Glossary of Coined Names & Terms Used in Science

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Coined Name	**Who Coined Name**	**Reference**
A1(acid catalyzed unimolecular) mechanism A2 (acid catalyzed bimolecular) mechanism	Sir Christopher K. Ingold	Day, J.N.E.; Ingold, C.K. *Trans. Faraday Soc.* **1941**, 37, 686
Absolute temperature¶	Lord Kelvin (William Thomson)	Thomson, W. *Phil. Mag.* **1848**, 33[3], 313 Thomson, W. *Trans. Roy. Soc. Edin.* **1854**, 21, 123
Abzyme (**a**nti**b**ody + **zyme**) catalytic antibodies	Stephen J. Benkovic	Benkovic, S. *Proc. Robert A. Welch Found. Conf. Chem. Res.* **1987**, 31, 112
Aces (see quarks)	George Zweig	Zweig, G. *CERN Report No. 8419/TH412*, Feb. 21, 1964 (published in *Developments in the Quark Theory of Hadrons*, Vol. 1, (D.B. Lichtenberg, S.P. Rosen, eds.) Hadronic Press: Nonantum, Mass., 1980
Acetylene	Marcellin Bertholet	Bertholet, M. *Ann. Chim. Phys.* **1863**, 67[3], 52
Acid rain*	Robert Angus Smith	Smith, R.A. *J. Chem. Soc.* **1872**, 10, 33; *Pharmaceutical J.* **1872**, 2, 767; *Scot. Metereol. Soc. J.* **1873**, 3, 2
Acidity function	Louis P. Hammett	Treffers, H.P.; Hammett, L.P. *J. Am. Chem. Soc.* **1937**, 59, 1708
Actinide elements	Glenn T. Seaborg	Seaborg, G.T. *Chem. Eng. News* **1946**, 24, 1193 Street, J. Jr.; Seaborg, G.T. *J. Am. Chem. Soc.* **1950**, 72, 2790 Seaborg, G.T.; Katz, J.J. (eds.) *The Actinide Elements*,

		McGraw-Hill Book Co.: New York, 1954
Actinometry¶	Matthew F. Maury	Maury, M.F. *The Physical Geography of the Sea and its Meteorology*, S. Low: London, 1855, p. 367
Active site	Maud L. Menten	Menten, M.L.; Junge, J.*;* Green, M.H. *J. Biol. Chem.* **1944**, 153, 471 ("site of enzyme activity")
Activity coefficient	Gilbert N. Lewis Merle Randall	Lewis, G.N.; Randall, M. *J. Am. Chem. Soc.* **1921**, 43, 1112
Adsorption	Heinrich Gustav Johannes Kayser (suggested by Emil du Bois-Reymond)	Kayser, H. *Ann. Phys.* **1881**, 14, 451
Agostic interaction	Maurice Brookhart Malcolm L.H. Green	Brookhart, M.; Green, M.L.H. *J. Organometallic Chem.* **1983**, 250, 395
Allelotropic mixture	Ludwig Knorr	Knorr, L. *Ann. Chem.* **1896**, 306, 332 (stated on p. 336) Knorr, L. *Ann. Chem.* **1896**, 293, 70
Allomone	William L. Brown Jr. Thomas Eisner Robert H. Whittaker	Brown, W.L. Jr.; Eisner, T.; Whittaker, R.H. *BioScience* **1970**, 20, 21
Alpha effect	John O. Edwards Ralph G. Pearson	Edwards, J.O.; Pearson, R.G. *J. Am. Chem. Soc.* **1962**, 84, 16
Alpha helix	Linus Pauling	Pauling, L.; Corey, R.B. *PNAS USA* **1951**, 37, 235; 256; 729
Anation reaction*	Henry Taube	Haim, A.; Taube, H. *Inorg. Chem.* **1963**, 2, 1199
Anchimeric assistance (neighbouring group participation) Gk: *anchi + meros*	Saul Winstein (suggested by Prof. A.P. McKinlay, Emer. Professor of Classics at UCLA)	Winstein, S.; Lucas, H.J. *J. Am. Chem. Soc.* **1939**, 61, 1576; Winstein, S.; Lindegren, G.R. *J. Am. Chem. Soc.* **1953**, 75, 147
Anergy	Zoran Rant	Rant, Z. *Journees Int. Combust. Conversion Energie, Paris* **1964**, 27
Anion*¶ (Gk. *anienai*, to go up; "anion" = ion that moves up the potential gradient)	Michael Faraday	Faraday, M. *Res. Electr*. **1849**, 1, 198

