

# Energy Storage Science and Engineering of New Energy



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[A new approach could fractionate crude oil using much less energy](#)

MIT engineers developed a membrane that filters the components of crude oil by their molecular size, an advance that could dramatically reduce the amount of energy needed for crude oil

[ENERGY , Special Issues: New Energy and Energy Storage System](#)

The rapid development of new energy and energy storage technologies is vital for building a green and low-carbon smart grid. While significant progress has been achieved, systematic solutions remain



### Energy Science & Engineering

ESE's mission is to develop the engineering science and educate the future leaders needed to transform global energy supply, production/conversion, storage, and

[Recent advancement in energy storage technologies and their](#)

Renewable energy integration and decarbonization of world energy systems are made possible by the use of energy storage technologies. As a result, it provides significant benefits with



[New facility to accelerate materials solutions for fusion energy](#)



The new Schmidt Laboratory for Materials in Nuclear Technologies (LMNT) at the MIT Plasma Science and Fusion Center accelerates fusion materials testing using cyclotron proton beam

[MIT Energy Initiative conference spotlights research](#)

At the MIT Energy Initiative's Annual Research Conference, industry leaders agreed collaboration is key to advancing critical technologies amidst a changing energy landscape.



**Energy Storage: From Fundamental Principles to**

This study reviews chemical and thermal energy storage technologies, focusing on how they integrate with renewable energy sources,

[Concrete "battery" developed at MIT now packs 10 times the power](#)

New concrete and carbon black supercapacitors with optimized electrolytes have 10 times the energy storage of previous designs and can be incorporated into a wide range of architectural



[What's the best way to expand the US electricity grid?](#)

Growing energy demand means the U.S. will almost certainly have to expand its electricity grid in coming years. What's the best way to do this? A new study by MIT researchers examines

**Explained: Generative AI's environmental**

## impact

MIT News explores the environmental and sustainability implications of generative AI technologies and applications.



## Evelyn Wang: A new energy source at MIT

As MIT's first vice president for energy and climate, Evelyn Wang is working to broaden MIT's research portfolio, scale up existing innovations, seek new breakthroughs, and channel

## [New materials could boost the energy efficiency of microelectronics](#)

MIT researchers developed a new fabrication method that could enable them to stack multiple active components, like transistors and memory units, on top of an existing circuit, which



## [How artificial intelligence can help achieve a clean energy future](#)

A look at how AI can be used to help support the clean energy transition by helping to manage power grid operations, plan infrastructure investments, guide the development of novel

## [A Comprehensive Review of Next-Generation Grid-Scale Energy](#)

New systems and methods for grid-scale energy storage are constantly being developed to improve the dependability and stability of power supply, particularly in light of the growing use of renewable





[Energy](#) , [MIT News](#) , [Massachusetts Institute of Technology](#)

Massachusetts Clean Energy Center CEO MBA '12 Emily Reichert highlights the state government's unique approach to fostering and keeping clean energy innovation.

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