

## Scientists



**Albert Einstein** 14 March 1879 – 18 April 1955) was a German-born theoretical physicist who developed the general theory of relativity, one of the two pillars of modern physics. While best known for his mass–energy equivalence formula  $E = mc^2$ . He received the 1921 Nobel Prize in Physics "for his services to theoretical physics, and especially for his discovery of the law of the photoelectric effect"



**Alexander Bell** was born in Edinburgh, Scotland on March 3, 1847(March 3, 1847 – August 2, 1922). He was an eminent scientist, inventor, engineer and innovator who is credited with inventing the first practical **telephone**. Both his mother and wife were deaf, profoundly influencing Bell's life's work. His research on hearing and speech further led him to experiment with hearing devices which eventually culminated in Bell being awarded the first US patent for the telephone in 1876. Many other inventions marked Bell's later life, including groundbreaking work in optical telecommunications, hydrofoils and aeronautics.



**Alfred Bernhard Nobel** (21 October 1833 – 10 December 1896) was a Swedish chemist, engineer, innovator, and armaments manufacturer. He was the inventor of **dynamite**.



**Antony van Leeuwenhoek** was born in Delft, Holland. He (October 24, 1632 – August 26, 1723) was a Dutch tradesman and scientist. He is commonly known as "the Father of Microbiology", and considered to be the first microbiologist. He is best known for his work on the improvement of the **microscope** and for his contributions towards the establishment of microbiology.



**Avul Pakir Jainulabdeen Abdul Kalam** born 15 October 1931, usually referred to as **Dr. A. P. J. Abdul Kalam**, is an Indianscientist and administrator who served as the 11th President of India from 2002 to 2007. Kalam was born and raised in Rameswaram, Tamil Nadu, studied physics at the St. Joseph's College, Tiruchirappalli, and aerospace engineering at the Madras Institute of Technology (MIT), Chennai.

Before his term as President, he worked as an aerospace engineer with Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO). Kalam is popularly known as the *Missile Man of India* for his work on the development of **ballistic missile and launch vehicle technology**. He played a pivotal organizational, technical and political role in India's *Pokhran-II* nuclear tests in 1998, the first since the original nuclear test by India in 1974. He just carried on the works of Homi J. Bhabha and Vikram Sarabhai.



**Sunita Lyn Williams** (born September 19, 1965) is an American astronaut and a United States Navy officer with paternal Indian and maternal Slovene roots. She holds the records for longest single space flight by a woman (192 days), total spacewalks by a woman (seven), and **most spacewalk time** for a woman (50 hours, 40 minutes).



**Aryabhata** (476–550 CE) was the first in the line of great mathematician-astronomers from the classical age of **Indian mathematics and Indian astronomy**. His works include the *Āryabhaṭīya* (499 CE, when he was 23 years old) and the *Arya-siddhanta*. The works of Aryabhata dealt with mainly mathematics and astronomy. He also worked on the approximation for pi.



**Birbal Sahni** FRS (14 November 1891 – 10 April 1949) was an Indian paleobotanist who studied the fossils of the Indian subcontinent, was also a geologist who took an interest in archaeology. He founded the Birbal Sahni Institute of **Palaeobotany** in Lucknow, India. His greatest contributions lie in the study of botany of the plants of India as well as paleobotany. Apart from writing numerous influential papers on these topics he also served as the President of the National Academy of Sciences, India and as an Honorary President of the International Botanical Congress, Stockholm. He died on 10 April 1949.



**Sir Chandrasekhara Venkata Rāman**, FRS (7 November 1888 – 21 November 1970) was an Indian physicist whose work was influential in the growth of science in India. He was the recipient of the Nobel Prize for Physics in 1930 for the discovery that when light traverses a transparent material, some of the **light** that is deflected changes in wavelength. This phenomenon is now called Raman scattering and is the result of the **Raman effect**.



**Carl Linnaeus** (23 May 1707 – 10 January 1778), was a Swedish botanist, physician, and zoologist, who laid the foundations for the modern scheme of binomial nomenclature. He is known as the father of **modern taxonomy**, and is also considered one of the fathers of modern ecology. Many of his writings were in Latin, and his name is rendered in Latin as **Carolus Linnæus**.



**Charles Robert Darwin**, FRS (12 February 1809 – 19 April 1882) was an English naturalist. He established that all species of life have descended over time from common ancestors, and proposed the scientific theory that this branching pattern of **evolution** resulted from a process that he called natural selection, in which the struggle for existence has a similar effect to the artificial selection involved in selective breeding.



**Vikram Ambalal Sarabhai** (12 August 1919 – 30 December 1971) was an Indian physicist. He is considered to be "**Father of Indian space program**." The establishment of the Indian Space Research Organization (ISRO) was one of his greatest achievements. Dr. Homi Jehangir Bhabha, widely regarded as the father of India's nuclear science program, supported Dr. Sarabhai in setting up the first rocket launching station in India at Thumba near Thiruvananthapuram.



