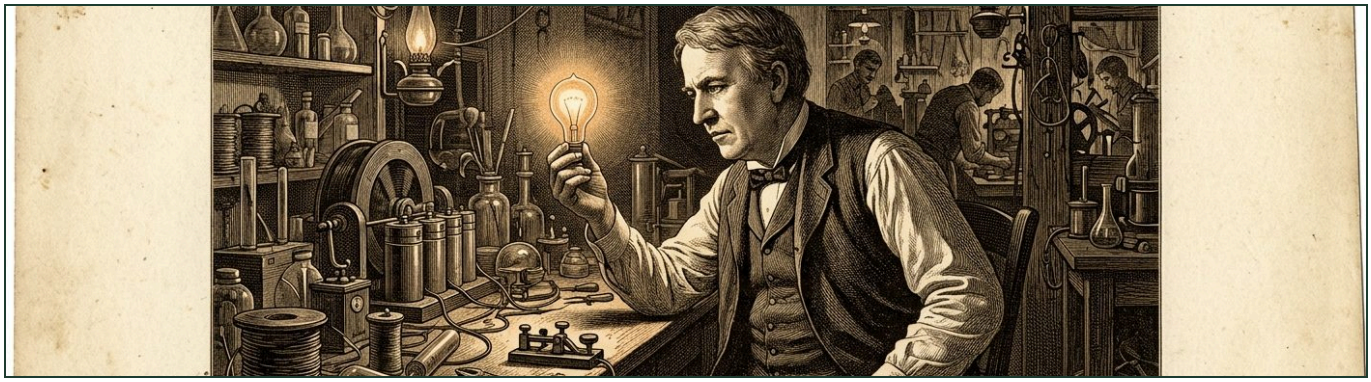


1752 – 1947

History of Electricity Timeline

The history of electricity is the story of how humans went from kite-flying in thunderstorms to lighting cities, building power grids, and inventing the transistor — the tiny device that makes every computer and smartphone possible.

1752 Franklin's Lightning Experiment

Benjamin Franklin flies a kite with a metal key attached during a thunderstorm, drawing an electric spark from the sky and proving that lightning is electricity — a natural phenomenon, not a supernatural one.

> **Why it mattered:** *Franklin's experiment demolished the idea that lightning was divine punishment and showed it was electricity — enabling the invention of the lightning rod and proving that electricity was a fundamental natural force that could be studied and harnessed.*

1800 Volta Invents the Battery

Italian physicist Alessandro Volta invents the first battery — the 'voltaic pile,' a stack of zinc and copper discs separated by brine-soaked cloth — creating the first sustained, reliable source of electric current.

> **Why it mattered:** *Before Volta's battery, scientists could only study electricity in brief static sparks; the battery made continuous current possible for the first time, giving researchers a practical tool and enabling all the discoveries that followed.*

1820 Electromagnetism Discovered

Danish physicist Hans Christian Ørsted notices that an electric current deflects a nearby compass needle — proving that electricity and magnetism are not separate phenomena but two faces of the same force.

> **Why it mattered:** *Ørsted's discovery launched the field of electromagnetism and directly inspired Faraday, Maxwell, and others; it eventually led to the understanding that light itself is an electromagnetic wave — unifying optics, electricity, and magnetism into a single framework.*

1831 Faraday Invents the Electric Generator

Michael Faraday demonstrates electromagnetic induction — showing that a moving magnet generates an electric current in a nearby wire — and builds the world's first simple electric generator and motor.

> **Why it mattered:** *Faraday's discovery is arguably the most important in the history of electricity: the ability to generate current by moving a magnet (turning a turbine) is how almost all the world's electricity is produced today, from coal plants to hydroelectric dams to wind turbines.*

1879 Edison's Practical Light Bulb

Thomas Edison, after testing thousands of materials, develops a practical incandescent light bulb using a carbonized cotton thread that burns for about 40 hours — demonstrating it publicly on New Year's Eve 1879; he later improved it with a bamboo filament lasting over 1,200 hours.

> **Why it mattered:** *Edison's light bulb transformed human life by extending the productive day beyond sunset — but its deeper significance was that it created massive demand for a reliable electrical supply, which Edison then set out to build.*

History of Electricity Timeline *continued*

1882

First Commercial Power Grid

Edison opens the Pearl Street Station in New York City — the world's first commercial electrical power station — supplying electricity to 85 customers and 400 lamps in a square-mile area of lower Manhattan.

> **Why it mattered:** *Pearl Street proved that electricity could be generated centrally and distributed to homes and businesses at scale — the model that powers every city in the world today; within two years Edison's system served over 500 customers.*

1888–95

The War of Currents: AC Defeats DC

Nikola Tesla develops practical alternating current (AC) motors and generators; George Westinghouse champions AC against Thomas Edison's direct current (DC) in a fierce public battle; AC wins decisively when the Niagara Falls power plant opens in 1895.

> **Why it mattered:** *AC won because it could be transmitted hundreds of miles at high voltage and stepped down cheaply with transformers — DC could only travel about a mile from a generator; the AC victory set the design of the entire world's electrical infrastructure.*

1897

Discovery of the Electron

British physicist J.J. Thomson discovers the electron — the first subatomic particle ever identified — proving that atoms have internal structure and that electricity is a flow of these tiny charged particles.

> **Why it mattered:** *The electron explained what electricity actually IS — a flow of electrons through a conductor — and opened the door to electronics, vacuum tubes, radio, and eventually the transistors and computer chips that define the modern world.*

1947

Transistor Invented

Bell Labs scientists John Bardeen, Walter Brattain, and William Shockley invent the transistor — a tiny solid-state switch that amplifies or controls electric current without the heat, bulk, and fragility of vacuum tubes.

> **Why it mattered:** *The transistor is arguably the most consequential invention of the 20th century: replacing vacuum tubes with something tiny, cool, and reliable made possible the integrated circuit, the microprocessor, and every computer, smartphone, and electronic device — each containing billions of transistors.*