Anionotropy	Sir Christopher K. Ingold	Burton, H.; Ingold, C.K. *J. Chem. Soc.* **1928**, 904 Ingold, C.K.; Rothstein, E. *J. Chem. Soc.* **1929**, 8; Burton, H.; Ingold, C.K. *Proc. Leeds Phil. Lit. Soc. Sci. Sect.* **1929**, 1(Pt. 9), 421
Anode*¶ (Gk. *anodos*, way up) Anode is terminal at higher or more positive potential relative to cathode.	Suggested to Michael Faraday by William Whewell (1794 - 1866), Prof. of minerology and moral theology at Cambridge University, England)	Cited in Oesper, R.E.; Speter, M. *Sci. Monthly* **1937**, 45, 535 Faraday, M. *Res. Electr.* **1839**, 633 Faraday, M. *Proc. Am. Phil. Soc.* **1839**, 1, 100
Antibody¶ (Ger.: *anti-körper*)	Hektoen Riesman	Hektoen; Riesman *Pathology*, 1901, p. 231
Antideuteron	Antonio Zichich Leon M. Lederman	Massam, T.; Muller, T.; Righini, B.; Schneegans, M.; Zichichi, A. *Nuovo Cimento* **1965**, 39, 10 Dorfan, D.E.; Eades, J.; Lederman, L.M.; Lee, W.; Ting, C.C. *Phys. Rev. Lett.* **1965**, 14, 1003
Antielectron¶	Paul M. Dirac	Dirac, P. *Proc. Roy. Soc. London* **1931**, 133A, 61 Anon. *Nature* **1946**, 158, 280
Antimatter	Sir Arthur Schuster (1898)	Cited in http://www.antimatterenergy.com/antimatter_history.htm (accessed February 2004)
Antineutron	B.Cork G.R. Lamberston O. Piccioni William A. Wenzel	Cork, B.; Lamberston, G.R.; Piccioni, O.; Wenzel, W.A. *Phys. Rev.* **1956**, 104, 1193
Antisense	Michael Zasloff Gary Felsenfeld	Zasloff, M.; Felsenfeld, G. *Biochem. Biophys. Res. Commun.* **1977**, 75, 598
Aptamer	Jack W. Szostak Andrew D. Ellington	Bock, L.C.; Griffin, L.C.; Lathan, J.A.; Vermaas, E.H.; Toole, J.J. *Nature* **1992**, 355, 564; Ellington, A.D. *Curr. Biol.* **1994**, 4, 427; Lorsch, J.R.; Szostak, J.W. *Biochemistry* **1994**, 33, 973; Elllington, A.D.; Conrad, R. *Biotech. Ann. Rev.* **1995**, 1, 185; Lauhon, C.T.; Szostak, J.W. *J. Am. Chem. Soc.* **1995**, 117, 1246; Huizenga, D.E.; Szostak, J.W. *Biochemistry* **1995**, 34, 656

Aquation reaction*	Arthur W. Adamson Fred Basolo	Adamson, A.W.; Basolo, F. *Acta Chem. Scand.* **1955**, 9, 1261
Archaea	Carl R. Woese	Woese, C.R.; Fox, G.E. *PNAS USA* **1977**, 74, 5088 Woese, C.R.; Magrum, L.J.; Fox, G.E. *J. Mol. Evol.* **1978**, 11, 245 Magrum, L.J.; Luehrsen, K.B.; Woese, C.R. *J. Mol. Evol.* **1978**, 11, 1
Aryne	John D. Roberts	Roberts, J.D.; Simmons, H.E.; Carlsmith, L.A.; Vaughan, C.W. *J. Am. Chem. Soc.* **1953**, 75, 3290
Ascorbic acid	Albert Szent-Gyorgyi Walter N. Haworth	Szent-Gyorgyi, A.; Haworth, W.N. *Nature* **1933**, 131, 24
Asymmetric induction	Donald J. Cram	Cram, D.J.; Abd Elhafez, F.A. *J. Am. Chem. Soc.* **1952**, 74, 5828; McKenzie, A.; Ritchie, P.D. *Biochem. Z.* **1931**, 237, 1
Asymmetric synthesis	W. Marckwald	Marckwald, W. *Chem. Ber.* **1904**, 37, 1368
Asymmetric transfer	H. Pracejus	Pracejus, H. *Fortschr. Chem. Fortsch.* **1967**, 8, 493
Atom economy	Barry M. Trost	Trost, B.M. *Science* **1991**, 254, 1471
Atomic orbital Molecular orbital	Robert S. Mulliken	Mulliken, R.S. *Phys. Rev.* **1928**, 32, 186; **1929**, 33, 730; **1932**, 41, 49; **1933**, 43, 279
Atoms in molecules (AIM)	Richard F.W. Bader	Biegler-Koenig, F.W.; Nguyen-Dang, T.T.; Tal, Y.; Bader, R.F.W.; Duke, A.J. *J. Phys. B* **1981**, 14, 2739
Atropisomerism	Richard Kuhn	Kuhn, R. *Molekulare Asymmetrie in Stereochemie*, (H. Freuberg, ed.) Franz, Deutike: Leipzig-Wien, 1933, p. 803; Adams, R.; Yuan, H.C. *Chem. Rev.* **1933**, 12, 261
Aufbauprinzip = aufbau principle	Niels Bohr	Bohr, N. *Z. Physik* **1922**, 9, 1
Axial and equatorial bonds	D.H.R. Barton O. Hassel K.S. Pitzer V. Prelog	Barton, D.H.R.; Hassel, O.; Pitzer, K.S.; Prelog, V. *Science* **1954**, 119, 49
B1(base catalyzed unimolecular) mechanism B2 (base catalyzed bimolecular) mechanism	Sir Christopher K. Ingold	Day, J.N.E.; Ingold, C.K. *Trans. Faraday Soc.* **1941**, 37, 686

B-strain (bond)	Herbert C. Brown	Brown, H.C. *J. Am. Chem. Soc.* **1945**, 67, 503 Brown, H.C.; Bartholomay, H.; Taylor, M.D. *J. Am. Chem. Soc.* **1944**, 66, 435
Banana bond*	J.J. Kaufman L. Burnell Martin Klessinger	Burnelle, L.; Kaufmann, J.J. *J. Chem. Phys.* **1965**, 43, 3540; Klessinger, M. *J. Chem. Phys.* **1967**, 46, 3261
Baryon	Frederick J. Belinfante	Belinfante, F.J. *Phys. Rev.* **1953**, 92, 145; 994; 997
Beta sheet	Linus Pauling	Pauling, L.; Corey, R.B. *PNAS USA* **1951**, 37, 251; 729 Corey, R.B.; Pauling, L. *Rend. Ist. Iombardo sci. Pt. 1* **1955**, 89, 10 - 37
Big Bang¶	Fred Hoyle	Hoyle, F. *Nature of the Universe: a series of broadcast lectures*, 1950
Biochip	K. Boldt E. Nius Stephen P.A. Fodor	Boldt, K. *Wochenschrift fur Brauerei* **1933**, 50, 316 Nius, E. *Wochenschrift fur Brauerei* **1933**, 50, 257 US 6027880 (2000-02-22)
Bioethics Global bioethics	Van Rensselaer Potter	Potter, V.R. *Ann. N.Y. Acad. Sci.* **1972**, 196, 200 Potter, V. *Cancer Res.* **1975**, 35, 2297 Potter, V.R. *Perspect. Biol. Med.* **1995**, 39, 118 Potter, V.R.; Potter, L. *Medicine and Global Survival* **1995**, 2, 185 Potter, V.R. *Biomedical Ethics* **2000**, 5, 89
Bioinformatics	several	Lieberman, M.N. *J. Computer Aided Molec. Design* **1988**, 1, 323 Masys, D.R. *J. Res. NIST* **1989**, 94, 59 Hatase, O.; Wang, J.H. (eds.) *Bioinformatics: information transduction and processing systems from cell to whole body*, Elsevier: Amsterdam, 1990
Bioorganic chemistry	Thomas C. Bruice	Cited in Blasko, A.; Bruice, T.C. *Acc. Chem. Res.* **1999**, 32, 475
Biotechnology	F.F. Nord	Nord, F.F. *Chem. Ztg.* **1934**,

