

What are Organic Solar Cells?

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- An organic solar cell consisting of a combination of an **organic polymer and PCBM (an organic semiconductor)** developed on steel substrates can potentially convert a steel roof into an energy-producing device.

Features:

- The devices consist of a blend of organic polymer PTB7 as a donor and PCBM as an acceptor.
- The devices were fabricated on opaque steel substrates with a **MoO₃/Au/MoO₃ top electrode**. These electrodes offer higher optical transmission as compared to only metallic electrodes.
- The devices with multilayer electrodes showed a clear improvement in the photovoltaic performance by 1.5 times, as compared with those obtained with single-layer top metal electrodes of gold.

What is the DST-RCUK APEX project?

- It is a jointly developed programme of the **Department of Science and Technology (Under the ministry of Science and Technology)** and the Research Councils United Kingdom (RCUK) focussing on reducing energy demand in the built environment.

Q1) What is the difference between organic and inorganic solar cells?

The major difference between silicon solar cells and organic solar cells is the semiconducting material used. Silicon solar cells use crystalline silicon, while organic cells use carbon-based organic compounds applied in a thin layer to a synthetic backing.

Source: Organic solar cells developed on steel substrates can convert a steel roof into an energy-producing device

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