

Photo-rechargeable zinc-ion cells

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Solar energy is often stored in rechargeable batteries for later use. Currently this process requires separate solar cells to harvest the energy and batteries to store it. Scientists have engineered a battery cathode that can take the place of the solar cell and recharge the battery. This means that it can be directly charged in sunlight without needing an external solar panel.

The scientists used Zn-ion batteries instead of Li-ion batteries. While Zn-ion batteries have a lower energy density, they are more stable than their Li-based counterparts, can work using aqueous electrolytes and are considerably cheaper. These properties make them ideal for use in off-grid applications for rural communities.



AAA batteries. Zinc (left) and alkaline (right).



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1. How do the reactions differ in a rechargeable and non-rechargeable cell?
2. What is the difference between a battery and an electrical cell?
3. Suggest why Zn-ion cells have a lower energy density than Li-ion cells