-MATERIAL
Organic Nano Electronic

1-Material Inc
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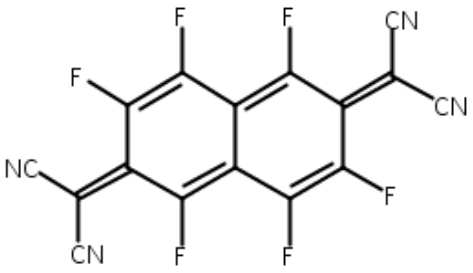
CERTIFICATE OF ANALYSIS

Product:	F6-TCNNQ, F6-TNAP
Common Name:	1,3,4,5,7,8-hexafluorotetracyanonaphthoquinodimethane
Chemical Name:	Propanedinitrile, 2,2'-(1,3,4,5,7,8-hexafluoro-2,6-naphthalenediylidene)bis-
Other Names:	2,2'-(1,3,4,5,7,8-Hexafluoro-2,6-aphthalenediylidene)bis[propanedinitrile]; 2,2'-(Perfluoronaphthalene-2,6-diylidene)dimalononitrile; 2-(6-Dicyanomethylene-1,3,4,5,7,8-hexafluoro-6*H*-naphthalen-2-ylidene)malononitrile; F6-TCNNQ; F6TNAP
CAS#	912482-15-6
Chemical Structure	 
Lot:	HW4127P
Appearance:	Reddish brown to purple powder
NMR:	Confirmed
Assay:	>98% (by NMR)
Solubility:	Soluble in common organic solvents including acetone, toluene.
Storage:	Cool/dry place

Reference

MENU nature materials

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ORGANIC SEMICONDUCTORS

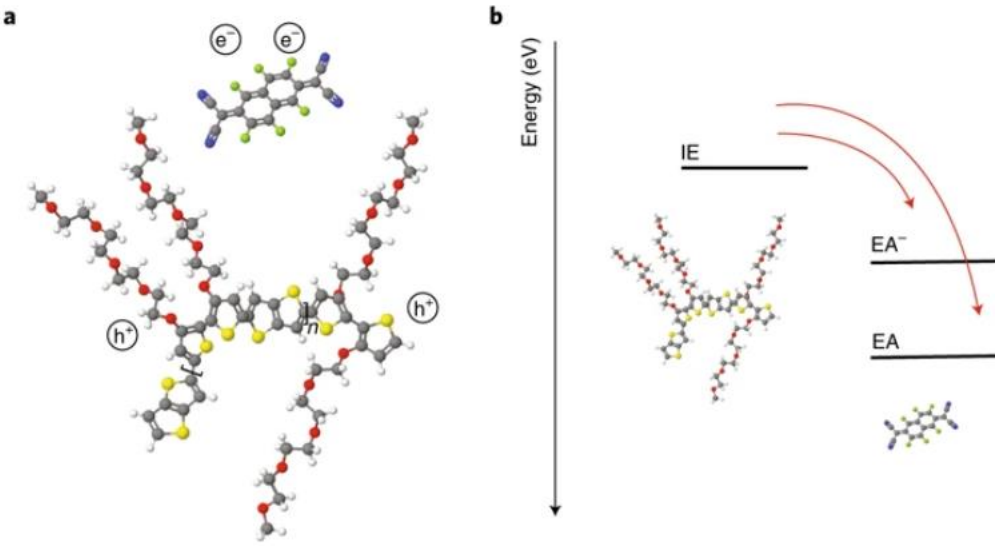
Beyond 100% doping efficiency

Björn Lüssem

Nature Materials **18**, 93–94 (2019) | Download Citation

A single dopant molecule can exchange more than one charge with the hosting polymer semiconductor, doubling the maximum doping efficiency achievable.

Double p-doping.



a, Dopants, represented by the F6TCNNQ molecule on top, are mixed into the organic semiconductor to accept electrons e^- and generate holes h^+ in the host material. As example, a segment of the polymer p($g_4$2T-TT) is shown here. **b**, Energy diagram of the dopant–host system. If the electron affinity EA of the dopant and the electron affinity EA^- of the already ionized dopant are larger than the ionization energy IE of the semiconducting host, two holes per dopant molecule can be generated. Grey, green, blue, red, yellow and white spheres in the sketch represent, respectively, C, F, N, O, S and H atoms.