

Nabil-932

Flexible Transparent conductive electrodes for OPV

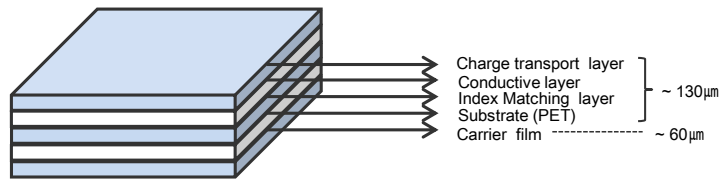
1. Key Feature

- Transparent electrode for OPV (Cathode)
- Low sheet resistance
- High flexibility
- Good adhesion

2. Application

- BIPV: Building Integrated Photovoltaic System
- VIPV: Vehicle Integrated Photovoltaic System
- RIPV: Road Integrated Photovoltaic System
- Wireless IoT Products for medical, sports devices, security sensors, cameras etc.

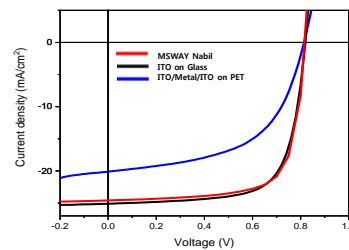
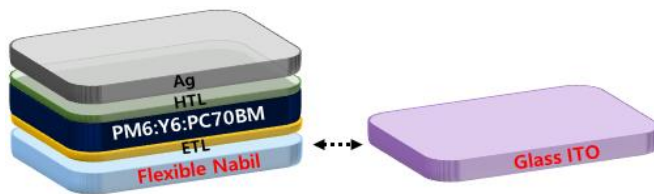
3. Product Structure



4. Properties

Properties	Result
Sheet Resistance (Ω/\square)	≤ 13
Transmittance(550 nm) (%)	≥ 87
Haze (%)	≤ 0.9
WF (eV)	-4.3~-4.2
Surface Roughness (nm)	≤ 2
Surface Energy (dyne/cm)	≥ 56
Adhesion	$\geq 4B$
Flexibility (R/R ₀)	$\leq 10\%$ (R=7 mm, 10,000 cycles)

5. OPV Cell Efficiency(Nabil-932 vs. ITO on Glass vs. OMO on PET)



Parameter	MSWAY	ITO on Glass	ITO/Metal/ITO on PET
Transmittance (% , 550 nm)	88	89	86
Sheet resistance (Ω/sq)	12	10	11
Voc(V)	0.84	0.82	0.81
Jsc(mA/cm ²)	24.6	25.1	20.1
FF(%)	70.4	70.4	55.1
IPCE(%)	14.6	14.5	9.0

* MSWAY production OPV 4.64 mm² cell actual measurement data

* All measurement values are subject to change without prior notice.

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