

新型有機太陽能電池材料之設計及合成 Design and Synthesis of New Organic Photovoltaic (OPV) Materials



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公司說明 Company Description

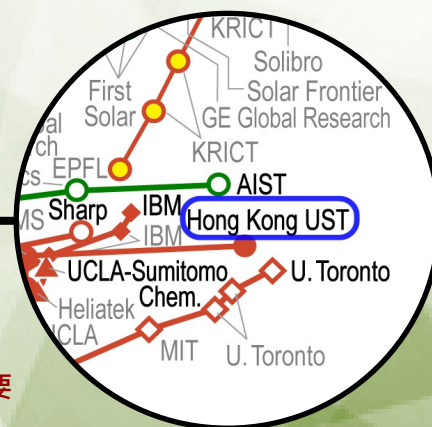
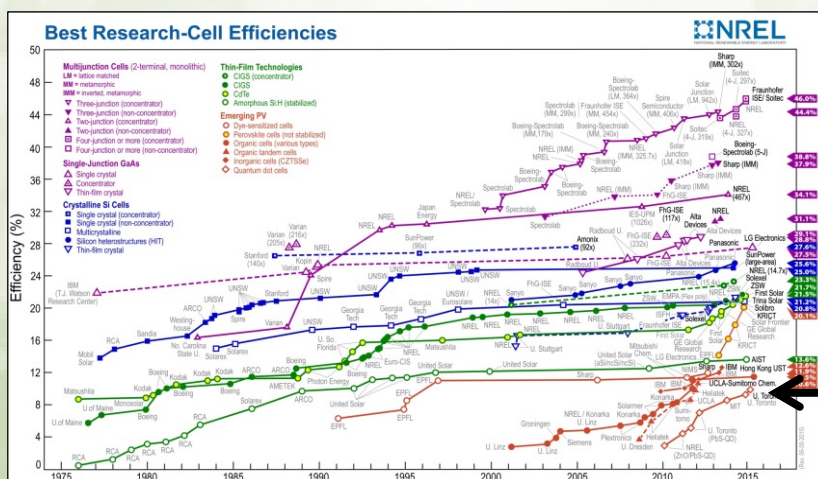
「香港易柔光伏科技有限公司」是一家位於香港的高科技能源企業，公司技術基於香港科技大學在有機光伏領域的重大突破，打破有機光伏能量轉換效率的世界記錄，並載入著名的 NREL 太陽能電池世界記錄表。公司致力於新型有機光伏的技術研發，產業化及市場銷售，持續提升有機光伏科技之性能，致力成為全球領先的有機薄膜發電太陽能裝備與光伏應用解決方案供應商。

“eFlexPV” is an advanced energy technology enterprise based in Hong Kong. Their technology is based on a major breakthrough in organic photovoltaic (OPV) energy conversion world record, which was officially certified in the renowned NREL solar cell record. The company aspires to develop new type OPV technology, commercialization, sales and marketing, consistently elevating its performance, aiming at becoming the world-leading supplier of organic thin film PV devices and applications.



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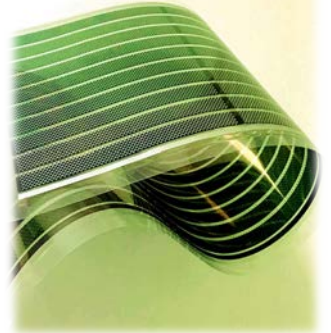
早於 2015年，團隊已把單結有機太陽能電池 效能提升至世界最高的 11.5%，並獲美國能源部國家再生能源實驗室 (NREL) 正式確認為主要科技突破，並刊登於國際知名的「最佳效能研究電池圖表」上。

Earlier in 2015, the team achieved single-junction organic solar cells with a record efficiency of 11.5%, which has been officially certified. This achievement is noted as a major technological breakthrough in the renowned National Renewable Energy Laboratory (NREL) (US Dept of Energy) chart of “best research-cell efficiencies”.

Reference: https://energy.gov/sites/prod/files/2016/04/f30/efficiency_chart_0.jpg

產品特色 Product Advantages

- ❑ 色彩美觀（可曲面安裝） Attractive appearance (Bendable)
- ❑ 顏色可訂制（綠/藍/灰） Customized colors (Green/blue/gray)
- ❑ 半透明（透明度可調節）
Semi-transparent (Adjustable degree of transparency)
- ❑ 輕薄（重量為晶硅光伏1/50）
Light weight (1/50 of regular silicon type)
- ❑ 柔性（可捲曲，可彎折） Flexible (Bendable, rollable)
- ❑ 安全（塑料薄膜） Safe (plastic thin film)
- ❑ 穩定可靠（壽命 15年以上）
Reliable and stable (lifetime more than 15 years)



團隊研發的有機太陽能電池
產品實物圖。
Organic PV product developed
by the team.

安裝例子 Installation Examples

發電遮陽棚

OPV in curved cover



示意圖
Schematic Diagram

夾層有色發電玻璃

OPV installed in between colored glass layers



示意圖
Schematic Diagram

可選透明度 Customized
degree of transparency*:

20%-40%

*透明度會影響發電效率，因
而影響安裝面積和成本回收
週期

Degree of transparency would
influence generation efficiency
and in turn, installation area
and length of pay-back period.

關於顏河教授 About Prof. Henry Yan

顏教授本科畢業於北京大學，2004年於西北大學獲得博士學位。2012年加入香港科技大學之前，曾於著名有機電子公司 Polyera 帶領科研團隊進行研究。過去兩年，顏教授於科大的團隊在有機太陽能電池上取得重要進展，有關研究於該領域處於領先地位。

Prof Yan graduated from Peking University and obtained his PhD at Northwestern University in 2004. Before joining HKUST in 2012, he led a research group at Polyera Corporation – a leading company in the organic electronics industry. During the past two years, Prof Yan's team has had major advances in emerging organic solar cells and is considered a leading group in the field.

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