



ELSEVIER

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## September

## SEPTEMBER SCIENTIST

- 1** **Auer, Carl von Welsbach** (1 September 1858–4 August 1929), Austrian scientist. He discovered neodymium and praseodymium. In addition, in 1907, independently of G. Urban, he separated lutetium. To him we owe the discovery of mischmetal, a rare-earth metal alloy used as flint, and the discovery of the incandescent lamp or sleeve Auer used for lighting oil/gas. Later he became interested in the separation of radioactive elements.
- Edeleanu, Lazăr** (1 September 1862–7 April 1941), Romanian scientist. He is known for the selective refining process of oil fractions based on the specific solubilities of hydrocarbons in sulfur dioxide, known by the name of the Edeleanu process.
- Aston, Francis William** (1 September 1877–20 November 1945), English scientist. He perfected the device for determining the ratio between the charge and the electron mass and the resulting mass spectrometer, named in 1919. He is credited with the discovery of the isotopes of neon. In 1922, he was awarded the Nobel Prize in chemistry for his discoveries concerning the mass spectrometer, non-radioactive isotopes, and elements for the development of the rule of integers.
- Folkers, Karl August** (1 September 1906–7 December 1997), American scientist. He was involved in the isolation of vitamin B12.
- Glauber, Roy** (1 September 1925), American scientist. He is known for his contributions to the quantum theory of optical coherence, which earned him the Nobel Prize in physics in 2005.
- 2** **Ostwald, Friedrich Wilhelm** (2 September 1853–4 April 1932), Baltic German scientist. It was he who introduced the word “mole” in 1900. The laws of dilutions he discovered bear his name. He is particularly known for his work on catalysis and his contributions to the understanding of chemical equilibrium and reaction rates, which earned him the Nobel Prize in chemistry in 1909.
- Soddy, Frederick** (2 September 1877–22 September 1956), British scientist. He established, in collaboration with Rutherford, that radioactivity is due to atomic disintegration. With W. Ramsay, he managed to liquefy the emanation of thorium. He introduced the term isotope and discovered in 1910 that many atomic species are isotopes. He was the winner of the Nobel Prize in chemistry in 1921.
- 3** **Pregl, Fritz** (3 September 1869–13 December 1930), Austrian scientist. He was awarded the Nobel Prize in chemistry in 1923 due to his invention of the method for the microanalysis of organic substances, thus contributing to the improvement of the combustion process technique.
- Anderson, Carl David** (3 September 1905–11 January 1991), American scientist. He is known for his contribution to the discovery of the positron, which earned him the Nobel Prize in physics in 1936.
- Noyori, Ryōji** (3 September 1938), Japanese scientist. He was the co-winner of the Nobel Prize in chemistry in 2001 for his reference work on the chirality of catalyzed hydrogenation reactions, thereby resulting in the possibility of preparing pharmaceutical molecules.