**Yellapragada Subbarao** యెల్లాప్రగడ సుబ్బారావు (12 January 1895 – 9 August 1948) was an Indian biochemist who discovered the function of **adenosine triphosphate** (ATP) as an energy source in the cell, and developed methotrexate for the treatment of cancer. Most of his career was spent in the United States. Despite his isolation of ATP, Subbarao was denied tenure at Harvard and remained without a green card throughout his life, though he would lead some of America's most important medical research during World War II.



**Edward Anthony Jenner**, FRS (17 May 1749 – 26 January 1823) was an English physician and scientist from Berkeley, Gloucestershire, who was the pioneer of **smallpox vaccine**. He is often called "**the father of immunology**", and his work is said to have "saved more lives than the work of any other man".



**Ernest Rutherford** FRS (30 August 1871 – 19 October 1937) was a New Zealand born physicist and chemist who became known as **the father of nuclear physics**. He is considered the greatest experimentalist since Michael Faraday (1791–1867). He discovered the concept of radioactive half-life, proved that radioactivity involved the transmutation of one chemical element to another, and also differentiated and named alpha and beta radiation. It is the basis for the Nobel Prize in Chemistry he was awarded in 1908.



**Francis Harry Compton Crick**, OM, FRS (8 June 1916 – 28 July 2004) was an English molecular biologist, biophysicist, and neuroscientist, and most noted for being a co-discoverer of the structure of the **DNA molecule** in 1953 together with James D. Watson. He, Watson, and Maurice Wilkins were jointly awarded the 1962 Nobel Prize for Physiology or Medicine "for their discoveries concerning the molecular structure of nucleic acids and its significance for information transfer in living material".



**Gregor Johann Mendel** (July 20, 1822<sup>[1]</sup> – January 6, 1884) was a German-speaking Silesian scientist and Augustinian friar who gained posthumous fame as the founder of the **new science of genetics**. Mendel demonstrated that the inheritance of certain traits in pea plants follows particular patterns, now referred to as the laws of Mendelian inheritance.



**Har Gobind Khorana** (January 9, 1922 – November 9, 2011) was born to Hindu parents in Raipur village in West Punjab. He was a biochemist who shared the 1968 Nobel Prize for Physiology or Medicine with Marshall W. Nirenberg and Robert W. Holley for research that helped to show how the **nucleotides in nucleic acids**, which carry the genetic code of the cell, control the cell's synthesis of proteins. Khorana and Nirenberg were also awarded the Louisa Gross Horwitz Prize from Columbia University in the same year.



**Homi Jehangir Bhabha**, FRS (30 October 1909 – 24 January 1966) was an Indian nuclear physicist, founding director, and professor of physics at the Tata Institute of Fundamental Research. Colloquially known as "**father of Indian nuclear programme**", Bhabha was the founding director of two well-known research institutions, namely the Tata Institute of Fundamental Research (TIFR) and the Trombay Atomic Energy Establishment (now named after him); both sites were the cornerstone of Indian development of nuclear weapons which Bhabha also supervised as its director.



**Sir Jagadish Chandra Bose**, (30 November 1858 – 23 November 1937) was a Bengali polymath, physicist, biologist, botanist, archaeologist, as well as an early writer of science fiction. He pioneered the investigation of radio and microwave optics, made very significant contributions to plant science, and laid the foundations of experimental science in the Indian subcontinent. IEEE named him one of the fathers of radio science. He is also considered the father of Bengali science fiction. He also invented the **crescograph**.



**James Dewey Watson** (born April 6, 1928), is an American molecular biologist, geneticist, and zoologist, best known as a co-discoverer of the **structure of DNA** in 1953 with Francis Crick. Watson, Crick, and Maurice Wilkins were awarded the 1962 Nobel Prize in Physiology or Medicine "for their discoveries concerning the molecular structure of nucleic acids and its significance for information transfer in living material".



**Jean-Baptiste Lamarck** (1 August 1744 – 18 December 1829) was a French naturalist. He was a soldier, biologist, academic, and an early proponent of the idea that **evolution** occurred and proceeded in accordance with natural laws. He gave the term biology a broader meaning by coining the term for special sciences, chemistry, meteorology, geology, and botany-zoology.



Louis Pasteur

**Louis Pasteur** (December 27, 1822 – September 28, 1895) was a French chemist and microbiologist who was one of the most important founders of **medical microbiology**. He is remembered for his remarkable breakthroughs in the causes and preventions of diseases. His discoveries reduced mortality from puerperal fever, and he created the first **vaccines for rabies and anthrax**. His experiments supported the germ theory of disease. He was best known to the general public for inventing a method to treat milk and wine in order to prevent it from causing sickness, a process that came to be called **pasteurization**.



Marie Curie

**Marie Curie** (7 November 1867 – 4 July 1934) was a Polish physicist and chemist, working mainly in France, who is famous for her pioneering research on **radioactivity**. She was the first woman to win a Nobel Prize, the only woman to win in two fields, and the only person to win in multiple sciences. Her achievements included a theory of **radioactivity** (a term that the Curies coined), techniques for isolating radioactive isotopes, and the discovery of two elements, **polonium and radium**.



Michael Faraday

**Michael Faraday**, FRS (22 September 1791 – 25 August 1867) was an English scientist who contributed to the fields of electromagnetism and electrochemistry. His main discoveries include those of **electromagnetic induction, diamagnetism and electrolysis**.



