

Solar Cell And Structure Thereof

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ABSTRACT

Embodiments herein provide a solar cell structure having a layer (102) at a front side for absorbing light energy. One or more carrier selective layers (104) are configured on a rear side of the solar cell (100). The one or more carrier selective layers (104) select each of the charge carriers from electrons, holes or excitons.

KEY APPLICATION AREAS

1. Photovoltaic (solar cell) technology.
2. High-efficiency solar energy conversion.
3. Junction-less solar cells.
4. Carrier-selective contact (CSC) solar cells.
5. Silicon and thin-film photovoltaic devices.
6. Next-generation photovoltaic modules.

POTENTIAL USE

1. High-efficiency solar power generation.
2. Rear-contact solar cell architectures with reduced shading losses.
3. Rooftop and utility-scale solar panels.
4. Building-integrated photovoltaics (BIPV).
5. Low-temperature manufactured solar cells.
6. Improved photovoltaic performance through carrier-selective contacts.