**Sir Joseph Wilson Swan** [FRS](https://en.wikipedia.org/wiki/Fellow_of_the_Royal_Society) (31 October 1828 – 27 May 1914) was an English physicist, chemist, and inventor. He is known as an independent early developer of a successful [incandescent light bulb](https://en.wikipedia.org/wiki/Incandescent_light_bulb), and is the person responsible for developing and supplying the first incandescent lights used to illuminate homes and public buildings, including the [Savoy Theatre](https://en.wikipedia.org/wiki/Savoy_Theatre), London, in 1881.[[1]](https://en.wikipedia.org/wiki/Joseph_Swan#cite_note-1)[[2]](https://en.wikipedia.org/wiki/Joseph_Swan#cite_note-CassellsChronology-2)

**Thomas Alva Edison** (February 11, 1847 – October 18, 1931) was an American inventor and businessman who has been described as America's greatest inventor.[[1]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-1)[[2]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-Sproule1-2)[[3]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-SoNJ1-3) He developed many devices in fields such as [electric power generation](https://en.wikipedia.org/wiki/Electricity_generation), [mass communication](https://en.wikipedia.org/wiki/Mass_communication), [sound recording](https://en.wikipedia.org/wiki/Sound_recording), and motion pictures.[[4]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-coned1-4) These inventions, which include the [phonograph](https://en.wikipedia.org/wiki/Phonograph), the [motion picture camera](https://en.wikipedia.org/wiki/Movie_camera), and the long-lasting, practical electric [light bulb](https://en.wikipedia.org/wiki/Incandescent_light_bulb), have had a widespread impact on the modern [industrialized world](https://en.wikipedia.org/wiki/Industrial_society).[[5]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-Wizard-5) He was one of the first inventors to apply the principles of organized science and teamwork to the process of invention, working with many researchers and employees. He established the first industrial [research laboratory](https://en.wikipedia.org/wiki/Research_laboratory" \o "Research laboratory).[[6]](https://en.wikipedia.org/wiki/Thomas_Edison#cite_note-Walsh-6)

**Max Karl Ernst Ludwig Planck**, [ForMemRS](https://en.wikipedia.org/wiki/Royal_Society)[[1]](https://en.wikipedia.org/wiki/Max_Planck#cite_note-frs-1) (German: [[ˈplaŋk]](https://en.wikipedia.org/wiki/Help:IPA/Standard_German);[[2]](https://en.wikipedia.org/wiki/Max_Planck#cite_note-2) English: [/ˈplæŋk/](https://en.wikipedia.org/wiki/Help:IPA/English);[[3]](https://en.wikipedia.org/wiki/Max_Planck#cite_note-3) 23 April 1858 – 4 October 1947) was a German [theoretical physicist](https://en.wikipedia.org/wiki/Theoretical_physicist) whose discovery of [energy quanta](https://en.wikipedia.org/wiki/Quantum_mechanics) won him the [Nobel Prize in Physics](https://en.wikipedia.org/wiki/Nobel_Prize_in_Physics) in 1918.[[4]](https://en.wikipedia.org/wiki/Max_Planck#cite_note-4)

Planck made many contributions to theoretical physics, but his fame as a physicist rests primarily on his role as the originator of [quantum theory](https://en.wikipedia.org/wiki/Quantum_mechanics),[[5]](https://en.wikipedia.org/wiki/Max_Planck#cite_note-5) which revolutionized human understanding of atomic and subatomic processes. In 1948, the German scientific institution the [Kaiser Wilhelm Society](https://en.wikipedia.org/wiki/Kaiser_Wilhelm_Society) (of which Planck was twice president) was renamed the [Max Planck Society](https://en.wikipedia.org/wiki/Max_Planck_Society) (MPS). The MPS now includes 83 institutions representing a wide range of scientific directions.

**Sir Joseph John Thomson** [OM](https://en.wikipedia.org/wiki/Member_of_the_Order_of_Merit) [PRS](https://en.wikipedia.org/wiki/President_of_the_Royal_Society)[[1]](https://en.wikipedia.org/wiki/J._J._Thomson#cite_note-frs-1) (18 December 1856 – 30 August 1940) was an English [physicist](https://en.wikipedia.org/wiki/Physicist) and [Nobel Laureate in Physics](https://en.wikipedia.org/wiki/Nobel_Prize_in_Physics), credited with the discovery and identification of the [electron](https://en.wikipedia.org/wiki/Electron), the first [subatomic particle](https://en.wikipedia.org/wiki/Subatomic_particle) to be discovered.

In 1897, Thomson showed that [cathode rays](https://en.wikipedia.org/wiki/Cathode_ray) were composed of previously unknown negatively charged particles (now called electrons), which he calculated must have bodies much smaller than atoms and a very large [charge-to-mass ratio](https://en.wikipedia.org/wiki/Charge-to-mass_ratio).[[2]](https://en.wikipedia.org/wiki/J._J._Thomson#cite_note-Profile-2) Thomson is also credited with finding the first evidence for [isotopes](https://en.wikipedia.org/wiki/Isotope) of a stable (non-radioactive) element in 1913, as part of his exploration into the composition of [canal rays](https://en.wikipedia.org/wiki/Canal_ray) (positive ions). His experiments to determine the nature of positively charged particles, with [Francis William Aston](https://en.wikipedia.org/wiki/Francis_William_Aston), were the first use of [mass spectrometry](https://en.wikipedia.org/wiki/Mass_spectrometry) and led to the development of the mass spectrograph.[[2]](https://en.wikipedia.org/wiki/J._J._Thomson#cite_note-Profile-2)[[3]](https://en.wikipedia.org/wiki/J._J._Thomson#cite_note-Jones-3)

