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Graphene Batteries

We live in the 21 century and our life depends on technologies. Smart phones, tablets, laptops are not only usual gadgets, but also electric vehicles, all devices that use batteries. But there is a big problem, the problem of a constant lack of battery power.

In modern devices Li-ion batteries are used, which when charging slightly reduce the capacity and cannot withstand high power. Of course, there are many technologies that accelerate charging. But there is a material called graphene, on the basis of which it is possible to produce batteries that are much better than Li-ion batteries.

Graphene, a sheet of carbon atoms bound together in a honeycomb lattice pattern, is hugely recognized as a “wonder material” due to the myriad of astonishing attributes it holds. It is a potent conductor of electrical and thermal energy, extremely lightweight chemically inert and flexible with a large surface area. Graphene is a better electricity conductor than copper, 200 times stronger than steel and transparent.

Graphene can make batteries that are light, durable and suitable for high capacity energy storage, as well as shorten charging times. It will extend the battery’s life-time, which is negatively linked to the amount of carbon that is coated on the material or added to electrodes to achieve conductivity, and graphene adds conductivity without requiring the amounts of carbon that are used in conventional batteries.

In addition to revolutionizing the battery market, combined use of graphene batteries and supercapacitors could yield amazing results, like the noted concept of improving the electric cars driving range and efficiency. A team of researchers at the University of California, Los Angeles (UCLA) have found a way to use graphene batteries to charge an iPhone faster than anyone could imagine. An iPhone with a grapheme supercapacitor installed can be fully charged within only five seconds, while a MacBook requires 30 seconds to charge.

So, why graphene is better? If we compare graphene with Li-ion there are much more benefits, such as: batteries lifetime, less charging time, eco-friendliness. These pluses make graphene batteries much better than other and more prospective in the battery market.