

Electronics Innovations Timeline



Peter Peregrinus wrote about his experiments was the first to use the term 'magnetic pole'.

1200-1500



As early as 600 BC people knew that a piece of **amber** would attract light objects when rubbed with fur. We now know that this is caused by static electricity.







he word 'electricity' comes from amber, and it was first used by Villiam Gilbert, physician to Quee lizabeth I, in his book De Magnete



1745 cientists adapted glass

jars to store the electric charge produced by a friction machine. These 'Leyden Jars', named after the place where vere the first capacitors.



first battery. This 'Voltaic Pile' was made up of alternate pieces of silver and zinc separated by card or leather soaked in brine. A current flowed when the ends of the pile were connected by a conductor.



Alessandro Volta built the



lichael Faraday made two huge steps forward. He established the principle of the electric motor: simply a wire which rotated around a magnet when a current flowed. Secondly, he scovered that a changing magnetic field will generate an electric current in a coil of wire. This is the principle ehind modern electricity generators.



Arc lamp carbon rods

Scientists developed the first ractical arc lamps. A bright, nite light was created wher electric sparks jumped across a small gap between the end: of two carbon rods, making the rods white hot. London lit by these lamps in 1878.



Thomas Edison developed the phonograph to record and play back voice messages, using a tin cylinder and a stylus. This was later developed into the gramophone.



(Street lighting)

lalming installed the first public electricity supply, for street lighting and homes. At first, the power came from a water wheel on the River Wey.



Early electric kettle and iron

Electrical appliances such as electric irons, kettles, fans water heaters and cookers appeared, improving the



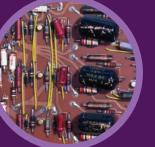
common in homes after the Second World War. Early sets were black and white only colour television did not beco common until the mid 1960s. German technician Paul Nipko invented the first television set in 1884 but his simple mechanical design doesn't loc anything like the large flat screen digital televisions of

receiver, type 306T, 1956

LATE 1940s

Electronic television sets

started to become more



Electrical Engineer Jack Kilby created the first integrated circuit (IC) whilst working at Texas nstruments. This paved he way for almost every that we use today!



IBM PC Model 5150 with printer, 1981

IBM launched the first 'personal computer' (PC) his was quickly followed by Apple's Macintosh, which

featured a graphical user

interface and a mouse.



Mobile phones became int

multiuse computing device

complete with messaging

cameras, internet access an

application software (apps)

hese devices became kno

as **smartphones**.

Lee invented the World Wide Web and developed the first webpage. 'front end' for the internet (invented earlier in the decade) so it could be used in homes and businesses

Tim Berners-Lee, pionee of the World Wide Web

British computer



mobile networks becan o the internet at speeds u to 100 x faster than 4G.



Otto Von Guericke built a friction machine for producing static electricity.

Otto Von Guericke



iigi Galvani accidentally discovere that **electricity** could make a dissected frog's leg twitch, but he wrongly concluded that the lectricity was coming from the frog

Luigi Galvani's experiment



Oersted discovered that an electric current can hange the direction of a compass needle, sho the link between electricity and magnetism.

Electricity and magnetism



William Sturgeon built the first practical electric motor based on Faraday's



Alexander Graham Bell got

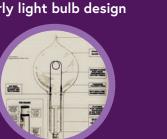
he first patent for an **electric** Early electric telephone



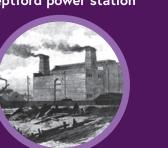
Light bulbs, in which an electric current makes a filament glow, began to appear. experimented with various designs.

Early light bulb design





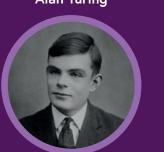
Sebastian de Ferranti designed the first largescale, out-of-town power station at Deptford. High voltage power lines distributed the electricity efficiently over a larger area.



1900s

Alan Turing completed the **first computer** able to store a program - the Manchester Mark 1. This paved the way for the Ferranti Mark 1, the world's first general purpose ectronic computer available in the shops

Alan Turing





the Fender Telecaster. It was designed so that different components could be produce individually, with the finished product assembled on a production line.



ass-produced solid body electric guitar:

Fender Telecaster electric guitar



Motorola demonstrated the first handheld mobile phone Motorola StarTAC

Compact discs (CDs



ecordable 'compact discs'

(CDs) became available for

the first time.

2000s

o everyday objects, such as washing Shuji Nakamura of Nichia Corporation machines, door security systems and demonstrated the first high brightness LED. This resulted in the development home heating controllers. It allows people to control these devices directly of white LEDs suitable for home from, for example, their mobile phones. lighting. LEDs use far less energy tha traditional filament light bulbs.

The Internet of Things



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