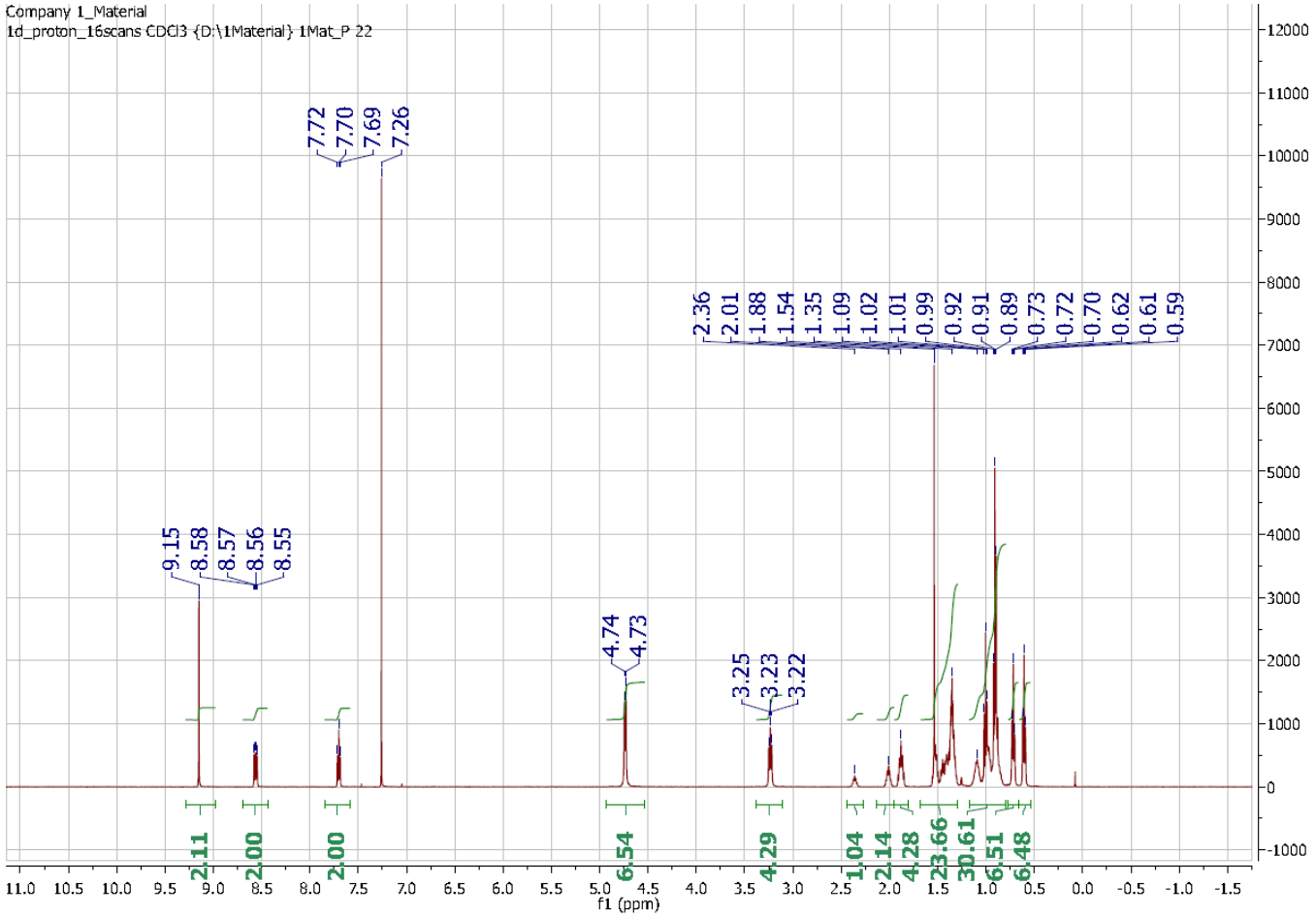
Technical Data Sheet

1M Material:	Y18
Application:	Electron acceptor for OPV
CAS No.:	2477654-49-0
Chemical Name:	2,2'-((2Z,2'Z)-((6,12,13-tris(2-ethylhexyl)-3,9-dihexyl-12,13-dihydro-6Hthieno[2",3":4',5']thieno[2',3':4,5]pyrrolo[3,2-g]thieno[2',3':4,5]thieno[3,2-b][1,2,3]triazolo[4,5-e]indole-2,10-diyl)bis(methanylylidene))bis(5,6-difluoro-3-oxo-2,3-dihydro-1H-indene-2,1-diylidene))dimalononitrile
Chemical Structure:	



