(Voc ≥1.1V Polymer Solar Cell)

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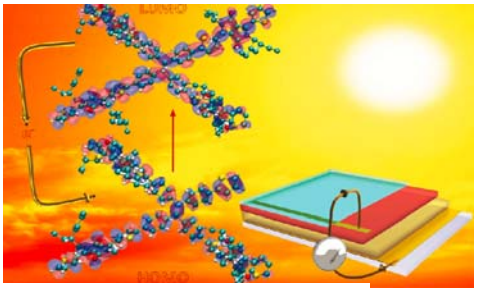
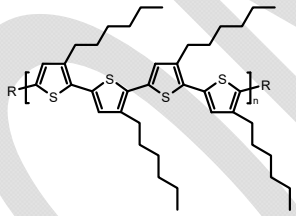
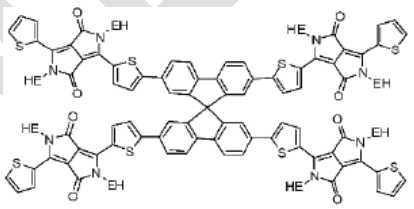
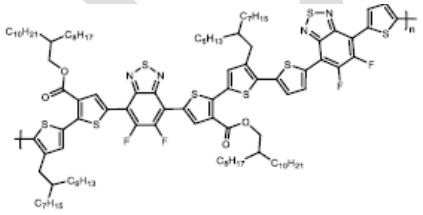
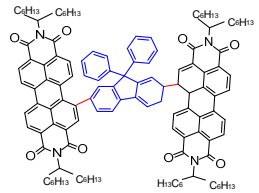
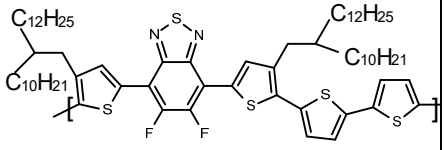
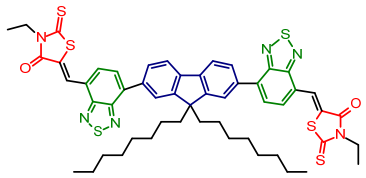
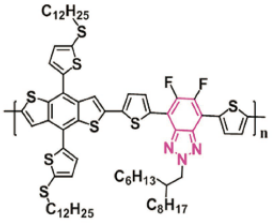
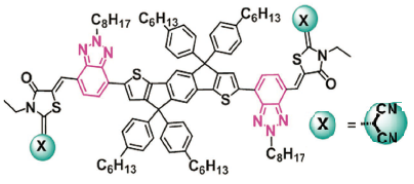


Chem. Commun., 2016, 52, 8522--852

V_{OC} is correlated with the energy difference between the highest occupied molecular orbital (HOMO) of donors and the lowest unoccupied molecular orbital (LUMO) of acceptors. Because of their tunable energy levels in addition to strong absorption in visible region compared to the fullerene derivatives, non-fullerene organic acceptors (NFAs) are of potentials to break the limit of V_{OC} encountered in polymer-fullerene solar cells. Reviewing recent developments in non-fullerene polymeric solar cells, we select these systems below with **Voc ≥ 1.1V** and **PCE ≥ 3.5%** for your **suggestions** and **validations**.

Voc (V)	*Typical Performance Reference*	*Polymeric Donor Structure and 1M Order Code*	*Non-fullerene Acceptor Structure and 1M Order Code*
1.10	**P3HT:SF-DPPEH;** PCE(%)=3.63 J_{SC}(mAcm^{-2}) = 5.96 FF(%) =47.5 SF-DPPEH: LUMO(eV)=-3.60 HOMO(eV)=-5.26 *Adv. Funct. Mater.* **2015**, *25*, 5954	**P3HT**: CAS#1807643-85-1  1M# PH0148	**SF-DPPEH**: CAS#1807643-85-1  1M# OS0851/NFA110
1.11	**P3TEA:SF-PDI2** PCE(%)=9.5 J_{SC}(mAcm^{-2}) = 13.27 FF(%) =64.3 *Nat. Energy* **2016**, *1*, 16089	**P3TEA**: CAS#2011757-25-6  1M# OS0256	**SF-PDI2**: CAS#1643842-69-6  1M# OS0696/NFA002/SF-PDI
1.12	**PffBT4T-2DT:FBR** PCE(%)=7.8 J_{SC}(mAcm^{-2}) =11.5 FF(%) =61 *Energy Environ. Sci.*, 2016, 9, 3783	**PffBT4T-2DT**: CAS#1430201-60-7  1M# OS0607/R2R001/FBT-Th4	**FBR**: CAS#1644381-95-2  1M# OS0952/NFA03
1.15	**J61:BTA3** PCE(%)=8.25 J_{SC}(mAcm^{-2}) = 10.84 FF(%) =66.2 BTA3: LUMO(eV)=-3.15 HOMO(eV)=-5.26 *Adv. Funct. Mater.* **2017**,1704507	**J61**: CAS#1887136-03-9  1M# OS0039	**BTA3**  1M# NFA115

