

# Perovskite solar cell components





## Overview

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Perovskites commonly used in photovoltaic (PV) solar cells are more specifically called “metal-halide perovskites” since they are made of a combination of organic ions, metals, and halogens; perovskites in other applications may be made of oxygen instead of halogens and are usually entirely inorganic. Can perovskite solar cells be used for photovoltaic applications?

This article reviews the latest advancements in perovskite solar cell (PSC) components for innovative photovoltaic applications. Perovskite materials have emerged as promising candidates for next-generation solar cells due to their exceptional light-absorbing capabilities and facile fabrication processes.

What factors affect a perovskite solar cell's optoelectronic properties?

Each component layer of the perovskite solar cell, including their energy level, cathode and anode work function, defect density, doping density, etc., affects the device's optoelectronic properties. For the numerical modelling of perovskite solar cells, we used SETFOS-Fluxim, a commercially available piece of software.

Are perovskite materials suitable for next-generation solar cells?

Perovskite materials have emerged as promising candidates for next-generation solar cells due to their exceptional light-absorbing capabilities and facile fabrication processes. However, limitations in their stability, scalability, and efficiency have hindered their widespread adoption.

How do perovskite solar cells work?

The carrier transport materials The perovskite solar cell devices are made of an active layer stacked between ultrathin carrier transport materials, such as a hole transport layer (HTL) and an electron transport layer (ETL). The band alignment depends on their energy level, electron affinity, and ionization potential.



## Perovskite solar cell components

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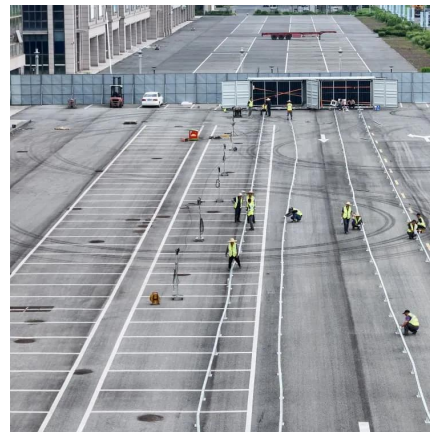


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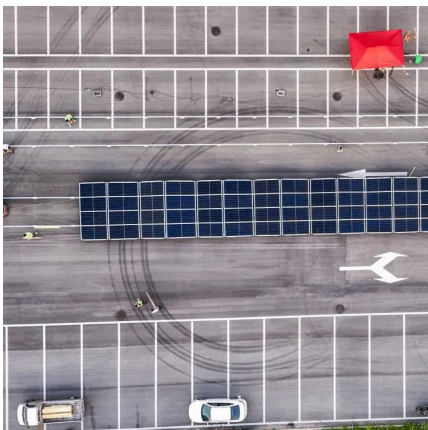


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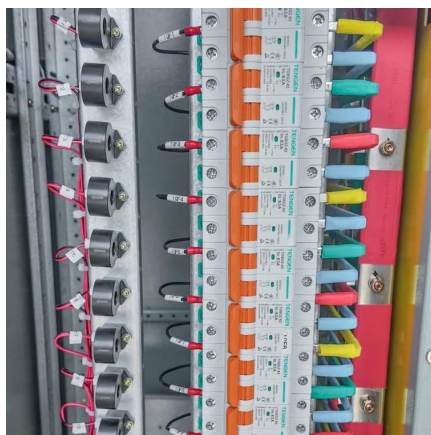
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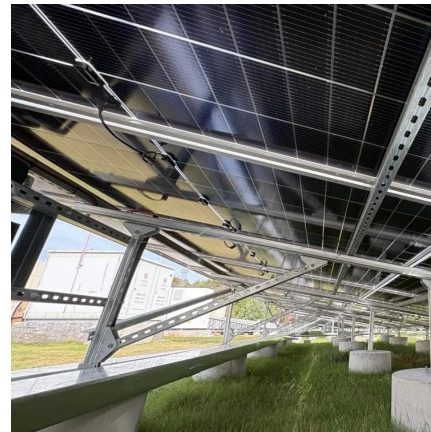
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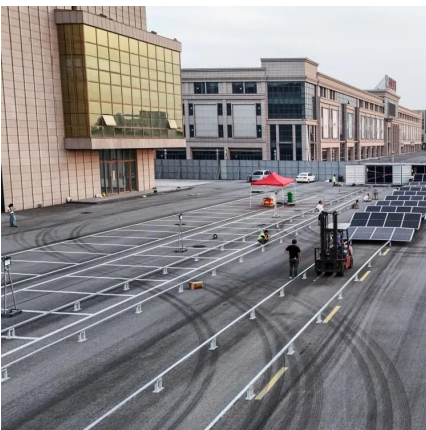
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