	L. Eberth	58, 327; 347 Eberth, L. *Z. Zuckerind.* **1955**, 5, 177
Black hole	John A. Wheeler	Wheeler, J.A. in *Atti Conv. Mendeleeviano Period. Simmetrie Struttura Elem. Mater.* (M. Verde, ed.) **1971**, 189 - 233; Wheeler, J.A. *Astrophys. Gravitation, Proc. Solvay Conf. Phys. 16th* **1974**, 279 - 316
Blackbody radiation	J. Clark Harry Fielding Reid	Clark, J. *Rohault's Physique* **1710**, 223; Reid, H.F. *Astrophys. J.* **1895**, 2, 160 Anon. *Z. Elektrochem. Angew. Physik. Chem.* **1913**, 18, 823
Bolaform electrolyte* (Sp.: *bola* = missile weapon consisting of balls of iron, stone, etc. attached to ends of a thong or cord)	R.M. Fuoss D. Edelson	Ruoss, R.M.; Edelson, D. *J. Am. Chem Soc.* **1951**, 73, 269
Bond order	Arthur D. Walsh	Walsh, A.D. *Nature* **1946**, 157, 768
Boson	D.C. Peaslee	Peaslee, D.C. *Helv. Phys. Acta* **1950**, 23, 490 (first occurrence of name)
Bra-ket notation	Paul D.M. Dirac	Dirac, P.A.M., *The Principles of Quantum Mechanics*, Clarendon Press: Oxford, 1958
Bremsstrahlung	Gottfried von Droste	Von Droste, G. *Z. Physik.* **1936**, 104, 335
Bridged ion	T.P. Nevell, E. de Salas, C.L. Wilson	Nevell, T.P.; de Salas, E.; Wilson, C.L. *J. Chem. Soc.* **1939**, 1188
Bromonium ion	A. Roberts G.E. Kimball	Roberts, I.; Kimball, G.E. *J. Am. Chem. Soc.* **1937**, 59, 947
Buckminsterfullerene	Sir Harold W. Kroto Robert F. Curl Richard E. Smalley	Kroto, H.W.; Heath, J.R.; O'Brien, S.C.; Curl, R.F.; Smalley, R.E. *Nature* **1985**, 318(6042), 162
Buckyball	D.E. Weeks W.G. Harter	Weeks, D.E.; Harter, W.G. *Chem. Phys. Lett.* **1988**, 144, 366
Bullvalene	Attributed to an unnamed skeptical person who did not believe that such a structure could exist	Cited in Ault, A. *J. Chem. Educ.* **2001**, 78, 924; Doering, W.v.E.; Roth, W.R. *Angew. Chem.* **1963**, 75, 27; *Tetrahedron* **1963**, 19, 715

Cacodyl (Gk.: *kakodes* = stinking)	Jakob J. Berzelius	Cited in Daubeny, Charles B. *An Introduction to the Atomic Theory*, **1850**, p. 219 Cited in Roscoe, Sir Henry E. *Lessons in Elementary Chemistry*, **1869**, p. 341 *Jahres Bericht*, tr. C.F. Gmelin, F. Wöhler, Tübingen, 1841, Vol. 20, p. 526 – 537
Calixarene*	C. David Gutsche Ramamurthi Muthukrishnan	Gutsche, C.D.; Muthukrishnan, R. *J. Org. Chem.* **1978**, 43, 4905 Gutsche, C.D.; Muthukrishnan, R.; No, K.H. *Tetrahedron Lett.* **1979**, 2213; Muthukrishnan, R.; Gutsche, C.D. *J. Org. Chem.* **1979**, 44, 3962
Canal rays (kanalstrahlen)	Eugen Goldstein	Goldstein, E. *Sitzungsber. Konigl. Akad. Wissensch. Berlin* **1886**, 39, 691
Canonical form	Philip Frank Richard C. Tolman	Frank, P. *Physik. Z.* **1913**, 13, 506 Tolman, R.C. *Phil. Mag.* **1914**, 28, 572
Captodative substitution Captodative effect	Hans G. Viehe	Stella, L.; Janousek, Z.; Mereny, R.; Viehe, H.G. *Angew. Chem. Int. Ed.* **1978**, 17, 691; Viehe, H.G.; Merenyi, R.; Stella, L.; Janousek, Z. *Angew. Chem. Int. Ed.* **1979**, 18, 917
Carbanion	E.S. Wallis F.H. Adams	Wallis, E.S.; Adams, F.H. *J. Am. Chem. Soc.* **1933**, 55, 3838
Carbene	William von Eggers Doering	Doering, W.v.E.; Knox, L.H. *J. Am. Chem. Soc.* **1956**, 78, 4947
Carbenoid	Harold Shechter Gerhard L. Closs Robert A. Moss	Friedman, L.; Shechter, H. *J. Am. Chem. Soc.* **1959**, 81, 5512; **1960**, 82, 1002; **1961**, 83, 3159 Closs, G.L.; Moss, R.A. *J. Am. Chem. Soc.* **1964**, 86, 4042
Carbonium ion	Adolf von Baeyer	Baeyer, A. von; Villiger, V. *Chem. Ber.* **1902**, 35, 1189; Baeyer, A. von *Chem. Ber.* **1905**, 38, 569
Carbocation	W. Dilthey (carbenium)	Dilthey, W.; Dinklage, G.

