

Researchers at the National University of Singapore (NUS) have developed a novel triple-junction perovskite/Si tandem solar cell that can achieve a certified world-record power conversion efficiency of 27.1 percent across a ???





For organic solar cells (OSCs), bridging the gap with Shockley???Queisser limit necessitates simultaneously reducing the energy loss for a high open-circuit voltage, improving light utilization







Nature Energy - Organic solar cells processed from green solvents are easier to implement in manufacturing yet their efficiency is low. ITO glass with a sheet resistance of 15 ?(C) sq ???1 and a

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Nature Energy - A detailed understanding of defects in kesterite solar cells is still lacking. Guo, H. et al. Band-gap-graded Cu 2 ZnSn(S,Se) 4 drives highly efficient solar cells. Energy

Nature Energy - Perovskite solar cells are developing fast but their lifetimes must be extended. Now, large-area printed perovskite solar modules have been shown to be stable for more than 10,000



Nature Energy - Perovskite solar cells have emerged as a potential low-cost alternative to existing technologies. With efficiency comparable with silicon solar cells ??? namely, 15???20%

Photovoltaic power conversion using polycrystalline light-absorbing semiconductors enables low-cost electricity generation. Cu(In,Ga)Se2 (CIGS) are among the best performing thin-film solar cells

Nature Energy - Suo et al. show that sulfonium-based molecules afford formamidinium lead iodide perovskites protection against environmental stress factors, improved phase stability and solar cells



Nature Energy - Improving the manufacturability of perovskite solar cells is key to their deployment. Zheng et al. report a one-step deposition of the hole-selective and absorber layers that

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Here, we demonstrate a tandem cell with an efficiency of 15.0 ? 0.3% (for 2 mm2 cells) that combines a solution-processed non-fullerene-acceptor-based infrared absorbing subcell on a visible

SOLAR°

Nature Energy - Tin oxidation limits the efficiency of low bandgap perovskite solar cells. Hu, S. et al. Optimized carrier extraction at interfaces for 23.6% efficient tin???lead perovskite



Nature Energy - The efficiency of kesterite solar cells has been stuck at 12.6% since 2013 due to challenges in controlling defects. Now Gong et al. present a low-temperature annealing of the



Nature Reviews Materials - Nearly all types of solar photovoltaic cells and technologies have developed dramatically, especially in the past 5 years. in energy in a solar cell is thus given by

CONVENTIONAL SOLAR POWER ???mostly based on silicon???is already a green energy success, supplying roughly 3% of all electricity on the planet. It's the biggest new source of power being added to the grid, with more ???



The cells were illuminated using a solar simulator at AM 1.5 G for 10 s, for which the light intensity was adjusted to 1 Sun intensity (100 mW cm ???2) through the use of a National Renewable

An improved device design for perovskite-based photovoltaic cells enables a certified power conversion efficiency of 25.2 per cent, translating to 80.5 per cent of the thermodynamic limit for its

The grain boundaries in thin-film perovskite solar cells are responsible for non-radiative carrier recombination, which is deleterious for the optoelectronic performance. Son et& nbsp;al.& nbsp;show



Nature Energy - The development of passivating contacts holds great potential for enhancing the power conversion efficiency of silicon photovoltaics. Energy Mater. Sol. Cells 178, 15???19



Ongoing efforts are devoted to raising the efficiency of solar cells in converting energy from solar radiation. TA and SA PCBM are 5.15 ?(C) cm 2 for high-performance solar cells. Nature

Single-junction organic solar cells (OSCs) 1,2,3,4 based on conjugated polymer donors and fused ring electron acceptors (FREAs) 5,6,7,8,9 have achieved prominent power conversion efficiencies



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Nature Energy - Controlling the crystallization of perovskites is not trivial. the 4-T tandem cell delivers a PCE of 25.15%, hybrid and all-inorganic perovskite solar cells and their