

Nature renewable energy

Thank you for visiting nature . You are using a browser version with limited support for CSS. To obtain the best experience, we recommend you use a more up to date browser (or turn off compatibility mode in Internet Explorer). In the meantime, to ensure continued support, we are displaying the site without styles and JavaScript.

The sustainable fabrication of perovskite solar cells is critical. Duan et al. present a more environmentally friendly solvent system to process wide-bandgap perovskite films that can also be used for industrial-scale manufacturing in ambient air.

The assessment of the mechanical properties of flexible solar cells lacks consistency. In this Perspective, Fukuda et al. outline standards and best practices for measuring and reporting photovoltaic performance under bending stresses, strain and load orientation.

In battery research, the demand for public datasets to ensure transparent analyses of battery health is growing. Jan Figgenger et al. meet this need with an 8-year study of 21 lithium-ion systems in Germany, generating a dataset of 14 billion data points that offers valuable insights into battery longevity for home storage.

Energy companies must often obtain consent from private landowners for natural gas extraction. This study analyses lease negotiations between these two parties in Ohio, noting disadvantages on the side of the landowner in the process.

The unclear understanding of the interphase has limited advancements in battery performance. To address this, the authors designed sulfoximide salts with distinctive interphasial chemistry, enabling high-performance lithium metal batteries even under extreme conditions.

Reducing the energy demands of chemical separations could help to decarbonize industry. Based on data-driven and first-principles modelling, here the authors report an approach to holistically compare and select optimal technologies for chemical separation.

Oxygen evolution is a key reaction in electrolyzers and involves a spin-dependent, multi-electron transfer process. Here the authors use topological semimetals with intrinsic chirality as a means to control spin in oxygen evolution catalysts, and explore the role of spin-orbit coupling in determining activity.

Achieving uniform coverage of interfacial layers in perovskite solar cells is challenging, especially over large areas. Li et al. present design guidelines to fabricate these layers with uniform morphology, suppressed defects and improved charge transport.



Nature renewable energy

Nuclear small modular reactors could help decarbonize industrial heat processes in the United States, but widespread deployment (of up to a thousand reactors) hinges on factory learning, extended tax credits and avoiding cost escalations.

Although regulation within the European Union requires manufacturers of battery storage systems to provide state-of-health estimates to customers, no standardized methods for such estimates exist. Now, a large open-access dataset from eight years of field measurements of home storage systems is presented, enabling the development of a capacity estimation method.

Traditionally, lithium-ion battery cathodes face a trade-off between the energy density afforded by high-voltage anion reduction-oxidation and long-term stability. Now, incorporating polyanion motifs into a disordered oxide crystal structure is shown to stabilize the oxygen sublattice, improving capacity retention at high energy densities.

Contact us for free full report

Web: <https://sumthingtasty.co.za/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

