On-chip energy storage devices

With the general trend of miniaturization of electronic devices especially for the Internet of Things (IoT) and implantable medical applications, there is a growing demand for reliable on-chip ...

The scientists developed microcapacitors with ultrahigh energy and power density, paving the way for on-chip energy storage in electronic devices. In the ongoing quest to make electronic ...

<p>The rapid progress of micro/nanoelectronic systems and miniaturized portable devices has tremendously increased the urgent demands for miniaturized and integrated power supplies. ...

Miniaturized energy storage devices, such as electrostatic nanocapacitors and electrochemical micro-supercapacitors (MSCs), are important components in on-chip energy supply systems, ...

The purpose of this summary article is to give a generic view of our recent works on designing and manufacturing on-chip miniaturized EES devices in particular 3D EES devices based on ...

Our present study demonstrates that BENZ-based molecular junctions behave as classical organic capacitors and could be a suitable building block for nanoscale on-chip energy storage ...

Currently, MSCs are mainly targeted for electronics and other on-chip uses that can be directly coupled to micro-electromechanical systems, energy harvesting micro-systems, ...

Although on-chip electrochemical capacitors could offer high power density and high-frequency response, the main drawback of these devices is the low energy density. Two of the promising ...

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