Grade/Brand:	ONE
Appearance:	Shine purple-black solid
NMR:	Confirmed (see appendix for NMR spectrum)
Assay:	99+%
Solubility:	soluble in chloroform and other selected solvents
Reference:	Journal of Materials Chemistry A: (2020), 8(17), 8566

Typical NMR


Company 1_Material
1d_proton_16scans CDCl3 {D:\1Material} 1Mat_P 22
7.72
7.70
7.69
7.26
9.15
8.58
8.57
8.56
8.55
4.74
4.73
3.25
3.23
3.22
2.36
2.01
1.88
1.54
1.35
1.09
1.02
1.01
0.99
0.92
0.91
0.89
0.73
0.72
0.70
0.62
0.61
0.59
2.11
2.00
2.00
6.54
4.29
1.04
2.14
4.28
23.66
30.61
6.51
6.48
f1 (ppm)

Reference Data Selection:

(1) Energy & Environmental Science (2020), 13(8), 2459-2466

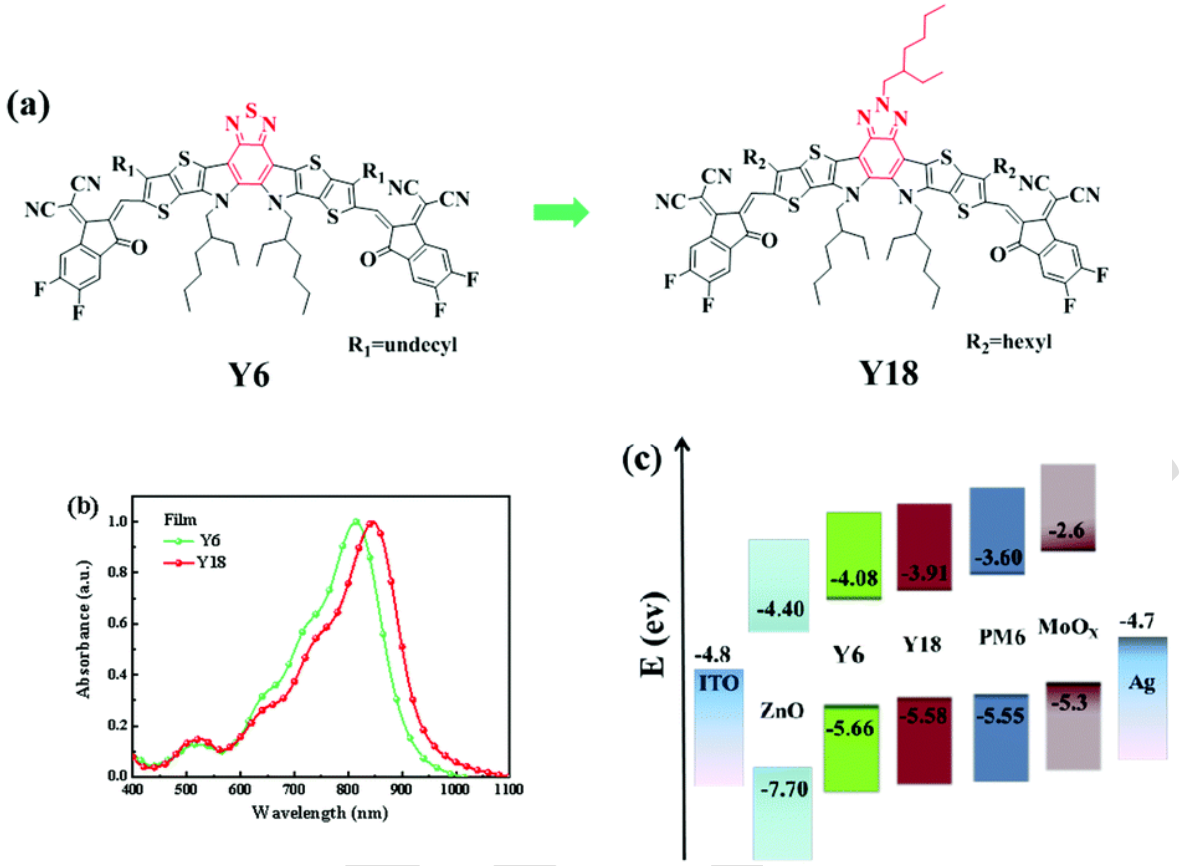
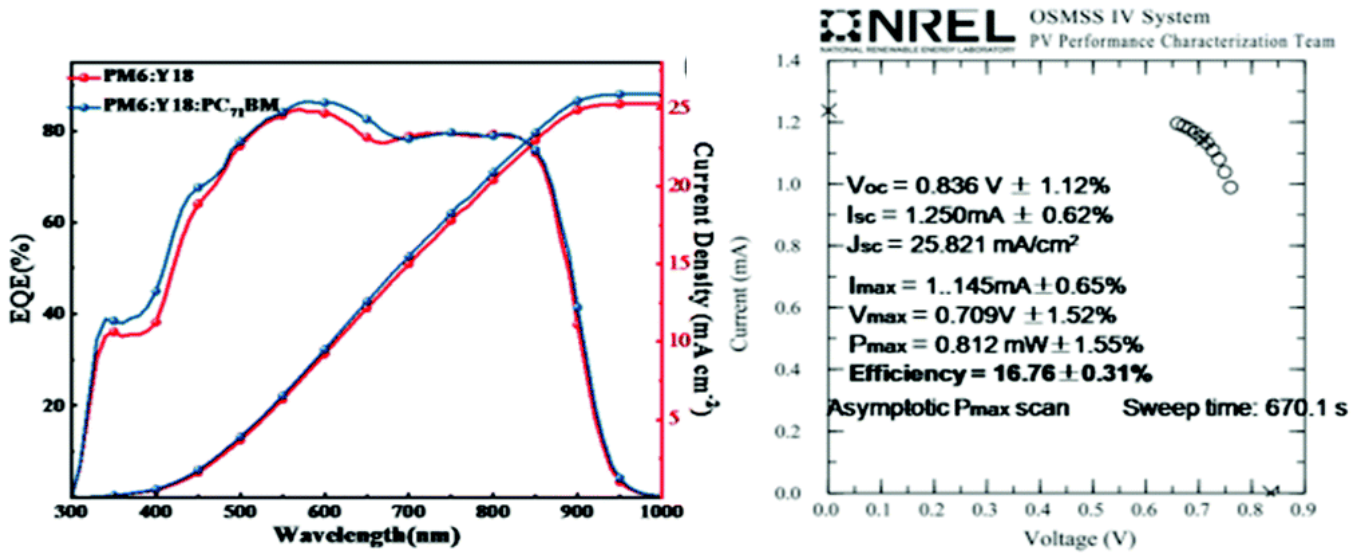


Figure (a) Chemical structures of the acceptor molecules Y6 and Y18. (b) Normalized absorption spectra of the Y6 and Y18 film states. (c) Energy level diagrams of the materials in the device