Mankombu Sambasivan Swaminathan

**Mankombu Sambasivan Swaminathan** (born 7 August 1925) is an Indian geneticist and international administrator, renowned for his leading role in India's "Green Revolution," a program under which high-yield varieties of wheat and rice seedlings were planted in the fields of poor farmers. Swaminathan is known as the "**Father of the Green Revolution in India**", for his leadership and success in introducing and further developing high-yielding varieties of wheat in India.



Niels Bohr

**Niels Henrik David Bohr** (7 October 1885 – 18 November 1962) was a Danish physicist who made foundational contributions to understanding **atomic structure and quantum mechanics**, for which he received the Nobel Prize in Physics in 1922. Bohr was also a philosopher and a promoter of scientific research.



Aristotle

**Aristotle** (384 BC – 322 BC) was a Greek philosopher and polymath, a student of Plato and teacher of Alexander the Great. His writings cover many subjects including **physics, metaphysics, poetry, theater, music, logic, rhetoric, linguistics, politics, government, ethics, biology, and zoology**. Together with Plato and Socrates (Plato's teacher), Aristotle is one of the most important founding figures in Western philosophy. Aristotle's writings were the first to create a comprehensive system of Western philosophy, encompassing ethics, aesthetics, logic, science, politics, and metaphysics.



Robert Hooke

**Robert Hooke** FRS (Isle of Wight, 18 July 1635 – London, 3 March 1703) was an English naturalist, architect and polymath. He discovered **Hooke's Law of elasticity**. He designed and ordered the making of **telescopes and microscopes**, and used both instruments. He reported on this work in a book called *Micrographia* in 1665. He was the first person to see **biological cells**. He made drawings of bodies in the Solar System, and made the first attempts to measure the distance of certain stars.



Robert Brown

**Robert Brown** FRSE FRS FLS MWS (21 December 1773 – 10 June 1858) was a Scottish botanist and palaeobotanist who made important contributions to botany largely through his pioneering use of the microscope. His contributions include one of the earliest detailed descriptions of **the cell nucleus** and **cytoplasmic streaming**



Sir Ronald Ross

**Sir Ronald Ross** KCB FRS (13 May 1857 – 16 September 1932) was a British doctor who received the Nobel Prize for Physiology or Medicine in 1902 for his work on malaria. His discovery of the **malarial parasite in the gastrointestinal tract of the *Anopheles mosquito*** led to the realization that malaria was transmitted by *Anopheles*, and laid the foundation for combating the disease.



Sálím Moizuddin Abdul Ali

**Sálím Moizuddin Abdul Ali** (November 12, 1896 – July 27, 1987) was an Indian ornithologist and naturalist. Known as the "**birdman of India**", Salim Ali was among the first Indians to conduct **systematic bird surveys** across India and his bird books helped develop ornithology. He was awarded India's second highest civilian honour, the Padma Vibhushan in 1976.



Sir Isaac Newton

**Sir Isaac Newton** (4 January 1643<sup>[1]</sup> – 31 March 1727) was an English physicist and mathematician. He is famous for his work on the **laws of motion, optics, gravity, and calculus**. In 1687, Newton published a book called the *Philosophiæ Naturalis Principia Mathematica* in which he presents his theory of universal gravitation and three laws of motion. Newton built the first practical reflecting telescope in 1668.



Sir Joseph John Thomson

**Sir Joseph John "J.J." Thomson**, OM, FRS (18 December 1856 – 30 August 1940) was a British physicist and Nobel laureate. He discovered the **electron and isotopes**, and invented the **mass spectrometer**. He was awarded the Nobel Prize in Physics in 1906 for his discovery of the electron and his work on the conduction of electricity in gases. John Joseph Thomson in 1893 said: "There is no other branch of physics which affords us so promising an opportunity of penetrating the secret of electricity."



Mokshagundam Vishveshwariah

**Mokshagundam Vishveshwariah**, KCIE, మోక్షగుండం విశ్వేశ్వరయ్య (15 September 1860 – 14 April 1962) was a notable Indian engineer, scholar, statesman and the Diwan of Mysore during 1912 to 1918. He was a recipient of the Indian Republic's highest honour, the Bharat Ratna, in 1955. Every year, 15 September is celebrated as Engineer's Day in India in his memory. He was the chief designer of the flood protection system for the city of Hyderabad as well as the chief engineer responsible for the construction of the Krishna Raja Sagara dam in Mysore. Though he belongs to a Family hailing from Prakasam Dist. in the state of Andhra Pradesh, He is equally revered a lot in the state of Karnataka.



Thomas Alva Edison

**Thomas Alva Edison** (February 11, 1847 – October 18, 1931) was an American inventor and businessman. He developed many devices that greatly influenced life around the world, including the **phonograph**, the **motion picture camera**, and a long-lasting, practical **electric light bulb**. Dubbed "The Wizard of Menlo Park", he was one of the first inventors to apply the principles of mass production and large-scale teamwork to the process of invention, and because of that, he is often credited with the creation of the first industrial research laboratory.