- 4** **Moore, Stanford** (4 September 1913–23 August 1982), American scientist. He was the co-winner of the Nobel Prize in chemistry in 1972 for his contribution to establishing a relationship between the chemical structure and catalytic activity of the active center of ribonuclease.
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- 5** **Emich, Friedrich Peter** (5 September 1860–22 January 1940), Austrian scientist. He is known for his important contributions to the development of analytical chemistry. He was responsible for building the microbalance as well as important contributions in microspectroscopy and micropolarization.
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- 6** **Dalton, John** (6 September 1766–27 July 1844), British scientist. He was the first to describe the inability to distinguish colors (color blindness). He was also the first to prepare a table of atomic weights. It was he who asserted that matter is composed of atoms of different masses that combine according to simple proportions. Dalton improved the list of atomic weights of a number of inserts relative to the mass of hydrogen that form the basis of the modern periodic table of elements. He enunciated the law of multiple proportionalities and those of mixtures of gases, through which chemistry became atomistic.
- Appleton, Edward Victor** (6 September 1892–21 April 1965), British scientist. He is known for his physical studies of the upper atmosphere, in this case for the so-called Appleton layer. His studies were awarded the Nobel Prize in physics in 1947.
- Leloir, Luis Federico** (6 September 1906–13 December 1987), Argentinian scientist. He discovered the sweet nucleotide benefits in the biosynthesis of carbohydrates. For this discovery, he was the winner of the Nobel Prize in chemistry in 1970.
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- 7** **Kekulé, Friedrich August** (7 September 1829–13 July 1896), German scientist. He had the idea of representing chemical formulas to demonstrate the atoms of a molecule. To him we owe the formula of benzene. He is particularly known for the discovery of carbon tetravalence.
- John Warcup Cornforth** (7 September 1917–14 December 2013), Australian scientist. He is known for his compelling research on the stereochemistry of enzyme reactions, which earned him the Nobel Prize in chemistry in 1975.
- Istrati, Constantin I.** (7 September 1850–17 January 1918), Romanian scientist, student of A. Würtz and C. Friedel. He is known for his important contributions to the development of petrochemistry and his studies on the Romania's natural resources (salt, oil, amber, ozokerite).
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- 8** **Meyer, Victor** (8 September 1848–8 August 1897), German scientist. He introduced the term "stereochemistry" for the study of molecular shapes. He is known for a method for the determination of the molar mass of volatile molecules, which bears his name. He was responsible for the synthesis of organic compounds with "nitro" groups and the discovery and description of thiophene, the first mustard gas.
- Wahl, Arthur C.** (8 September 1917–6 March 2006), American scientist. He elaborated the first plutonium in 1941.
- Barton, Dereck Harold Richard** (8 September 1918–16 March 1998), British scientist. He is known for developing the concept of conformation (stereoisomerism – a molecule exists in the form of several conformers) and applications in the field of chemistry. For these studies he was the co-winner, along with O. Hassel, of the Nobel Prize in chemistry in 1969.
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- 9** **Galvani, Luigi** (9 September 1737–4 December 1798), Italian scientist. He is known for his studies on the relationship between electricity and the nervous system, and discovered "animal electricity". His research work was the genesis for the discovery of the electric battery of Volta.
- Perovski, Lev Aleksevich** (9 September 1792–21 November 1856), Russian mineralogist. He is particularly known for lending his name to a class of materials known as "perovskite".
- Dehmelt, Hans Georg** (9 September 1922), German-American scientist. With W. Paul, he was the co-winner of the Nobel Prize in physics in 1989 for his contribution to the ion capture technique.
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- 10** **Kidd, John** (10 September 1775–7 September 1851), British scientist. He is famous for obtaining naphthalene from tar in 1819 and for proving that coal can be used as a source of chemicals.

**Compton, Arthur Holly** (10 September 1892–15 March 1962), American scientist. He showed that photons behave like particles and suggested their name. He also demonstrated that cosmic rays are affected by the magnetic field, which means that they too are partly composed of charged particles. For the discovery of the Compton effect (the collision of a photon and an electron), he was the co-winner of the Nobel Prize in physics in 1927.

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**11** **Zeiss, Carl** (11 September 1816–3 December 1888), German optician engineer. He was the first to manufacture high-quality lenses and optical devices. He is the founder of the Zeiss.

**Crippen, Robert Laurel** (11 September 1937) American astronaut. He is known as the first pilot of a space shuttle.

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**12** **Joliot-Curie, Irène** (12 September 1897–17 March 1956), French scientist. She and Frédéric Joliot won the Nobel Prize in chemistry in 1935 for the discovery of artificial radioactivity.

**Suzuki, Akira** (12 September 1930), Japanese scientist. He is known for his contributions in the field of microporous materials concerning adsorption phenomena. He, E. Negishi, and R. Heck received the Nobel Prize in chemistry in 2010 for their contribution to the development of palladium organometallic chemistry.

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**13** **Robinson, Robert** (13 September 1886–8 February 1975), British scientist. He studied alkaloids, analyzing the structure of morphine and that of strychnine. He worked with steroids and certain vegetable dye pigments called flavones. In 1947, he won the Nobel Prize in chemistry for his contributions to the study of plant substances of great biological importance, namely alkaloids.

**Ružička, Lavoslav (Leopold)** (13 September 1887–26 September 1976), Croatian-Swiss scientist. He is known for the synthesis of several hormones for the analysis of active compounds of civet musk. For his research on a class of compounds called terpenes, he won the Nobel Prize in chemistry in 1939.

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**14** **Nemours, Pierre Samuel du Pont** (14 September 1739–7 August 1817), American entrepreneur of French origin. Later, in 1931, his company (Du Pont) marketed, under the name Dupren, the products obtained by the polymerization of chloroprene. These products, including neoprene, which is the best known, are non-combustible and highly resistant to chemicals.

