

Miniaturized and flexible energy storage devices for a smart life

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Continuous novelty as the basis for creative advance in rapidly developing different form-factor microelectronic devices requires seamless integrability of energy storages. The electronic components of the soft and free-form devices have been surprisingly advanced for example, wearable electronics, smart clothes, electronic skins, artificial intelligence (AI), and implantable medical devices. However, energy storages are still a limiting factor in achieving complete and independent smart electronics for the next generation. Fortunately, along with developments in energy storage materials, the focus has been shifting more and more towards innovative fabrication processes, unconventional configurations, and designs with multi-functional components very recently. To overcome the challenge, two common strategies are introduced; 1) materials that have intrinsic deformable feature and 2) free-form designs that are able to operate under mechanical strain.