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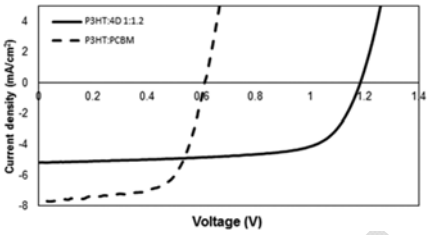
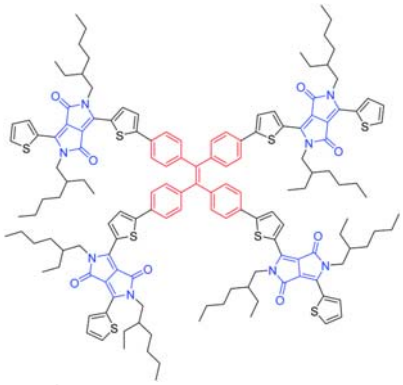
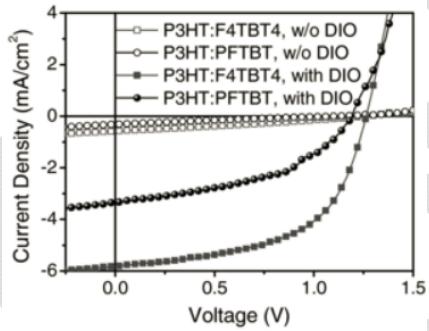
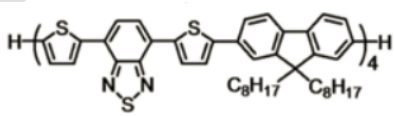
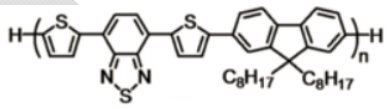
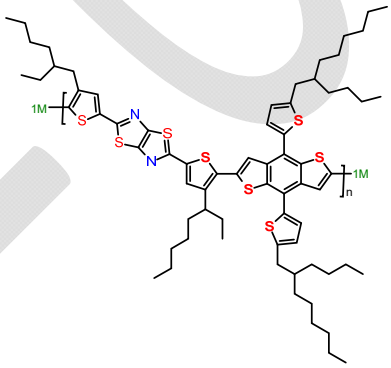
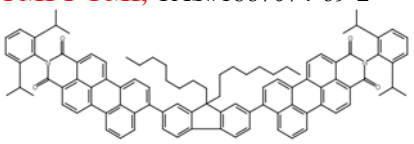
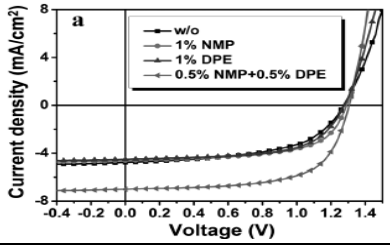
1.18	**P3HT:4D** PCE(%)=3.86 J_{SC}(mAcm^{-2}) = 5.17 FF(%) =64 4D: LUMO(eV)=-3.81 HOMO(eV)=-5.51 *Chem. Commun., 2016, **52**, 8522*	**P3HT:** CAS#1807643-85-1  1M# PH0148	**4D:** CAS# 2033110-69-7  1M# NFA118/OS0697
1.26	**P3HT:F4BT4** PCE(%)=3.86 J_{SC}(mAcm^{-2}) = 5.83 FF(%) =56.1 F4BT4: LUMO(eV)=-3.3 HOMO(eV)=-5.2 *Adv. Funct. Mater. 2016, 26, 5922*	**P3HT:** CAS#1807643-85-1  1M# PH0148	**F4BT4**  1M# NFA126  OS0776 / PFTBT, APO3, PFO-DBT
1.30	**PTZ1:PMI-F-PMI** PCE(%)=6.0 J_{SC}(mAcm^{-2}) = 7.0 FF(%) =63.5 PMI-F-PMI: LUMO(eV)=-3.40 HOMO(eV)=-5.50 *Adv. Funct. Mater.* **2017**, *27*, 1603892	**PTZ1, CAS**#2029196-34-5  1M# OS0345	**PMI-F-PMI,** CAS#1887074-69-2  **1M# NFA130** 
1.3x	ONE =**I**	**Yours to discovery**	**To be updated**

For more information, please contact info@1-material.com