Solar energy mater sol cells

What is solar energy materials & solar cells?

An International Journal Devoted to Photovoltaic, Photothermal, and Photochemical Solar Energy Conversion Solar Energy Materials & Solar Cells is intended as a vehicle for the dissemination of research results on materials science and technology related to photovoltaic, photothermal and photoelectrochemical solar energy conversion.

What is the impact factor of solar energy materials and solar cells?

Sol. Energy Mater. Sol. Cells Solar Energy Materials and Solar Cells is a scientific journal published by Elsevier covering research related to solar energy materials and solar cells. According to the Journal Citation Reports,Solar Energy Materials and Solar Cells has a 2020 impact factor of 7.267.

What is a solar cell?

Solar Cells, covering single crystal, polycrystalline and amorphous materials utilising homojunctions and heterojunctions, Schottky barriers, liquid junctions and their applications. Also of interest is analysis of component materials, individual cells and complete systems, including their economic aspects.

How efficient are silicon solar cells?

The efficiency of silicon solar cells has a large influence on the cost of most photovoltaics panels. Here,researchers from Kaneka present a silicon heterojunction with interdigitated back contacts reaching an efficiency of 26.3%and provide a detailed loss analysis to guide further developments.

Are solar cells reversible?

The solar cells undergo thermally-driven,moisture-mediated reversible transitionsbetween a transparent non-perovskite phase (81.7% visible transparency) with low power output and a deeply coloured perovskite phase (35.4% visible transparency) with high power output.

Can silicon solar cells improve photoconversion efficiency?

Nature Energy 2, Article number: 17032 (2017) Cite this article Improving the photoconversion efficiency of silicon solar cells is crucial to further the deployment of renewable electricity.

Solar cells were prepared using n-type Czochralski (CZ) silicon wafers (c-Si) with 5 Ocm resistivity. The as-cut wafers were wet-chemically etched to eliminate the sawing damage. ... Sol. Energy Mater. Sol. Cell., 187 (Dec. 2018), pp. 140-153, 10.1016/j.solmat.2018.07.018. View PDF View article View in Scopus Google Scholar [2] K. Yoshikawa ...

Commentary on Technoeconomic Analysis of High-Value, Crystalline Silicon Photovoltaic Module Recycling Processes [Solar Energy Materials and Solar Cells 238 (2022) 111592] M. Tao, N. Click, L. Ricci. Article 111677 View PDF;

Solar Energy Materials and Solar Cells. Volume 215, 15 September 2020, 110643. 25.11% efficiency silicon heterojunction solar cell with low deposition rate intrinsic amorphous silicon buffer layers. ... Sol. Energy Mater. Sol. Cells, 187 (2018), pp. 140-153, 10.1016/j.solmat.2018.07.018.

select article Corrigendum to "Methodology to predict annual yield losses and gains caused by solar module design and materials under field exposure" [Sol. Energy Mater. Sol. Cell. 202 110069]

The solar cells undergo thermally-driven, moisture-mediated reversible transitions between a transparent non-perovskite phase (81.7% visible transparency) with low power ...

Solar Energy Materials and Solar Cells. Volume 165, June 2017, Pages 128-137. Transparent alumina based superhydrophobic self-cleaning coatings for solar cell cover glass applications. ... Sol. Energy, 66 (4) (1999), pp. 277-289. View PDF View article View in Scopus Google Scholar [4]

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As the application of these materials to c-Si solar cells is a very young field of research, efficiencies achieved so far have not been able to keep up with the efficiencies obtained with poly-Si-based selective contacts. ... Sol. Energy Mater. Sol. Cells, 65 (2001), pp. 239-248. View PDF View article View in Scopus Google Scholar [2] R.S ...

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Solar energy materials have properties tailored to meet requirements set by the spectral distribution, angle of incidence, and intensity of the electromagnetic radiation prevailing in our natural surroundings. Specifically, the optimization can be performed with regard to solar irradiation, thermal emission, atmospheric absorption, visible ...

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Sol. Energy Mater. Sol. Cells (2001) R. Hezel Silicon nitride for the improvement of silicon inversion layer solar cells. Solid-State Electron (1981) C. Leguijt et al. Low-temperature surface passivation for silicon solar cells. ... Solar Energy Materials and Solar Cells, Volume 158, Part 1, 2016, pp. 60-67.

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Here, we use industrially compatible processes to fabricate large-area silicon solar cells combining interdigitated back contacts and an amorphous silicon/crystalline silicon ...

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Solar Energy Materials and Solar Cells. Volume 231, October 2021, 111291. On the limiting efficiency for silicon heterojunction solar cells. ... Sol. Energy Mater. Sol. Cells, 215 (2020), p. 110643, 10.1016/j.solmat.2020.110643. View PDF ...

Solar Energy Materials and Solar Cells. Volume 158, Part 2, December 2016, Pages 189-194. Light-induced effects on Spiro-OMeTAD films and hybrid lead halide perovskite solar cells. ... Sol. Energy Mater. Sol. Cells, 91 (2007), pp. 424-426. View PDF View article View in Scopus Google Scholar

For this reason, already from the 1960s, space industry looked into the introduction of thin film CuS 2, CdS, and CdTe solar cells on the increasingly energy-demanding communications satellites, ... Sol. Energy Mater. Sol. Cells, 95 (2011), pp. 1253-1267, 10.1016/j.solmat.2011.01.036. View PDF View article View in Scopus Google Scholar [13]