Carbonium ion Carbenium ion	George Olah (new definitions)	*Chem. Ber.* **1929**, 62, 1834; Olah, G. *J. Am. Chem. Soc.* **1972**, 94, 808
Carcerands (Latin: *carcer* = prison) Cavitands Caviplexes	Donald J. Cram	Cited in Cram, D.J., interview in Hargittai, I. *Chem. Intell.* **1996**, 2(1), 6
Catalysis	Jakob J. Berzelius Wilhelm Ostwald	Berzelius, J.J. *Jahresberichte* **1835**, 15, 237 Ostwald, W. *J. Prakt. Chem.* **1883**, 27, 1
Catastrophe theory	Hans Suess C. Jayaratnam Eliezer	Suess, H. *Naturwiss.* **1939**, 27, 702 Eliezer, C.J. *Proc. Roy. Soc. London* **1947**, 191A, 133
Catenane*	Edel Wasserman	Wasserman, E. *J. Am. Chem. Soc.* **1960**, 82, 4433
Cathode*¶ (Gk. *kathodos*, way down) Cathode is terminal at lower or more negative potential relative to anode.	Suggested to Michael Faraday by William Whewell (1794 - 1866), Prof. of minerology and moral theology at Cambridge University, England)	Faraday, M. *Res. Electr.* **1839**, 633 Faraday, M. *Proc. Am. Phil. Soc.* **1839**, 1, 100
Cathode rays* (kathodenstrahlen)	Eugen Goldstein	Goldstein, E. *Sitzungsber. Konigl. Akad. Wissensch. Berlin* **1886**, 39, 691
Cation*¶ (Gk: *katienai*, to go down; "cation" = ion that moves down potential gradient)	Michael Faraday	Faraday, M. *Res. Electr.* **1839**, 655
Cationotropy	Sir Christopher K. Ingold	Burton, H.; Ingold, C.K. *J. Chem. Soc.* **1928**, 904 Ingold, C.K.; Rothstein, E. *J. Chem. Soc.* **1929**, 8; Burton, H.; Ingold, C.K. *Proc. Leeds Phil. Lit. Soc. Sci. Sect.* **1929**, 1(Pt. 9), 421
Celluloid	John Wesley Hyatt	Hyatt, J.W. US 88, 663 (1869) Hyatt, J.W. US 89,582 (1869) Hyatt, J.W. *J. Ind. Eng. Chem.* **1914**, 6, 158
Chain reaction	Enrico Fermi	Fermi, E.; Segre, E. *Phys. Rev.* **1941**, 59, 680
Chaos theory	James Yorke	*Phys. Rev. Lett.* **1998**, 81, 4341; *Physica D* **2000**, 144, 44
Chaotropic salts (Gk: chaos = tending to disorder) salts that denature DNA	K. Hamaguchi E.P. Geiduschek	Hamaguchi, K.; Geiduschek, E.P. *J. Am. Chem. Soc.* **1962**, 84, 1329
Chaperonin	Sir Reginald John Ellis	Hemmingsen, S.M.;

		Woolford, C.; Van der Vies, S.M.; Tilly, K.; Dennis, D.T.; Georgopoulos, C.P.; Hendrix, R.W.; Ellis, R.J. *Nature* **1988**, 333, 330
Charm	Murray Gell-Mann	Feynman, R.P.; Gell-Mann, M. *Proc. UN Intern. Conf. Peaceful Uses Atomic Energy, 2nd Geneva*, **1958**, 30, 38 - 49; Cited in Hargittai, I. *Road to Stockholm* Oxford U. Press: Oxford, 2002, p. 190
Chelate* (Gk. *chele*, claw)	G.T. Morgan H.K. Drew	Morgan, G.T.; Drew, H.K. *J. Chem. Soc.* **1920**, 117, 1456
Chemical chameleon*	Barry M. Trost	Trost, B.M.; Chadiri, M.R. *J. Am. Chem. Soc.* **1984**, 106, 7260
Chemical cytometry	Norman Dovichi	Dovichi, N. *Curr. Opin. Chem. Biol.* **2003**, 7, 603
Chemical induction*	F. Kessler	Kessler, *Pogg. Ann. Phys.* **1863**, 119, 218
Chemical potential*	Josiah W. Gibbs	Gibbs, J.W., *Trans. Conn. Acad*. **1876 - 1878**, 3, 108; 342
Chemical shift*	W. Knight W. Dickenson W. Proctor N. Bloembergen H. Gutowsky	Knight, W. *Phys. Rev.* **1946**, 76, 1259; Dickenson, W. *Phys. Rev.* **1950**, 77, 736; Proctor, W.; Yu, F.C. *Phys. Rev.* **1950**, 77, 717; Bloembergen, N. *Phys. Rev.* **1947**, 75, 1326; Bloembergen, N. *Physica (The Hague)* **1950**, 16, 95; Gutowsky, H.; Hoffman, C.J. *J. Chem. Phys.* **1951**, 19, 1259; Meyer, L.; Saika, A.; Gutowsky, H. *J. Am. Chem. Soc.* **1953**, 75, 4567
Chemiluminescence*	Eilhardt Weidemann	Wiedemann, E. *Arch. Sci. Phys. Nat.* **1887**, 18, 565; *Erlangen Phys. Med. Soc. Sber.* **1888**, 25; *Ann. Physik.* **1888**, 34, 446; Wiedemann, E.; Messerschmitt, J.B. *Ann. Physik* **1888**, 34, 463; Wiedermann, E.; Schmidt, G.C. *Ann. Physik* **1895**, 54, 604; **1895**, 56, 18, 201; **1896**, 57, 447; *Berlin Phys. Ges. Verh.* **1897**, 37
Chemoinformatics	F.K. Brown	Brown, F.K. *Ann. Rep. Med.*

