(SM-NFA: Small Molecule Non-Fullerene Acceptor)

1-MATERIAL
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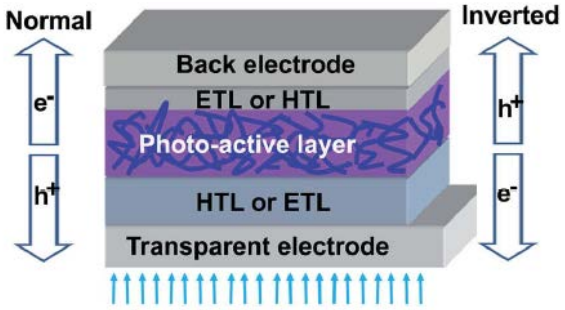
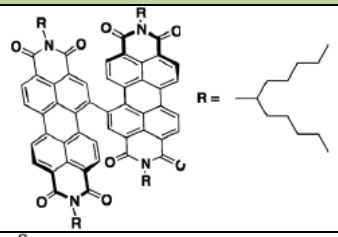
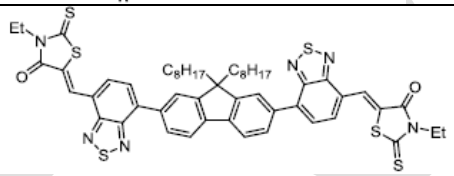
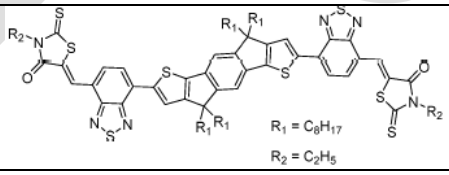
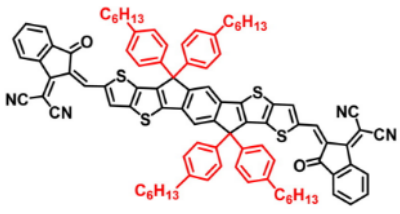
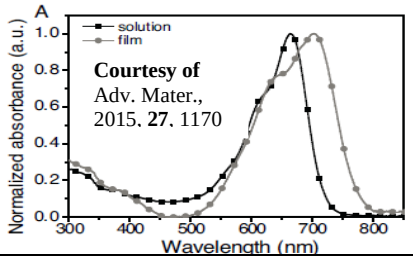
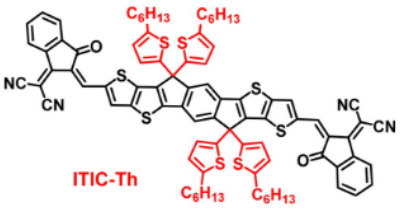
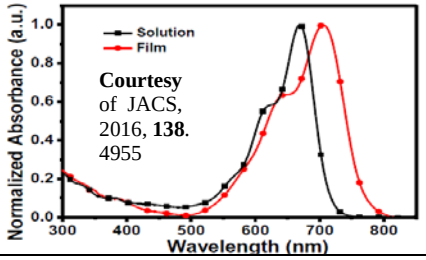


PCE ~11% has been reported for a Small Molecule Non-Fullerene Acceptor (SMNFA) to overcome high cost and poor stability of fullerene-based organic photovoltaics(OPV). Considering (1) efficient charge transfer, (2) good morphology (3) easy synthesis and purification, (4) proper solubility for green solvents, and (5) right optical adsorptivity, the following SMNFAs are selected from open publications for your **suggestions** and **validations** only.

*Courtesy of general references: (1) Acc.Chem. Res., **2015**, 48;2803 (2)RSC, Adv, 2015 93002 and (3) J.Mater.Chem, A, 2015, 3, 16393 , (4) Adv. Mater. 2015 27 1170: (5) JACS. 2016. 128. 4955.*

Listing No.	*Common Name CAS No.*	*Structure*	*Reference and Remarks*
NFA001 OS0783	**di-PDI** CAS#1609131-78-3		*Chem. Communications,**2014**, 50(8), 1024* EA(eV) = 4.04, IP(eV)=6.13 HOMO(eV) = -6.1; LUMO(eV)=-4.0 Active layer: PCE-10/di-PDI PCE = 5.9% V_{OC}(V)=0.80; J_{SC}(mA/cm^2)=12.0; FF = 0.59
NFA003 OS0952	**FBR** CAS#1644381-95-2		*JACS., **2014**, 137, 898* EA(eV) = 3.57, IP(eV)=5.70 HOMO(eV) = -5.7; LUMO(eV)=-3.6 Active layer: P3HT/FBR PCE = 4.11% V_{OC}(V)=0.82; J_{SC}(mA/cm^2)=7.95; FF = 0.63
NFA004	**IDTBR**		*Acc.Chem. Res., **2015**, 48, 2803* EA(eV) = 3.88, IP(eV)=5.45 Active layer: P3HT/IDRBR PCE = 6.38% V_{OC}(V)=0.73; J_{SC}(mA/cm^2)=14.1; FF = 0.62
NFA005 OS0064	**ITIC** CAS#1664293-06-4		
NFA006 OS0131	**ITIC-Th** CAS#1889344-13-1		

Other non-fullerene acceptors may also be interested, please contact info@1-material.com for more information.