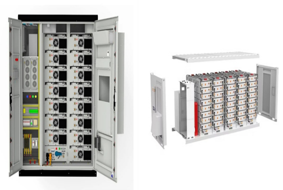
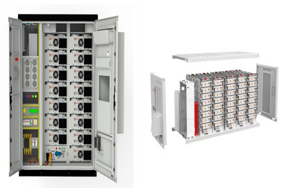
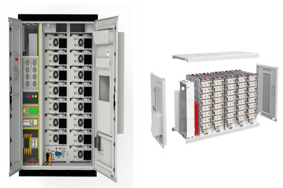
BODY ENERGY STORAGE MATERIALS



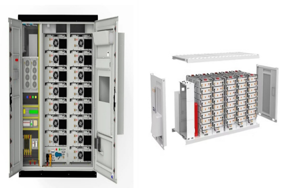
Should flexible body-patchable energy storage materials be used in biomedical systems? Therefore, flexible body-patchable energy storage materials should achieve good adhesiveness, mechanical durability, and sensitive response towards body movement before they can be applied to biomedical systems such as smart hair, medical/cosmetic patches, healthcare screens, and glove/fingernail and fitness/motion trackers.



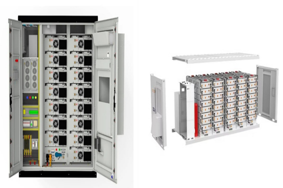
Which materials are used in energy storage devices? Typically,functional materials including carbon,metals and metal oxides,biopolymers,and compositesare used as electrode materials in energy storage devices powering biomedical systems (Fig. 2) [,,,].



What is a stretchable body-integrated energy system? The system is applied to power wearable electronics and implantable pulsed electrical stimulation. Stretchable body-integrated energy systems are urgently needed due to the rapid development of wearable and implantable electronic devices.



What are biomedical energy storage devices? Biomedical energy storage devices have a unique interface between the material/device and human skin/tissue,which differs from the conventional interfaces applied to mobile,electrical vehicle,and renewable energy fields.



What is a stretchable energy supply system? A stretchable energy supply system integrating wireless charging,energy storage and switching circuitis constructed. Mechanical and electrical properties of the system under various deformations are studied using finite element analysis. The system is applied to power wearable electronics and implantable pulsed electrical stimulation.

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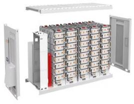
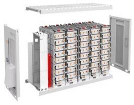


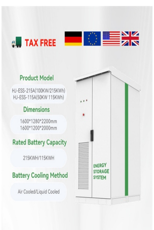
Are energy storage devices durable? Most wearable and biomedical devices are used for long periods and require multiple instances of power supply. Thus, the durability of energy storage devices is considered to be a key parameter for both skin-patchable and implantable applications.

To fulfill flexible energy-storage devices, much effort has been devoted to the design of structures and materials with mechanical characteristics. This review attempts to critically review the state of the art with respect to materials of ???


Charging flexible electrochemical energy storage devices by human-body energy (body motion, heat, and biofluids) is becoming a promising method to relieve the need of frequent recharging, and, thus, enable the ???


This smart fabric combines energy storage, self-heating, and triboelectric power generation at low temperatures, providing a feasible solution for creating flexible wearable devices for complex environments.



This article explores the progressive development of MOF materials, highlighting their potential in the realm of self-power devices for wearable applications. It first introduces the typical energy harvesting routes ???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SusMat is a sustainable materials journal covering materials science to ecology, including environment-friendly materials, green catalysis, clean energy & waste treatment. and characteristics of different self ???

The human body produces considerable mechanical and thermal energy during daily activities, which could be used to power most wearable electronics. In this context, fiber-based energy conversion devices (FBECD) are proposed as ???

Iron carbide allured lithium metal storage in carbon nanotube cavities [Energy Storage Materials 36 (2021) 459???465] DOI of original article 10.1016/j.ensm.2021.01.022 Gaojing Yang, Zepeng ???

However, the scope of existing reviews is often constrained, typically concentrating on specific materials such as MXenes [8], carbon-based materials or conductive materials or ???

In order to maintain thermal comfort in the human body, photothermal conversion and energy storage microcapsules were designed, developed, and applied in a light-assisted thermoregulatory system. The octyl stearate as a phase change ???