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**15** **Boutlerov, Alexandre Mikhaïlovitch** (15 September 1828–17 August 1886), Russian scientist. He is known for his contributions to the theory of chemical structure, the double bonds in the chemical structures. He also discovered methanal and formose reactions.

**Klein, Oskar Benjamin** (15 September 1894–5 February 1977), Swedish scientist. His research studies permitted great progress in the field of quantum mechanics. Independently of Fock and Gordon, he obtained the equation of a wave of a moving particle (Klein–Gordon equation), and independently of Nishina, he obtained the Klein–Nishina formula for the Compton effect. He is also known for his contributions to cosmology, the radiochemistry of elements, and relativity.

**Gell-Mann, Murray** (15 September 1929), American scientist. He discovered the theory of quarks. He was awarded the Nobel Prize in physics in 1969 for discoveries concerning the classification of elementary particles and their interactions.

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**16** **Kossel, Ludwig Karl Martin Leonhard Albrecht** (16 September 1853–5 July 1927), German physician. He is known for his work in the field of cell chemistry, specifically on proteins and nucleic substances. In 1910, he received the Nobel Prize in physiology or medicine.

**Temkin, Mikhail Isaakovich** (16 September 1908–01 October 1991), Russian scientist. He is known for his studies on thermodynamics, chemical kinetics, catalysis, and electrochemistry. His research studies made great progress in the field of heterogeneous catalysis (transition state theory, rate determining stage of a catalytic reaction, synthesis of ammonia). He developed the theory of adsorption and kinetics on real surfaces.

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**17** **Hales, Stephen** (17 September 1677–4 January 1761), British chemist and physiologist. He is known as the pioneer of experimental physiology. He invented the forceps and showed that part of the central nervous system (spinal cord) helps mediate some reflexes. Regarding gallstones and kidney stones, he proved that solvent usage could be reduced without surgery.

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- 18** **McMillan, Edwin Mattison** (18 September 1907–7 September 1991), American scientist. He is known for the discovery of neptunium by the decay of uranium. Because uranium had been named for the planet Uranus, the new element discovered beyond uranium was named neptunium, because Neptune is the planet after Uranus. His research contributed to the development of the cyclotron synchrotron. He was awarded the Nobel Prize in chemistry in 1951 for his studies of unquestionable transuranic elements.
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- 19** **Koshiba, Masatoshi** (19 September 1926), Japanese scientist. He was the co-winner of the Nobel Prize in physics in 2002 for his work on the detection of cosmic neutrinos (elementary particles, fermions with spin  $\frac{1}{2}$ ).
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- 20** **James Dewar** (20 September 1842–27 March 1923), British scientist. He wrote the design of an apparatus for the production of liquid oxygen on a large scale, the liquefaction of hydrogen and fluorine, and the preparation of liquid helium. He is known for the invention of the thermos flask.
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- 21** **Onnes, Heike Kamerlingh** (21 September 1853–1 February 1926), Dutch scientist. He is known for his success in liquefying helium. He discovered the phenomenon of superconductivity. The switches of modern computers work by superconductivity and can be cooled in liquid helium. For his research on the study of the low-temperature properties of matter, he received the Nobel Prize in physics in 1913.
- Glaser, Donald Arthur** (21 September 1926–28 February), American scientist. He is known for his invention of the bubble chamber (a closed space filled with a liquid at a given temperature that produces bubbles in the path of a particle passing through it) that can function as a particle detector.
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- 22** **Faraday, Michael** (22 September 1791–25 August 1867), British scientist. He summarized Faraday's laws that establish the link between electricity and chemistry. The electrostatic capacitance is measured in the unit farads in his honor. He invented the engine and the first processor. It was he who introduced the terms anode, cathode, anion, and cation. In 1847, Faraday observed that the optical properties of gold colloids are different from those of the pure metal.
- Williams, Charles H. Greville** (22 September 1829–15 June 1910), English scientist. He is known for his idea to isolate, for the distillation of isoprene rubber, synthetic rubber.
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- 23** **Shull, Clifford Glenwood** (23 September 1915–31 March 2001), American scientist. He is known for his involvement in the development of the neutron diffraction technique, for which he was awarded the Nobel Prize in physics in 1994.
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- 24** **Claude, Georges** (24 September 1870–21 May 1960), French scientist. He is known for designing a method in 1902 for the production of liquid air in large quantities. He discovered that acetylene could be transported safely if dissolved in acetone.
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- 25** On **September 25, 1921** the first highway built in the world, conducted by AVUS (Automobil Verkehrs und Übungen Straße GmbH) in Germany, was inaugurated.
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- 26** **Proust, Joseph Louis** (26 September 1754–5 July 1826), French scientist. He is known for the discovery of the grape sugar called glucose today in 1808. He improved the oil lamp by placing the reservoir so that the oil is pushed by its own weight.
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- 27** **Kolbe, Adolph Wilhelm Hermann** (27 September 1818–25 November 1884), German scientist. He was the first to apply electrolysis to organic compounds and obtained interesting double acids in various applications. He discovered the Kolbe synthesis for the preparation of salicylic acid in large quantities. He also discovered that nitriles are hydrolyzed to form the corresponding acids.
- Ryle, Martin** (27 September 1918–14 October 1984), British radio astronomer. He is known for aperture synthesis, an imaging radar that performs the processing of the received data to improve the azimuth resolution. He and A. Hewish were the co-winners of the Nobel Prize in physics in 1974 for their reference work in the field of astrophysics radio.
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- 28** **Lauth, Charles** (28 September 1836–2 December 1913), French scientist (student of Ch. Gerhardt). He is known for the discovery of dyes for the dye industry and ceramics, including Lauth violet, a green dye (by the oxidation of benzyl). Together, through his own method, he obtained aromatic aldehydes with applications in the fragrance and dye industry.
- Moissan, Ferdinand Frédéric Henri** (28 September 1852–20 February 1907), French pharmacist. He is known for the discovery of fluorine. He invented the electric arc furnace to reach up to 3500°C. For his discoveries, he was the winner of the Nobel Prize in chemistry in 1906.