		Chem. **1998**, 33, 375
Chemotherapy	Paul Ehrlich	Ehrlich, P. *Angew. Chem.* **1910**, 23, 2; *Lancet* **1913**, 2, 445
Chemurgy¶	William J. Hale	Hale, W.J. *Farm Chemurgic*, 1934, p. 141
Chevron plot	Hue Sun Chan	Chan, H.S.; Dill, K.A. *Proteins: Structure, Function, and Genetics* **1998**, 30, 2
Chi-square goodness of fit	Karl Pearson	Pearson, K. *Phil. Mag.* **1900**, 50[5], 157
Chiral Chirality	William Thomson, Lord Kelvin	Kelvin, W.T. The Second Robert Boyle Lecture in *J. Oxford Univ. Junior Scientific Club* **1894**, [18], 25; cited in Mislow, K. *Chirality* **2002**, 14, 126 Kelvin, Lord *Baltimore Lectures*, C.J. Clay & Sons: London, 1904
Chiral pool	Akira Yoshikoshi Yoshiaki Nakahara Tomoya Ogawa	Yoshikoshi, A. *Kagaku Zokan (Kyoto)* **1981**, 91, 87 Nakahara, Y.; Ogawa, T. *Kagaku Zokan (Kyoto)* **1981**, 91, 101
Chlorinolysis	E.T. McBee H.B. Hass	McBee, E.T.; Hass, H.B.; Pierson, E. *J. Ind. Eng. Chem.* **1941**, 33, 181 McBee, E.T.; Hass, H.B.; Chao, T.H.; Welch, Z.D.; Thomas, L.E. *J. Ind. Eng. Chem.* **1941**, 33, 176
Chromatin Achromatin	Walther Flemming	Flemming, W. *Archiv fur mikroskopische Anatomie* **1880**, 18, 152
Chromatography (Gk. *Chromos* = colour + *graphikos* (formed by writing))	Mikhail Semenovich Tswett	Tsett, M. *Ber. Deut. Bot. Ges.* **1906**, 24, 235
Chromophore (Gk. *Chromos* = colour + *phoros (pherein)* carrying)	Otto Nikolaus Witt	Witt, O.N. *Chem. Ber.* **1876**, 9, 522
Chromosome ((Gk. *Chromos* = colour + *soma* (body))	Heinrich Wilhelm Gottfried Waldeyer-Hartz	Waldeyer, W. *Arch. Mikr. Anat.* **1888**, 32, 1; cited in Zacharias, H. *Chromosome Res.* **2001**, 9(5), 345
Chronopotentiometry	Paul Delahay	Delahay, P.; Mamantov, G. *Anal. Chem.* **1955**, 27, 478
Cine substitution (Gk: *cine*, to move)	Joseph F. Bunnett R.E. Zahler	Bunnett, J.F.; Zahler, R.E. *Chem. Rev.* **1951**, 49, 273
Cis (Latin: on this side)	Jacobus H. van't Hoff	Van't, J.H., 1874 cited in

Trans (Latin: across)		Tarbell, D.S.; Tarbell, A.T. *Essays on the History of Organic Chemistry in the United States, 1875 - 1955*, Folio Publishers: Tennessee, 1986, Chapter 1
Clathrate (Latin: *clathratus* = enclosed by bars or grating)	H.M. Powell	Powell, H.M. *J. Chem. Soc.* **1948**, 61
Clay world	Alexander Graham Cairns-Smith	Cairns-Smith, A.G. *Sci. Amer.* **1985**, 252, 90; 94; 96 Cairns-Smith, A.G. *Proc. Roy. Inst. Gr. Brit.* **1988**, 60, 137
Coacervate	Aleksandr I. Oparin	Oparin, A.I.; Evreinova, T.N.; Shubert, T.A.; Nestyuk, M.N. *Dokl. Akad. Nauk SSSR* **1955**, 104, 581
Codon	Marshall W. Nirenberg	Tsugita, A.; Fraenkel-Conrat, H.; Nirenberg, M.W.; Matthaei, J.H. *Proc. Natl. Acad. Sci. USA* **1962**, 48, 846
Cold fusion*	Steven Earl Jones	Jones, S.E. *Fusion Technology* **1985**, 8(1, Pt.2B), 1511 Jones, S.E. *Nature* **1986**, 321, 127
Colloid	Thomas Graham	Graham, T. *Phil. Trans.* **1861**, 151, 183
Combichem	D. Brown (Glaxo, UK)	Brown, D. *Molecular Diversity* **1997**, 2, 217
Combinatorial chemistry	Sydney Brenner Richard A. Lerner	Brenner, S.; Lerner, R.A. *PNAS USA* **1992**, 89, 5381; Jacobs, J.W.; Fodor, S.P. *Trends Biotech.* **1994**, 12, 19
Combinatorial library	Stephen J. Benkovic Richard A. Lerner	Huse, W.D.; Sastry, L.; Iverson, S.A.; Kang, A.S.; Alting-Mees, M.; Burton, D.R.; Benkovic, S.J.; Lerner, R.A. *Science* **1989**, 246, 1275
Combinatorial synthesis	S.P. Fodor Michael C. Pirrung Lubert Stryer	Fodor, S.P.; Read, J.L.; Pirrung, M.C.; Stryer, L.; Lu, A.T.; Solas, D. *Science* **1991**, 251, 767
CoMFA = **co**mparative **m**olecular **f**ield **a**nalysis	Richard D. Cramer III	Cramer, R.D. III; Patterson, D.E.; Bunce, J.D. *J. Am. Chem. Soc.* **1988**, 110, 5959
Complementarity	Niels Bohr	Bohr, N. *Phys. Rev.* **1935**, 48, 696
Complementary DNA	Francis H.C. Crick James D. Watson	Crick, F.H.C.; Watson, J.D. *Proc. Roy. Soc. London* **1954**, 223A, 80
Concerted reaction	Charles Gardner Swain	Swain, C.G. *J. Am. Chem.*

