Battery types history

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History of the battery. A voltaic pile, the first chemical battery. Batteries provided the primary source of electricity before the development of electric generators and electrical grids around the end of the 19th century. Successive improvements in battery technology facilitated major electrical advances, from early scientific studies to the ...

Batteries: Types and History A battery converts chemical energy into electrical energy. The battery was the first device developed to power electrical devices, only later on in the mid 1800"s did the dynamo and generator take over as a primary power source. Batteries still occupy an indispensable role everywhere in our lives.

Timeline of Battery History. 1748 -- Benjamin Franklin first coined the term "battery" to describe an array of charged glass plates. 1780 to 1786 -- Luigi Galvani demonstrated what we now understand to be the electrical basis of nerve impulses and provided the cornerstone of research for later inventors like Volta to create batteries. 1800 ...

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Basic construction: A battery is made of two or more cells. Each cell is composed of two different materials with an electrolyte in between. Early engineers discovered that with the right materials, negatively charged ions are attracted to the cathode (-), meanwhile positively charged ions are attracted to the anode(+) (the other electrode). There are many types of batteries, see our history section for more on how a few notable examples work. 12 minute video description of basic battery chemistry > Video on building a Aluminum/Carbon battery at home >

An engineer with a background in electrochemistry or nanotechnology can work on improving batteries and breaking established barriers to improvement. Improving even one angle of performance such as: energy density, low temperature performance, energy storage duration, recharge speed, shape, movement to use of less toxic or less expensive material can create significant changes to our world. For example the hybrid and fully electric automobile has existed for a century, but it was better batteries that allowed the first mainstream use of EVs in the 1990s.

Zinc Chloride Zinc Carbon Alkaline Oxy nickel hydroxide Lithium Copper Oxide Lithium Iron Disulfide Lithium Iron sulfide Lithium Manganese Dioxide Lithium Copper oxyphosphate Lithium Silver oxide+vanadium Lithium Silver chromate Lithium Carbon monofluoride pentoxide (SVO) Li-I2 Li-CuO

Li-CuS

Li-MnO2 (Li-Mn, "CR") Thionyl chloride Li-SOCl2,BrCl, Li-BCX Sulfuryl chloride Li-SO2 Li-PbCuS Li-Bi2Pb2O5 Li-V2O5 Li-Bi2O3 Li-CoO2 Mercury Oxide Zinc-air Silver Oxide Plutonium batteries and other nuclear batteries

NiCd or NiCad Nickel-cadmium 1899 Lead Acid 1859 NiMH NiZn Alkaline (some are rechargeable) Lithium-ion Li-ion Lithium-ion polymer Lithium titanium oxide Lithium iron-phosphate Batteries Lithium iron magnesium phosphate Nickel-iron Batteries (NiFe) NIH2 Ni-zinc LiFePO4 Li sulfur Li titanate Thin film Li ZnBr V redox 10 NaS Molten salt Silver zinc (Ag-zinc)

Volta"s battery quickly captured the attention of the world. Researchers from Russia to the US began experimenting with versions of his battery to conduct experiments. Electroplating, separation of elements for scientific study, electric lighting, and electromagnetism studies all advanced rapidly thanks to Volta"s pile. It was called a "pile" because additional zinc/copper units could be stacked onto the device to increase power. Even today latin languages use the word "pila" to mean battery.

The Grenet Cell was an important step in battery history and was used for over 60 years. This wet cell was powerful and reliable. It was filled with acid and could be reused. By the 1880s units could last months or years without a refilling, although for some uses it needed refilling every few weeks. Thomas Edison used Grenet Cells for his experiments, medical professionals also used the cell to do everything from powering tools at hospitals to experimentation on patients. The cell came in various sizes, the flasks could also be placed in series to generate more power.

The end of the Grenet Cell came from its weaknesses which included the annoyance of refilling it, weight, and the fact that it could spill. The rubber sealed board (hydrostat) would shrink with time and enable leaks to happen out the top. Like many batteries at the time it was made of glass and while it was built with thick glass, it could still shatter.