**Thomas Young** [FRS](https://en.wikipedia.org/wiki/Fellow_of_the_Royal_Society) (13 June 1773 – 10 May 1829) was a British [polymath](https://en.wikipedia.org/wiki/Polymath) and [physician](https://en.wikipedia.org/wiki/Physician). Young made notable scientific contributions to the fields of [vision](https://en.wikipedia.org/wiki/Visual_perception), light, [solid mechanics](https://en.wikipedia.org/wiki/Solid_mechanics), energy, [physiology](https://en.wikipedia.org/wiki/Physiology), [language](https://en.wikipedia.org/wiki/Language), [musical harmony](https://en.wikipedia.org/wiki/Harmony), and [Egyptology](https://en.wikipedia.org/wiki/Egyptology). He "made a number of original and insightful innovations"[[1]](https://en.wikipedia.org/wiki/Thomas_Young_(scientist)#cite_note-1) in the decipherment of Egyptian hieroglyphs (specifically the [Rosetta Stone](https://en.wikipedia.org/wiki/Rosetta_Stone)) before [Jean-François Champollion](https://en.wikipedia.org/wiki/Jean-Fran%C3%A7ois_Champollion) eventually expanded on his work. He was mentioned by, among others, [William Herschel](https://en.wikipedia.org/wiki/William_Herschel), [Hermann von Helmholtz](https://en.wikipedia.org/wiki/Hermann_von_Helmholtz), [James Clerk Maxwell](https://en.wikipedia.org/wiki/James_Clerk_Maxwell), and [Albert Einstein](https://en.wikipedia.org/wiki/Albert_Einstein). Young has been described as "[The Last Man Who Knew Everything](https://en.wikipedia.org/wiki/The_Last_Man_Who_Knew_Everything)".[[2]](https://en.wikipedia.org/wiki/Thomas_Young_(scientist)#cite_note-:0-2)

Young is credited with establishing the [wave theory of light](https://en.wikipedia.org/wiki/Wave_theory_of_light), influenced in his experiments by those of [Isaac Newton](https://en.wikipedia.org/wiki/Isaac_Newton). His work was subsequently supported by the work of [Augustin-Jean Fresnel](https://en.wikipedia.org/wiki/Augustin-Jean_Fresnel).

**Eadweard Muybridge** ([/ˌɛdwərd ˈmaɪbrɪdʒ/](https://en.wikipedia.org/wiki/Help:IPA/English); 9 April 1830 – 8 May 1904, born **Edward James Muggeridge**) was an English-American photographer important for his pioneering work in photographic studies of [motion](https://en.wikipedia.org/wiki/Motion_(physics)), and early work in motion-picture [projection](https://en.wikipedia.org/wiki/Movie_projector). He adopted the first name Eadweard as the original [Anglo-Saxon form](https://en.wikipedia.org/wiki/Anglo-Saxon_name) of Edward, and the surname Muybridge, believing it to be similarly archaic.[[1]](https://en.wikipedia.org/wiki/Eadweard_Muybridge#cite_note-1)

**John Dalton** [FRS](https://en.wikipedia.org/wiki/Fellow_of_the_Royal_Society) ([/ˈdɔːltən/](https://en.wikipedia.org/wiki/Help:IPA/English); 6 September 1766 – 27 July 1844) was an English [chemist](https://en.wikipedia.org/wiki/Chemist), [physicist](https://en.wikipedia.org/wiki/Physicist), and [meteorologist](https://en.wikipedia.org/wiki/Meteorologist). He is best known for introducing the [atomic theory](https://en.wikipedia.org/wiki/Atomic_theory) into chemistry, and for his research into [colour blindness](https://en.wikipedia.org/wiki/Color_blindness" \o "Color blindness), sometimes referred to as Daltonism in his honour.

**James Clerk Maxwell** [FRS](https://en.wikipedia.org/wiki/Fellow_of_the_Royal_Society) [FRSE](https://en.wikipedia.org/wiki/Fellow_of_the_Royal_Society_of_Edinburgh) (13 June 1831 – 5 November 1879) was a Scottish[[2]](https://en.wikipedia.org/wiki/James_Clerk_Maxwell#cite_note-2)[[3]](https://en.wikipedia.org/wiki/James_Clerk_Maxwell#cite_note-3) [scientist](https://en.wikipedia.org/wiki/Scientist) in the field of [mathematical physics](https://en.wikipedia.org/wiki/Mathematical_physics).[[4]](https://en.wikipedia.org/wiki/James_Clerk_Maxwell#cite_note-4) His most notable achievement was to formulate the [classical theory](https://en.wikipedia.org/wiki/Classical_theory) of [electromagnetic radiation](https://en.wikipedia.org/wiki/Electromagnetic_radiation), bringing together for the first time electricity, [magnetism](https://en.wikipedia.org/wiki/Magnetism), and light as different manifestations of the same phenomenon. [Maxwell's equations](https://en.wikipedia.org/wiki/Maxwell%27s_equations) for electromagnetism have been called the "second great unification in physics" [[5]](https://en.wikipedia.org/wiki/James_Clerk_Maxwell#cite_note-5) after the first one realised by [Isaac Newton](https://en.wikipedia.org/wiki/Isaac_Newton).