		Soc. **1948**, 70, 1119; Swain, C.G.; Eddy, R.W. *J. Am. Chem. Soc*. **1948**, 70, 2989
Conformation	Walter N. Haworth	Haworth, W.H. *The Constitution of the Sugars*, Edward Arnold & Co.: London, 1929, p. 90
Co-ordination	Alfred Werner	Werner, A. *Z. Anorg. Chem.* **1893**, 3, 267
Coordinate	Gottfried W. Leibniz	Leibniz, G.W. *Mathematische Schriften* **1691**, 5, 243
Conservation of energy¶	Thomas Young William Thomson (Lord Kelvin) William John Macquorn Rankine John Tyndall	Young, T. *Natural Philosophy* **1845**, 1, 59 Thomson, W. *Phil. Mag.* **1852**, 4[4], 304 Rankine, W. *Transformation of Energy* in *Scientific Papers*, 1881, p. 203 Tyndall, J. *Heat Considered as a Mode of Motion*, New York, 1866, p. 9
Cosmic rays	A. Gockel R.A. Millikan	Gockel, A. *Physik. Z.* **1915**, 16, 345; Millikan, R.A. *Physik. Z.* **1930**, 31, 241
Covalent	Irving Langmuit	Langmuir, I. *J. Am. Chem. Soc*. **1914**, 38, 2221; **1919**, 41, 868; 1543; **1920**, 42, 274
Coxeter graph Coxeter group Coxeter matrix	Nicolas Bourbaki (pseudonym)	Bourbaki, N. *Elements de Mathematique Fascicule XXXIV Groupes et Algebres de Lie, Chap. 4,5,6*, Hermann: Paris, 1968, p. 9 - 22
"Cracking" of hydrocarbons	W.M. Burton	Burton, W.M. *Ind. Eng. Chem.* **1918**, 10, 484
Critical mass	Francis Perrin	Perrin, F. *Compt. Rend.* **1939**, 208, 1573
Cross-over experiment	Charles D. Hurd	Hurd, C.D; Schmerling, L. *J. Am. Chem. Soc.* **1937**, 59, 107
Crown ethers	Charles Pedersen	Pedersen, C.J. *J. Am. Chem. Soc*. **1967**, 89, 2495; 7017 Pedersen, C.J. *Angew. Chem. Int. Ed.* **1988**, 27, 1053
Curly arrow notation* (for reaction mechanisms)	Sir Robert Robinson William Ogilvy Kermack	Kermack, W.O.; Robinson, R. *J. Chem. Soc.* **1922**, 121, 427; Robinson, R. *Two Lectures on an Outline of an Electrochemical (Electronic) Theory of the Course of Organic Reactions*, Institute of Chemistry of Gr. Britain & Ireland: London, 1932

Cryptands	Jean Marie Lehn	Dietrich, B.; Lehn, J.M.; Sauvage, J.P. *Tetrahedron Lett.* **1969**, 2885; 2889 Dietrich, B.; Lehn, M.; Sauvage, J.P.; Blanzat, J. *Tetrahedron* **1973**, 29, 1629; Dietrich, B.; Lehn, J.M.; Sauvage, J.P. *Tetrahedron* **1973**, 29, 1647
Cybernetics	Norbert Wiener	Wiener, N. *Cybernetics: or, Control and Communication in the Animal and the Machine*, 1948
Cyclodextrins	Friedrich Cramer	Cramer, F. *Chem. Ber.* **1951**, 84, 851; Cramer, F. *Angew. Chem.* **1952**, 64, 437
Cyclotron	Ernest O. Lawrence	Lawrence, E.O.; Livingston, M.S. *Science* **1930**, 72, 376
Cytochromes	David Keilin	Keilin, D. *Compt. Rend. Soc. Biol.* **1927**, 97(24) Appendix 39
D-brane (Dirichlet (mem)brane)	Joseph Polchinski	Polchinski, J. *Phys. Rev. Lett.* **1995**, 75, 4724
Dark energy	Michael S. Turner	Turner, M.S. *Nucl. Phys. B* **1999**, 72, 69; Turner, M.S. *Astron. Soc. Pacific Conf. Ser.* **1999**, 165, 431; Perlmutter, S.; Turner, M.S.; White, M. *Phys. Rev. Lett.* **1999**, 83, 670; Huterer, D.; Turner, M.S. *Phys. Rev. D* **1999**, 60, 081301/1
Dark matter Ger. *dunkelmaterie*	Fritz Zwicky	Zwicky, F. *Helv. Phys. Acta* **1931**, 4, 49; **1933**, 6, 210; **1933**, 7, 294 Zwicky, F. *Physics Today* **1953**, 6(4), 7
Dendrimer	Donald A. Tomalia	Tomalia, D.A.; Dewald, J.R. (Dow Chemical Co.) WO 8402705 (1984-07-19) Tomalia, D.A.; Baker, H.; Dewald, J.; Hall, M.; Kallos, G.; Martin, S.; Roeck, J.; Ryder, J.; Smith, P. *Polymer J. (Tokyo)* **1985**, 17, 117 Tomalia, D.A.; Baker, H.; Dewald, J.; Hall, M.; Kallos, G.; Martin, S.; Roeck, J.; Ryder, J.; Smith, P. *Macromolecules* **1986**, 19, 2466

