BYTE QUEST

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Byte Quest is the article published by the CSE dept of Vasavi College of Engineering regarding the latest innovative Technologies and Software that have been emerged in the competitive world. The motto of this article is to update the people regarding the improvement in technology. The article is designed by the active participation of students under the guidance of faculty coordinators.

- Good ,bad or indifferent if you are not investing in new technology , you are going to be left behind.

  -Philip Green

- Once a new technology rolls over you, if you're not part of the steamroller, you're part of the road.

  -Stewart Brand.

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LIGHT CHANGING THE FUTURE OF ELECTRONICS FOREVER

Moore's Law, which is not a law but more an axiom or observation effectively suggests that the electronic devices double in speed and capability about every two years. Transistors are the fundamental unit that drives all the electronic gadgets. As they get smaller, they also get faster and consume less electricity to operate. If there is a limit to how tiny they can get, we might reach a point at which we can no longer continue to make smaller, more powerful, more efficient devices.

At the present, companies like Intel are mass-producing transistors 14 nanometres across – just 14 times wider than DNA molecules. They're made of silicon. Silicon's atomic size is about 0.2 nanometres. Transistors use electrical signals to communicate. But if we could use light, made up of photons, instead of electricity, we could make transistors even faster.

In silicon, the most efficient wavelength for photons is 1.3 micrometres.

But electrons in silicon are even smaller – with wavelengths 50 to 1,000 times shorter than photons.

First, a photonic chip needs only a few light sources, generating photons that can then be directed around the chip with very small lenses and mirrors.

And second, light is much faster than electrons. On average photons can travel about 20 times faster than electrons in a chip. That means computers that are 20 times faster, a speed increase that would take about 15 years to achieve with current technology.

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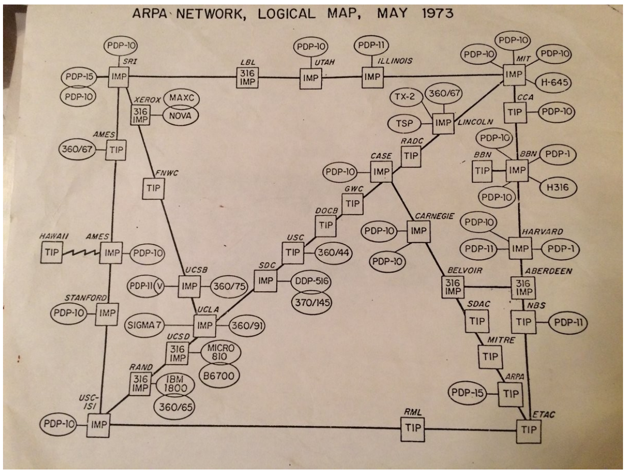
MAP OF ENTIRE INTERNET IN 1973 FOUND

A map of the entire internet as it was in May 1973 has been found among a bunch of old papers from the Carnegie Mellon School of Computer Science in Pittsburgh. Back then, the World Wide Web was known as the ARPANET, and consisted of just 42 computer hosts connected to 36 nodes spread across the US.



Each of the squares represent the nodes - or basic routers - which in the early 1970s were being added to the ARPANET at a rate of one per month. The ovals represent each of the hosts.

Established in the 1960s, the ARPANET was never meant to be the sprawling, open access, meme factory it is today.

By 1971, users were able to transfer data by dialling into a network through an individual computer terminal.

It wasn't until 20 December 1990, that Tim Berners-Lee, a scientist at the CERN research facility in Switzerland, turned on the world's first website, hosted by the World Wide Web.

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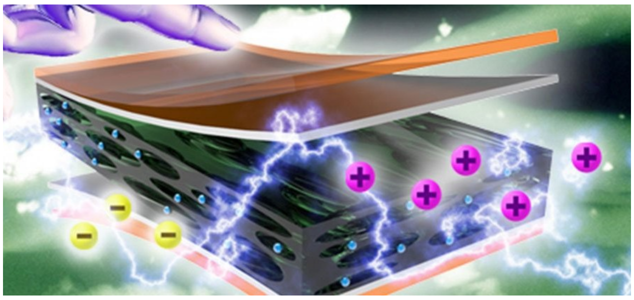
MATERIAL GENERATING ELECTRICITY BY TOUCHING IT



Scientists have developed a flexible, film-like material that generates electrical energy when touched, meaning devices like smartphones and tablets could one day be powered simply by people using them.

The film is known as a nanogenerator, in which energy is produced by a small-scale physical change, such as the tap or swipe of a finger.

In this case, the device works on the principle of piezoelectricity, where an electric charge accumulates in response to applied mechanical stress. What makes this possible is the interaction between the substances that make up the film.

The core structure is a silicon wafer, which is then layered with thin sheets of other materials, including silver, polyimide, and polypropylene ferroelectret, which serves as the active material in the device.

While it's true that none of those devices require much power, it's a promising start to a wholly new kind of piezoelectric generator – especially given that it includes an amazing ability to multiply its output when folded.

In testing, a hand-sized sheet of the material was able to generate about 50 volts, but the researchers acknowledge they currently have no way to create a stable current from the material.

They're also looking into the possibility of technology that can transmit the current wirelessly, so the charge generated by your footsteps could power your Bluetooth headphones.

It may be a while, of course, before we see this technology in our own devices, but if it does hit, it will finally give us a way of repurposing the huge amounts of energy our bodies currently lose when we move around, walk, and even just make gestures with our hands.

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