



Princeton Engineering researchers have developed the first perovskite solar cell with a 30-year lifespan. The new device is the first of its kind to rival the performance of silicon-based solar cells. A pioneering new test method will ???



As solar energy booms in the U.S. with record investments and installations, a wave of technological advancements is set to transform the amount of energy solar can produce, where it can be



The race to get next-generation solar technology on the market. Companies say perovskite tandem solar cells are only a few years from bringing record efficiencies to a solar project near



What is photovoltaic (PV) technology and how does it work? PV materials and devices convert sunlight into electrical energy. A single PV device is known as a cell. An individual PV cell is usually small, typically producing about 1 or 2 watts of power.



Photovoltaic (PV) technologies ??? more commonly known as solar panels ??? generate power using devices that absorb energy from sunlight and convert it into electrical energy through semiconducting materials. These devices, known as solar cells, are then connected to form larger power-generating units known as modules or panels.



There are several ways current solar technology can be improved: Increased efficiency. Improved material availability and reduced toxicity. Decreased difficulty and/or cost of manufacturing. Improved lifespan. New uses of the technology. The technologies we'll look at below improve upon existing technology in one or more of these ways.



Solar technologies convert sunlight into electrical energy either through photovoltaic (PV) panels or through mirrors that concentrate solar radiation. This energy can be used to generate electricity or be stored in batteries or thermal storage.



In November 2023, a buzzy solar technology broke yet another world record for efficiency. The previous record had existed for only about five months???and it likely won't be long before it too