		Tomalia, D.A.; Dewald, J.R. (Dow Chemical Co.) US 4587329 (1986-05-06)
Density **f**unctional **t**heory (DFT)	Walter Kohn	Hohenberg, P.; Kohn, W. *Phys. Rev.* **1964**, 136, B864
Desmotropy Desmotropism (Gk.: change of bonds)	P. Jacobson	Jacobson, P. *Chem. Ber.* **1888**, 21, 2624 (stated on p. 2628) Baither, O. *Chem. Ber.* **1887**, 20, 1731 (refers to P. Jacobson on p. 1732)
Determinant	Arthur Cayley	Cayley, A. *Cambr. Phil. Soc.* **1849**, 8, 75
Deuterium	Harold C. Urey	Urey, H.C.; Brickwedde, F.G.; Murphy, G.M., *Phys. Rev.* **1932**, 39, 164; 864
Dialysis	Thomas Graham	Graham, T. *Phil. Trans.* **1861**, 151, 183
Diamagnetism	Michael Faraday	Faraday, M. *Phil. Trans.* **1846**, 136, 21
Diastereomer	Paul H. Jacobson	Cited in Mislow, K. *Chirality* **2002**, 14, 126; Meyer, V., Jacobson, P.H. *Lehrbuch der Organischen Chemie* (2nd ed.) Vol. 1, Pt. 1, Veit: Leipzig, 1907, p. 101, 113-4
Dietary fiber	Eben H. Hipsley	Hipsley, E.H. *Brit. Med. J.* **1953**, 2, 420; Hipsley, E.H. *Med. J. Australia* **1974**, 2, 341
Dilatancy	Osborne Reynolds	Reynolds, O. *Phil. Mag.* **1885**, 20[5], 469
Dipole	Peter Debye	Debye, P. *Physik. Z.* **1912**, 13, 97
Discovery informatics	B.L. Claus D.J. Underwood	Claus, B.L.; Underwood, D.J. *Drug Discovery Today* **2002**, 7, 957
Distonic radical cations (Gk: diestos = separate) (Latin: distans = separate)	Leo Radom	Yates, B.F.; Bouma, W.J.; Radom, L. *J. Am. Chem. Soc.* **1984**, 106, 5805
Diversity **o**riented **s**ynthesis (DOS)	Stuart L. Schreiber	Schreiber, S.L. *Science* **2000**, 287, 1964
Domino reaction	Leo A. Paquette	Paquette, L.A.; Wyvratt, M.J. *J. Am. Chem. Soc.* **1974**, 96, 4671 Wyvratt, M.J.; Paquette, L.A. *Tetrahedron Lett.* **1974**, 2433
Domino Diels-Alder reaction	Leo A. Paquette	Paquette, L.A.; Wyvratt, M.J.; Berk, H.C.; Moerch, R.E. *J. Am. Chem. Soc.* **1978**, *100*, 5845.
Dynamic spin polarization	H. Kollmar V. Staelmmler	Kollmar, H.; Staelmmler, V. *Theor. Chim. Acta* **1978**, 48,

		223
E1 (elimination unimolecular) E2 (elimination bimolecular) mechanisms	Sir Christopher K. Ingold Edward D. Hughes	Dhar, M.L.; Hughes, E.D.; Ingold, C.K.; Mandour, A.M.M.; Maw, G.A.; Woolf, L.I. *J. Chem. Soc*. **1948**, 2093; Hughes, E.D.; MacNulty, B.J. *J. Chem. Soc.* **1937**, 1283 Hughes, E.D.; Ingold, C.K.; Scott, A.D. *J. Chem. Soc.* **1937**, 1271; Hughes, E.D.; Ingold, C.K. *Trans. Faraday Soc.* **1941**, 37, 657; Ingold, C.K., *Structure and Mechanism in Organic Chemistry*, Cornell University Press: Ithaca, 1953, Chapter 8
E1cb (elimination unimolecular carbanion) mechanism	Sir Christopher K. Ingold Edward D. Hughes	Hughes, E.D.; Ingold, C.K. *J. Chem. Soc.* **1933**, 523; Hughes, E.D.; Ingold, C.K.; Patel, C.S. *J. Chem. Soc.* **1933**, 526; Ingold, C.K., *Structure and Mechanism in Organic Chemistry*, Cornell University Press: Ithaca, 1953, Chapter 8
Ecosystem¶	Arthur George Tansley	Tansley, A.G. *Ecology* **1935**, 16, 284.
Eight-fold way	Murray Gell-Mann	Gell-Mann, M. *California Institute of Technology Synchrotron Laboratory Report CTSL-20*, 1961 Ne'eman, Y. *Nuclear Phys.* **1961**, 26, 222 Gell-Mann, M. *Phys. Rev.* **1962**, 125, 1067 Cited in Hargittai, I. *Road to Stockholm* Oxford U. Press: Oxford, 2002, p. 190
Electrode¶	Michael Faraday	Faraday, M. *Res. Electr*. **1839**, 662 Daubeny, C.G.B. *An Introduction to the Atomic Theory*, 2nd ed., 1850, p. 207
Electrolyte¶	Michael Faraday	Faraday, M. *Res. Electr*. **1839**, 664 Grove, W. *Correlated Physical Forces*, 1874, p. 143
Electromotive force	Sir Humphry Davy	Davy, H. *Phil. Trans. Roy. Soc.* **1807**, 97, 1 (stated on p. 46)
Electron	George Johnstone Stoney	Stoney, S.J. *Phil. Mag.* **1894**,

