

## POWER BATTERY THAT LASTS FOR 30 YEARS

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Your next laptop could have a continuous power battery that lasts for 30 years without a single recharge thanks to work being funded by the U.S. Air Force Research Laboratory. The breakthrough beta voltaic power cells are constructed from semiconductors and use radioisotopes as the energy source. As the radioactive material decays it emits beta particles that transform into electric power capable of fueling an electrical device like a laptop for years.

Although beta voltaic batteries sound Nuclear they're not, they neither use fission/fusion or chemical processes to produce energy and so (do not produce any radioactive or hazardous waste). Beta voltaic generates power when an electron strikes a particular interface between two layers of material. The Process uses beta electron emissions that occur when a neutron decays into a proton which causes a forward bias in the semiconductor. This makes the beta voltaic cell a forward bias diode of sorts, similar in some respects to a photovoltaic (solar) cell. Electrons scatter out of their normal orbits in the semiconductor and into the circuit creating a usable electric current.

The profile of the batteries can be quite small and thin, a porous silicon material is used to collect the hydrogen isotope tritium which is generated in the process. The reaction is non-thermal which means laptops and other small devices like mobile phones will run much cooler than with traditional lithium-ion power batteries. The reason the battery lasts so long is that neutron beta-decay into protons is the world's most concentrated source of electricity, truly demonstrating Einstein's theory  $E=MC^2$ .

The best part about these cells are when they eventually run out of power they are totally inert and non-toxic, so environmentalists need not fear these high tech scientific wonder batteries. If all goes well plans are for these cells to reach store shelves in about 2 to 3 years.

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