# Why battery technology hasn t improved

Are batteries getting better over the years?

The third important point: Batteries have been getting betterover the decades. The reason we don't notice is that our devices have been getting faster,more powerful and more power-hungry at the same time. Heck,if you could put a modern iPhone battery into a 1995 phone,it'd probably go a year on a single charge.

How have batteries changed over time?

Until now, major battery advances came from using new materials. Consumer electronics batteries began lasting longer when they switched from relying on nickel, a type of metal, to lithium. John Goodenough, a key scientist in the development of modern batteries, says research now is focused mainly on improving lithium batteries.

Are lithium-ion batteries getting better?

Cold fusion is eternally 20 years away, and new battery technology is eternally five years away. That skepticism is understandable when a new battery design promises a revolution, but it risks missing the fact that batteries have gotten better. Lithium-ion batteries have reigned for a while now--that's true.

How difficult is it to develop better batteries?

One difficult thing about developing better batteries is that the technology is still poorly understood. Changing one part of a battery--say,by introducing a new electrode--can produce unforeseen problems,some of which can't be detected without years of testing.

Will new battery technology ever see the market?

It's hard to write about battery research around these parts without hearing certain comments echo before they're even posted: It'll never see the market. Cold fusion is eternally 20 years away,and new battery technology is eternally five years away.

Why is battery technology so slow?

They give us longer-lasting smartphones, anxiety-free electric transport, and potentially, more efficient energy storage for large-scale buildings like data centers. But battery tech is frustratingly slow to advance, due to both the chemical processes involved and the challenges that exist around commercializing new battery designs.

Any new battery technology will need to be held to even higher standards than our current technologies, and that means adding years of research and testing to an already ...

Posted by u/Prefix-NA - 4 votes and 7 comments

Wasn"t there something better for them to use? As it turns out, not really. And ...

A modern 18650 cell used in a Tesla battery pack for example, has around 3400 mAh. ...

A modern 18650 cell used in a Tesla battery pack for example, has around 3400 mAh. Meanwhile from a cost per kWh perspective, lithium battery packs have dropped from $780/kWh to only ...

Also, such "great leaps" in battery technology haven"t really been made. Like the first commercial li-ion batteries, the current pinnacle of battery technology, were made in 1991. We haven"t ...

This review article explores the critical role of efficient energy storage solutions in off-grid renewable energy systems and discussed the inherent variability and intermittency of ...

Materials scientist Mike Zimmerman has succeeded in replacing the highly flammable liquid electrolyte (through which ions swim when you charge or discharge your battery) with a single piece of ...

LeVine"s account of Envia"s work shows why major progress in batteries is so hard to achieve and why startups that promise world-changing breakthroughs have struggled.

Technologists have devised a variety of ways in which lithium batteries can be tweaked to improve battery density, and maybe more importantly, battery safety.

For the time being, most big-name battery producers, battery startups, and other tech organizations will continue focusing on iterative improvements to the standard lithium-ion ...

I don"t think it"s accurate to say battery tech hasn"t been advancing .The original 18650 cell had a capacity of 1200 mAh.A modern 18650 cell used in a Tesla battery pack for example, has ...

A study may identify a way to significantly improve one characteristic, generating an exciting top-line conclusion. But the design may be impractically poor in some other way.

Battery technology is gradually improving over time, but instead of releasing new products that take advantage of these improvements by prolonging battery life, most manufacturers instead ...

Even if new battery makers manage to bring novel technologies to market, they face a dangerous period of ramping up production and finding buyers.

Materials scientist Mike Zimmerman has succeeded in replacing the highly flammable liquid electrolyte (through which ions swim when you charge or discharge your ...

But battery life hasn"t improved. In fact, battery life feels like it"s getting worse. ... Battery technology hasn"t been improving at the exponential rate that other smartphone ...

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