

# Power generation and energy storage thin films



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### [Ultrahigh Energy Storage in Aurivillius-Phase Dielectric Thin Films](#)

The present research opens up a generalizable approach for designing ferroelectric thin films to develop next-generation high-performance energy storage devices applications.

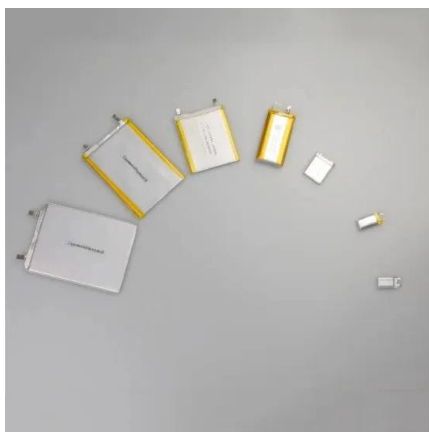
### [Ultrahigh energy storage in process-engineered NaNbO<sub>3</sub>-based thin ...](#)

Here, we demonstrate relaxor sodium niobate-based thin films with Bi and Mg substitution, synthesized via optimized chemical solution deposition.



### [Advances in Dielectric Thin Films for Energy Storage Applications](#)

We foresee that energy storage capacitors based on ferroelectric HfO<sub>2</sub> and ZrO<sub>2</sub>-based thin films have strong potential to revolutionize the energy storage market.



### [Thin Film Technology for Advanced Energy Storage Systems](#)

In this research, we systematically investigate the impact on electrochemical properties of SnO<sub>2</sub> thin-films upon mixing with TiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub> and ZnO.



Ultra-thin multilayer films for enhanced energy storage performance

In this study, an innovative approach is proposed, utilizing an ultra-thin multilayer structure in the simple sol-gel made ferroelectric/paraelectric BiFeO<sub>3</sub>/SrTiO<sub>3</sub> (BF/ST) system to enhance the ...

Thin films for energy applications

This Collection presents original research in the development and applications of thin films, specifically for energy applications.



Conductive Polymer Thin Films for Energy Storage and Conversion

This review comprehensively explores the role of conductive polymer thin films in three critical energy applications: supercapacitors, batteries, and solar cells.



### Application of Thin Films in High-Voltage and Power Electronics

Ultra-thin film transistors utilizing materials like gallium nitride (GaN) and silicon carbide (SiC) are delivering improvements in switching speeds and energy efficiency, making them essential ...



### Thin film technology for energy storage media

Metallized polymer films as current collectors represent interesting opportunities to increase both gravimetric and volumetric energy density while improving battery safety aspects and saving scarce ...

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