(2) Science China: Chemistry (2020), 63(8), 1159-1168

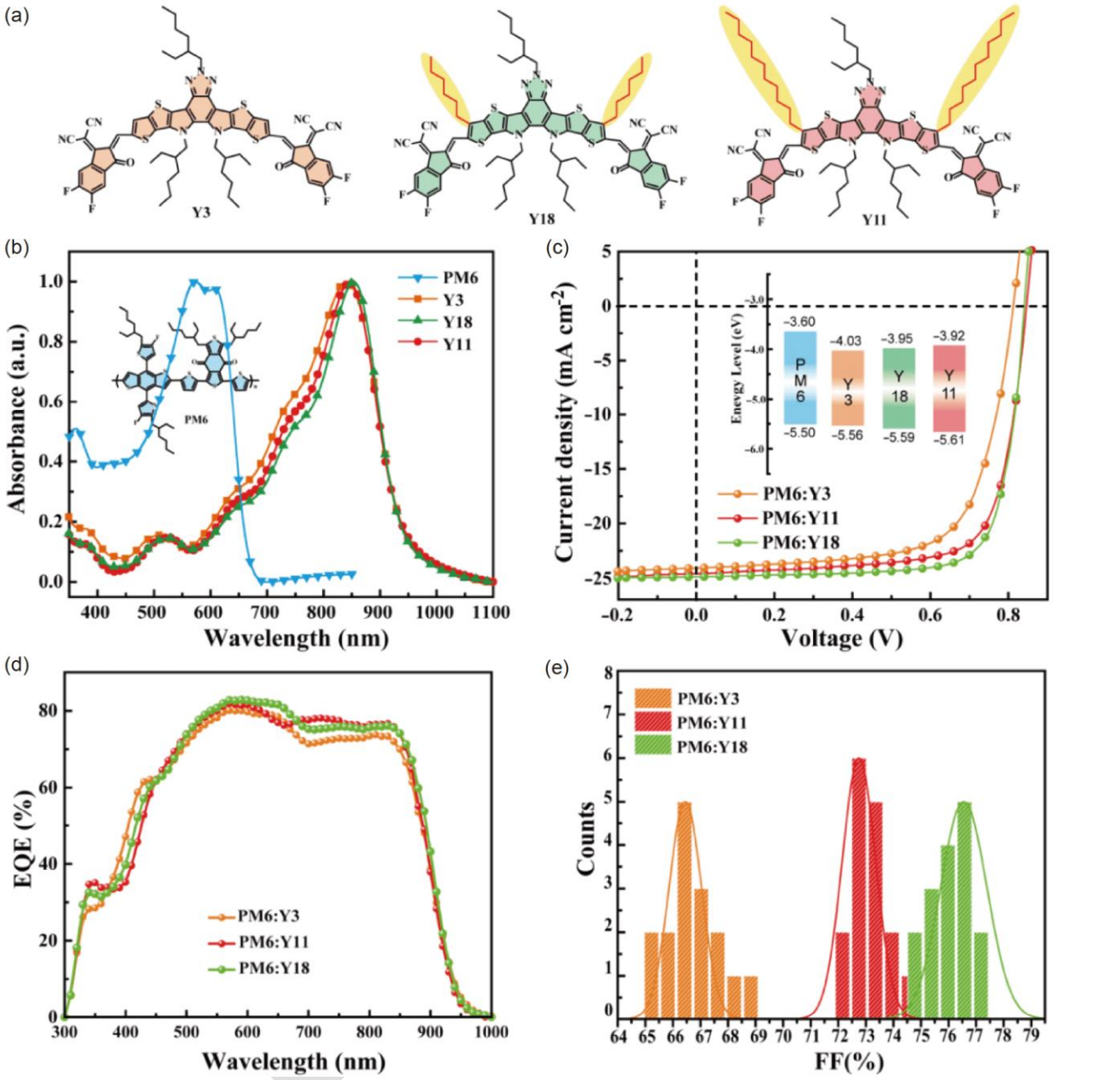


Figure: Properties and photovoltaic performance. (a) Chemical structures of acceptor molecules. (b) Normalized thin-film absorption of donor and acceptor molecules. Inset: the chemical structure of donor material. (c) *J-V* curves of BHJ solar cells with various acceptors. Inset: energy diagram for donor and acceptor molecules used in this study (Figure S7). (d) The EQE curves of BHJ solar cells with various acceptors. (e) Histogram of the PCE measurements for 15 devices based on BHJ solar cells with various acceptors (color online).

(3) Journal of Materials Chemistry A: (2020), 8(17), 8566