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Organic photovoltaics

Innovation and high performance

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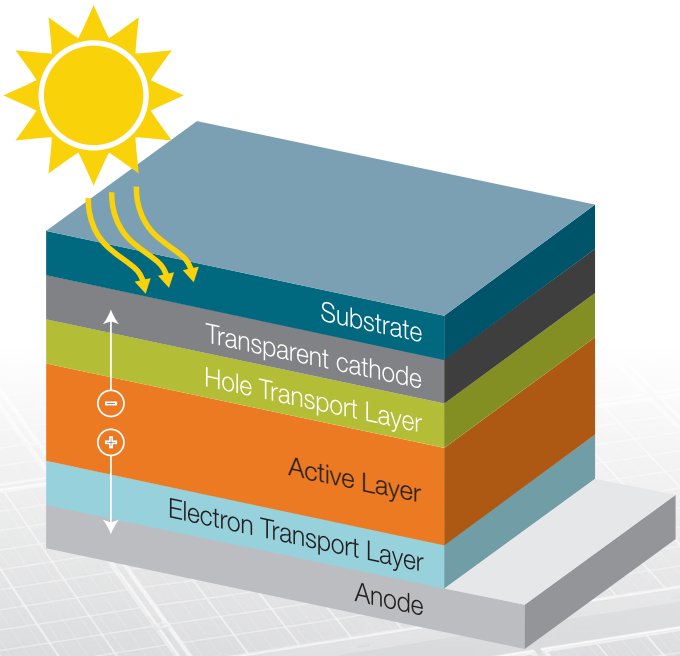
Innovation and high performance

Introduction

Organic photovoltaics (OPV) are solar cells based on organic semiconductors, which are thin, light, flexible and mechanically resistant. OPV research has progressed rapidly during the last decade, their performances rapidly closing the gap with conventional silicon technologies.

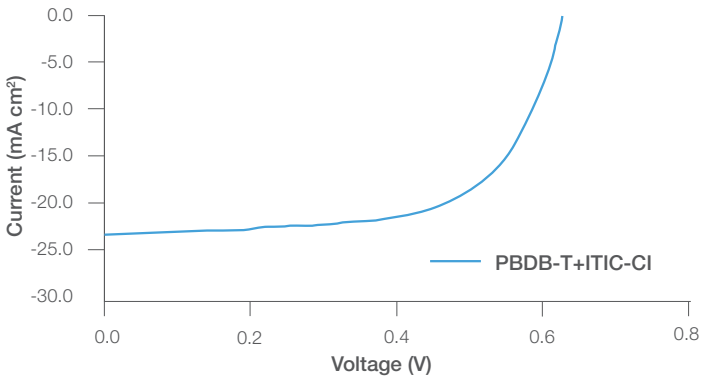
OPV's show potential as an affordable energy technology, that moreover are light, can have tandem structures, and can be fabricated on plastic substrates, with potential applications in consumer electronics.

In OPV architecture the active layer is a blend of two organic semi-conductors known as the donor (p-type material) and the acceptor (n-type material). Their properties can be fine-tuned for specific needs and many high-performance materials are now available.



Conventional OPV architecture

To achieve high-performance devices, the n-type and the p-type materials must have compatible optical and electronic properties. Semiconductors with complementary absorptions will help to convert more photons and energy and maximize the current produced. Fine-tuning the energy levels can increase the device voltage.



N-Type materials

Fullerene derivatives have traditionally performed very well as n-type materials. However, novel conjugated molecules have recently gained traction due to increased performances and stability. N-type polymers are also on the rise as an alternative. (Product shot from slide)

P-Type materials

Conjugated polymers are the most common materials in OPV. They are the source of many of the desirable properties of OPV devices:

- **Mechanically robust**
- **Chemical stability**
- **Printability**
- **High photon absorption**

We offer a range of both n- and p-type products
which are always extensively purified to deliver optimal results every time.

N-Type materials

Fisher Scientific Cat. No.	Description	CAS#	Sizes
AAH66574	ITIC	1664293-06-4	100 mg, 250 mg, 500 mg
AAH66664	ITIC-F	2097998-59-7	100 mg, 250 mg, 500 mg
AAH66521	ITIC-Cl	2253663-81-7	100 mg, 250 mg, 500 mg
AAH66830	IDT-2BR	2042521-91-3	100 mg, 250 mg, 500 mg
AAH66666	o-IDTBr	2077945-91-4	100 mg, 250 mg, 500 mg
AAH66142	EH-IDTBr	2055812-53-6	100 mg, 250 mg, 500 mg
AAH66656	IEICO	2055812-53-6	100 mg, 250 mg, 500 mg
AAH66546	IEICO-4F	2089044-02-8	100 mg, 250 mg, 500 mg
AAH66752	IEICO-4Cl	2240998-88-1	100 mg, 250 mg, 500 mg
AAH66460	Y5	2304444-48-0	100 mg, 250 mg, 500 mg
AAH66585	Y6	2304444-49-1	100 mg, 250 mg, 500 mg
AAH66035	ITIC-M	2047352-80-5	100 mg, 250 mg, 500 mg
AAH66315	BTP-4Cl		100 mg, 250 mg, 500 mg

P-Type materials

Fisher Scientific Cat. No.	Description	CAS#	Sizes
AAH66399	PPDT2FBT (PCE9.3)	1620673-07-5	100 mg, 250 mg, 500 mg
AAH66975	PTB7-Th (PCE10)	1469791-66-9	100 mg, 250 mg, 500 mg
AAH66014	PffBT4T-2DT	1430201-60-7	100 mg, 250 mg, 500 mg
AAH66126	PffBT4T-2OD (PCE11)	1644164-62-4	100 mg, 250 mg, 500 mg
AAH66526	PBDB-T (PCE12)	1415929-80-4	100 mg, 250 mg, 500 mg
AAH66713	PDCBT	1609536-17-5	100 mg, 250 mg, 500 mg
AAH66867	PBDB-T-2Cl	2239295-71-5	100 mg, 250 mg, 500 mg
AAH66179	PBDB-T-2F (PCE14)	1802013-83-7	100 mg, 250 mg, 500 mg
AAH66106	PTQ10	2270233-86-6	100 mg, 250 mg, 500 mg
AAH66319	PDPPTT	1260685-66-2	100 mg, 250 mg, 500 mg
AAH66726	P3HT (OPV grade - 91-94% RR)	1609536-17-5	500 mg, 1 g

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