

Startup creates new type of electrolyte for better and cheaper lithium ion battery

June 5 2012, by Bob Yirka

(Phys.org) -- The problem with lithium ion batteries, the kind used in cars, cellphones and other devices, is that they don't hold enough energy relative to their size. Small batteries mean constantly recharging your phone while big batteries add a lot of weight and cost to the price of an electric car. What's needed, most experts agree, is a new kind of electrolyte, the material that sits between the anode and cathode in a lithium ion battery. Now a new startup thinks they've found it. Called Iolyte, the new material is flame retardant, doesn't evaporate and is able to hold more charge than current electrolytes.

The startup, called [Boulder Ionics](#), has apparently found a way to get more bang for the buck with lithium ion batteries by creating a liquid [electrolyte](#) out of ionic salts that performs better than anything else currently being used. They say, for example, that a regular car battery, the kind used in gasoline powered vehicles to start the engine, using its new electrolyte, would be reduced from the current size to something no bigger than a flashlight. Thus far the company has built and shown off key pieces of its technology and that has been enough to attract \$4.3 million in investment funds, which suggests the companies claims are realistic. A better example perhaps of the new technology would be a cell phone battery that lasts ten times as long.

The company says that the new electrolyte could be used with so called supercapacitors as well, which are capacitors that charge much more quickly than standard ones and can also hold a much higher charge. Such supercapacitors have seen limited use thus far due to their high cost and

limited voltage range. Boulder Ionics thinks it can change all that with its new electrolyte, which would pave the way for cheaper storage systems for solar or wind farms.

Another way the new electrolyte might be used, is with metal-air batteries (those that use oxidation of metal with oxygen in air to create electricity) which could theoretically mean a tenfold increase of power capacity over those currently in use.

In addition to the special properties of the new electrolyte, Boulder Ionics says it has developed a new way to manufacture electrolytes in general that is much faster, takes less room and costs less than conventional methods, which they say means they will be able to sell their electrolytes at much lower cost, meaning electric vehicles could finally come down in price, as could general consumer electronics devices of course.

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