**Recent Advancements in Electrode Materials for Supercapacitors for their Applications in Electric Vehicles**

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**Abstract**

The impact of internal combustion engines (ICE) on the environment is the area of major concern worldwide. In order to resolve this problem, there is a shift towards alternative sources such as electric powered engines. Here the electrochemical energy plays a vital role as a part of clean energy portfolio. The main devices working on the electrochemical energy conversion are batteries, fuel cells and the supercapacitors (SCs). The SCs are the areas of main attention because of the unique properties they possess such as high-power density, long cycle life, high capacitance and low maintenance, and its ability to bridge the gap between capacitor and battery. One of the unique features possessed by the SCs is that it takes very short period for both charging and discharging. The utilization of electrode materials with very slim dielectrics and more surface area are the reason for better capacitance exhibited by the SCs. Some efficient electrode materials such as graphene-based materials, metal-organic frameworks and activated carbon-based materials can be used for raising the electrochemical properties of the SCs such as power density, energy density, specific capacitance, etc. The aim of this review is to provide a basic idea about different kind of electrode materials used in SCs for electric vehicles (EVs).

**Keywords:** Supercapacitors, Electric Vehicles, Cycle Life, Power Density, Energy Density

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