

BATTERY TECHNOLOGY



for the

FUTURE

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Frankly Speaking

Imagining new technologies is easy, figuring out how to bring them into the real world is much harder.

If you're trying to design something futuristic, challenge are, you're waiting on the materials available to catch up with your idea.

But there are some exciting solutions that can help us to reimagine what mobility will look like in the future.

Poor logic makes a solid-state battery, the battery in your phone is also lithium based.

But it uses the liquid to move energy around.

This means they get hot, they're more flammable and they can explode.

Remember the note seven solid-state batteries, you solid electrodes and electrolytes making it much more stable.

There are a few reasons why we think solid-state batteries are gonna be the next big thing.

Well they're much smaller and cheaper than current liquid based batteries.

They can potentially charge faster or last longer and just have better overall performance.

Today's batteries have short lifespans and the constant charging and discharging slowly erodes their performance.

Solid-state batteries are projected to have life cycles longer than the current.

Two to three years that we're getting in batteries today, there are several categories of solid-state batteries each of.

Which uses a different material for the electrolyte as we're still dealing with an emerging technology.

Researchers are still coming to grips with what type of solid-state electrolyte is best used for different product categories.

Pro-low geom uses fl cb this is the only lithium chemical battery that adopts a flexible printed circuit.

This makes it suitable for wearables or anything else that requires flexibility or a unique battery shape.

Since it can be cut while charging it, makes it safe for people to wear.

Researchers released another video of their battery being cut in half and charging a phone for 24 hours.

The more battery you cut away the lower the battery's capacity.

So we're still waiting for this technology to find at home.

It seemed very simple, the wearable market was going to grow and it is.

But we have yet to see pro-low gm appear in mainstream products.

Frustratingly the area of our electronics is the one component that has yet to see a significant improvement processors.

Displays and foreign factors have all taken dramatic leaps forward but the

battery only improves a few percent a year.

And the improvements to daily battery life come primarily from the cpu and display improving their power consumption not from the battery itself.

We're hoping that this will be the year that solid-state batteries finally find a home in wearables.

But they're not the only game in town and maybe that's why they haven't caught on hydrogen fuel.

Cells are the electric-vehicle battery of choice in japan.

There's only a few countries in the world that are all in our hydrogen power and japan is one of them.

Meanwhile aqua batteries blue battery stores electricity using only water and table salt.

This is a radically new way to store energy and it's environmentally friendly.

Nanowires are hoping to be the base of a battery that never dies.

Now why is a thousands of times thinner than a human hair and made of gold.

For suspended and electrolyte gel to avoid snapping while charging.

Copper foam substrate is another version of the solid-state battery though.

Its 3d structure allows for a more efficient and less than linear transfer of energy over the air charging is also possible.

Beam it uses ultrasound to transmit electricity power is turned into sound

waves.

Inaudible to humans and animals and then transmitted and converted back.

Upon reaching the device but graphene is truly one of those technologies to get excited about.

It's 200 times stronger than steel, it's the thinnest material on earth, it's extremely conductive transparent, and it's even won a nobel prize.

Samsung in november 2017 revealed that it had developed the technology based on a graphene ball.

This could potentially boost its better capacity by 45% an increased charging speed fivefold.

Their goal is to have a graphene based power unit charge in only 12 minutes.

We've actually tested out a graphene battery pack, it went from zero to five thousand milliamperes in only twelve point five minutes.

Graphene also has the ability to be transparent.

So we could see a truly transparent smartphone in the future.

Graphene has the potential to change the way speakers are made.

They contend seawater into drinking water revolutionized.

Stem-cell research changed low-light photography, prevent building collapse by being built into structures.

To show structural defects and electric vehicles aren't discounting this

technology either.

Lithium-ion batteries aren't going anywhere, they're gonna be the battery found in our smartphone, laptop for at least the next five years.

But the key to new form factors is being able to power them from new sources.

We're gonna be tracking battery technology quite closely.

Because we see it as an integral part of how we change our mobility