**Zavoisky, Yevgeny** (28 September 1917–9 October 1976), Soviet scientist. He is known for the discovery of electron paramagnetic resonance (EPR) in 1944. He also discovered magnetoacoustic resonance plasma in 1958.

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**29 Fermi, Enrico** (29 September 1901–28 November 1954), Italian scientist. He is known for his discoveries about the presence of new radioactive elements produced by neutron irradiation and for the discovery of nuclear reactions caused by slow neutrons. He was awarded the 1938 Nobel Prize in physics.

**Mitchell, Peter Dennis** (29 September 1920–10 April 1992), English scientist. He was the winner of the Nobel Prize in chemistry in 1978 for his fundamental studies of biological energy transfer through the formulation of the chemiosmotic theory.

**Cronin, James Watson** (29 September 1931), American scientist. He and V.L. Wills were the co-winners of the Nobel Prize in physics in 1980 for discovering disobedience fundamental symmetry principles in the decay of neutral K-mesons.

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**30 Balard, Antoine-Jérôme** (30 September 1802–30 March 1876), French scientist. To him, we owe the discovery of bromine.

**Perrin, Jean Baptiste** (30 September 1870–17 April 1942), French scientist. He was awarded the Nobel Prize in physics in 1926 for his work on the discontinuity of matter and the discovery of sedimentation equilibrium.

**Geiger, Johannes Wihlem** (30 September 1882–24 September 1945), German scientist. He is known for the invention of the Geiger counter, named in his honor.

**Mott, Nevill Francis** (30 September 1905–8 August 1996), British scientist. He, P.W. Anderson, and J.H. van Vleck were co-winners of the Nobel Prize in physics in 1977 for their theoretical work on the electronic structure of disordered magnetic systems.

**Lehn, Jean-Marie** (30 September 1939), French scientist. He introduced the term supramolecular chemistry in 1978. His research covers molecular recognition, biology, catalysis, supramolecular transport processes, the design of molecular components as support for molecular electronics and photonics. Lehn discovered cryptates and cryptands, molecular boxes that can trap and transport of metal ions. Lehn, Cram and Pedersen were the winners of the 1987 Nobel Prize in chemistry.

**Deisenhofer, Johann** (30 September 1943), German scientist. He is known for his research on the determination of the three-dimensional structures of photosynthetic reactive centers. Together with R. Huber and H. Michel, he was a co-winner of the Nobel Prize in chemistry in 1988.

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