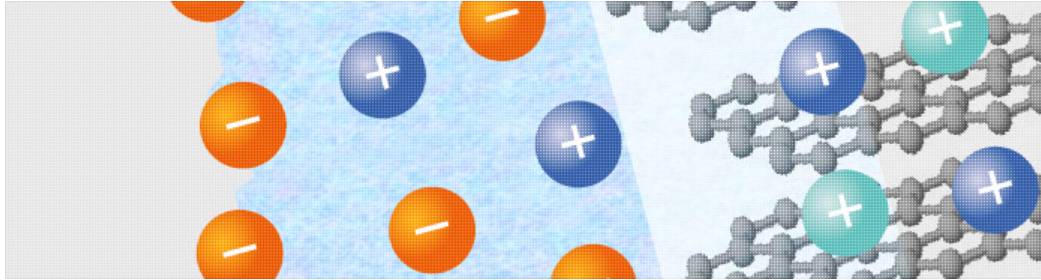


## Features of Lithium-Ion Capacitors



# Combining the principles of electric double-layer capacitors (EDLCs) and lithium-ion batteries (LIBs)

The cathode of a lithium-ion capacitor (LICs) is activated carbon, like an electric double-layer capacitor (EDLCs). The anode, on the other hand, uses carbon-based material to store up lithium ions, like a lithium-ion battery (LIBs). It is a hybrid capacitor which synergizes the best of both features.

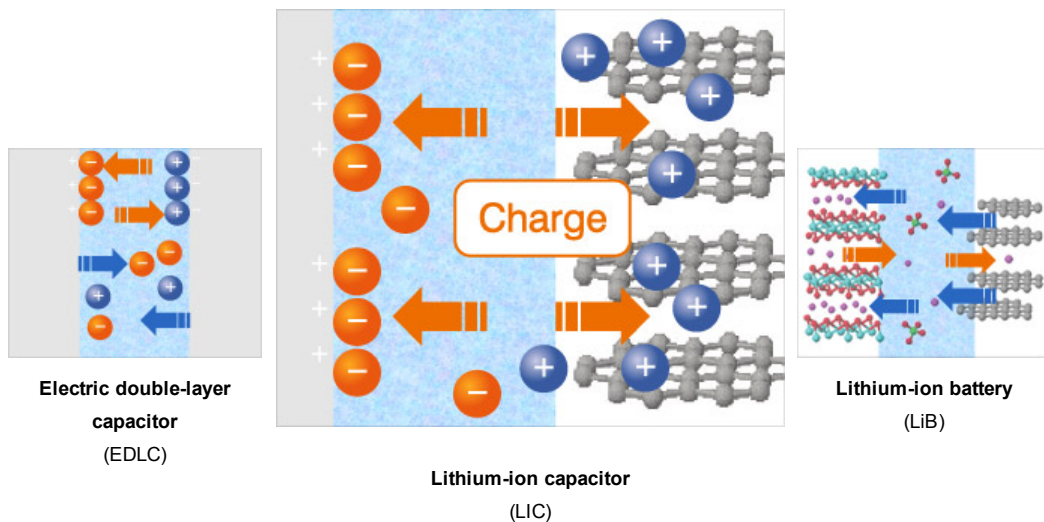
### How it works

Electric double-layer capacitors store charge by physically adsorbing the cations and anions from an electrolytic solution on positive and negative sides, as an electric double layer.

LIBs react chemically with lithium ions at their positive and negative sides to store and release them, or charge and discharge.

LICs combine these two principles, adsorbing and desorbing ions at their cathodes and storing and releasing lithium ions at their anodes to charge and discharge.

With predoping lithium ions, they can achieve higher cell voltage than EDLCs and improve energy density. Also, they can charge and discharge rapidly due to inventions taken to reduce resistance to the storage and release reactions of the lithium ions at the anode.



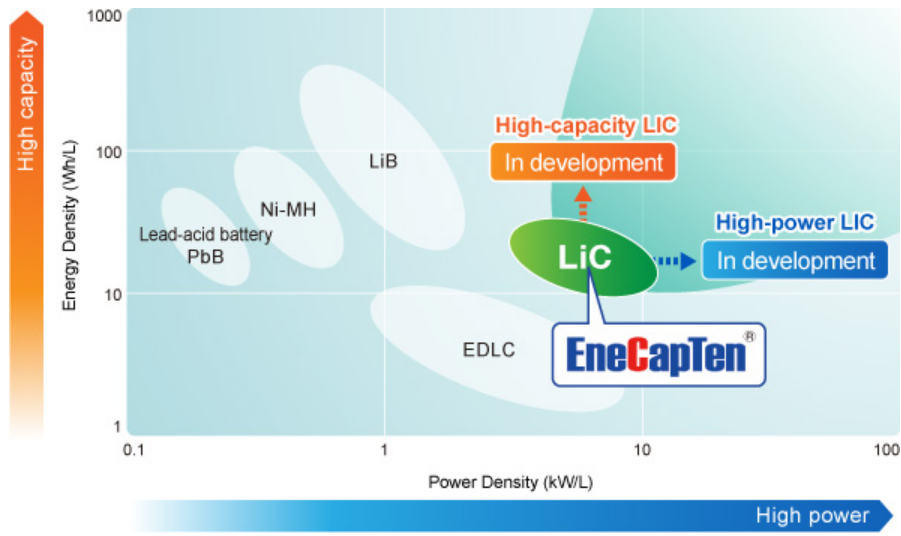
### Main features

LICs have higher energy density than EDLCs and higher power density than LIBs.

- What Is LIC? >
- Features of Lithium-Ion Capacitors
- Performance of Lithium-Ion Capacitors
- Markets Created by LICs
- Application Fields

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Advantages over EDLCs	Advantages over LIBs
<ul style="list-style-type: none"> <li>High voltage</li> <li>High energy density</li> <li>Little self-discharge</li> <li>Reliability at high temperatures</li> </ul>	<ul style="list-style-type: none"> <li>High power density</li> <li>Good cycle characteristics</li> <li>No use of rare metals</li> <li>High safety</li> </ul>

\*There are other advantages as well, such as that LICs are eco-friendly since they do not use heavy metals.

<p><b>What Is LIC?</b></p> <ul style="list-style-type: none"> <li>Features of Lithium-Ion Capacitors</li> <li>Performance of Lithium-Ion Capacitors</li> <li>Markets Created by LICs</li> <li>Application Fields</li> </ul>	<p><b>AFEC's Technology</b></p> <ul style="list-style-type: none"> <li>Cell technology</li> <li>Module technology</li> <li>Production technology</li> </ul>	<p><b>Product Information</b></p> <ul style="list-style-type: none"> <li>ECM015PR Series</li> <li>ECM045SR Series</li> </ul> <p><b>Application Examples</b></p>	<p><b>Corporate Information</b></p> <ul style="list-style-type: none"> <li>Key Message</li> <li>Corporate Policy</li> <li>Corporate Profile</li> <li>Access</li> </ul>	<ul style="list-style-type: none"> <li>Site Map</li> <li>Privacy Policy</li> <li>Terms of Use</li> <li>Contact Us</li> </ul>
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