	George FitzGerald	38[5], 418
Electron configuration	Walter Grotian Otto Laporte	Grotian, W. *Z. Physik* **1921**, 8, 116; Laporte, O. *J. Washington Acad. Sci.* **1925**, 15, 409
Electroweak interaction	J.G. Taylor	Taylor, J.G. *Phys. Lett. B* **1979**, 83B, 331
Ellipsometer	Alexandre Rothen	Rothen, A. *Rev. Sci. Instrum.* **1945**, 16, 26
Enantiomer		
Enantiomeric excess	James D. Morrison Harry S. Mosher	Morrison, J.D.; Mosher, H.S. *Asymmetric Organic Reactions*, Prentice-Hall, Inc.: New Jersey, 1971, p. 10.
Enantiomorph	René Haüy	1880s Cited in Crum Brown, A. *Encycl. Brit.* **1885**, 19, 312
Enantiomorphism Enantiomorphous	Carl Friedrich Naumann	Naumann, C.F. *Elemente der theoretischen Krystallographie*, Wilhelm Engelmann: Leipzig, 1856, p. 104 (cited in Gal, J. *Chirality* **2007**, 19, 89)
Endergic reaction Exergic reaction	W. Blum	Blum, W. *Science* **1934**, 79, 84
Endocyclic effect	Yvan Guindon	Guindon, Y.; Lavallee, J.F.; Llinas-Brunet, M.; Horner, G.; Rancourt, J. *J. Am. Chem. Soc.* **1991**, 113, 9701 Guindon, Y.; Rancourt, J. *J. Org. Chem.* **1998**, 63, 6554
Exocyclic effect		Guindon, Y.; Yoakim, C.; Gorys, V.; Ogilvie, W.W.; Delorme, D.; Renaud, J.; Robinson, G.; Lavallee, J.F.; Slassi, A.; Jung, G.; Rancourt, J.; Durkin, K.; Liotta, D. *J. Org. Chem.* **1994**, 59, 1166 Guindon, Y.; Slassi, A.; Rancourt, J.; Bantle, G.; Bencheqroun, M.; Murtagh, L.; Ghiro, E.; Jung, G. *J. Org. Chem.* **1995**, 60, 288
Endosmosis (osmosis)* Exosmosis (diffusion)*	René Henri Dutrochet	Dutrochet, R.H. *Ann. Chim. Phys.* **1827**, 35, 393; **1828**, 37, 191; **1832**, 49, 411; **1832**, 51, 159; **1835**, 60, 337

Endothermic Exothermic	Marcellin Bertholet	Bertholet, M. *Ann. Chim. Phys.* **1865**, 6[4], 290 – 328; 328 – 442; 442 - 464
Entropy	Rudolf Clausius	Clausius, R. *Abhandlungen ueber die mechanische Waermetheorie*, 1864
"Entropy of the universe increases toward a maximum"	Arthur Michael	Michael, A. *J. Am. Chem. Soc.* **1910**, 32, 990; *J. Prakt. Chem.* **1899**, 60, 292; **1903**, 68, 487
Enzyme (Gk. *Enzymos* = leavened, ferment)	Wilhelm Kühne	Kühne, W. *Untersuch. Physiol. Inst. Heidelberg* **1878**, 1, 291
Essergy (**ess**ential aspect of en**ergy**)	Robert Berton Evans	Evans, R.B. *A Proof that Essergy is the Only Consistent Measure of Potential Work (for Work Systems)*, Ph.D. Thesis, Dartmouth College, 1969
Eukaryote	Andre Lwoff	Lwoff, A. *Arch. Protistenk* **1938**, 90, 194
Exergy (Gk. *ex* (external) + *ergos* (work) (Ger.: *Exergie*)	Zoran Rant	Rant, Z. *Forschung Gebiete Ingenieur Wes.* **1956**, 22, 36; Rant, Z. *Vestnik Slovenskega Kemijskega Drustva* **1957**, 4, 49
Expressed sequence tags (EST)	J. Craig Venter	*Nature* **1992**, 355, 632 *Genomics* **1992**, 12, 492 *Nature Genetics* **1992**, 1, 124 *Nature* **1992**, 357, 367
F-strain (force)	Herbert C. Brown	Brown, H.C. *J. Am. Chem. Soc.* **1945**, 67, 374; 378; 1452; 1765
Fast reactions	Manfred Eigen	Bunau, G.; Eigen, M. *Z. Physik. Chem.* **1956**, 7, 108 (first occurrence of phrase)
Fermion	Bruno Pontecorvo	Pontecorvo, B. *Akad. Nauk SSSR, Ser. Fiz.* **1962**, 26, 737
Ferrocene Ferricinium ion	Robert B. Woodward Myron Rosenblum Mark C. Whiting	Woodward, R.B.; Rosenblum, M.; Whiting, M.C. *J. Am. Chem. Soc.* **1952**, 74, 3458
Flash chromatography*	William Clark Still Jr.	Still, W.C.; Kahn, M.; Mitra, A. *J. Org. Chem.* **1978**, 43, 2923
Flash photolysis (German: *blitzphotolysen*)	Lord George Porter	Porter, G. *Proc. Roy. Soc. London* **1950**, 200A, 284 Porter, G. *Disc. Faraday Soc.* **1950**, 9, 60
Fluorescence	Sir George Stokes	Stokes, G. *Proc. Roy. Soc. London* **1852**, 6, 195
Foldamer	Samuel Helmer Gellman	Appella, D.H.; Christianson, L.A.; Karle, I.L.; Powell,

		D.R.; Gellman, S.H. *J. Am. Chem. Soc.* **1996**, 118, 13071; Appella, D.H.; Christianson, L.A.; Klein, D.A.; Powell, D.R.; Huang, X.; Barch, J.J. Jr.; Gellman, S.H. *Nature* **1997**, 387, 381; Krauthaeuser, S.; Christianson, L.A.; Powell, D.R.; Gellman, S.H. *J. Am. Chem. Soc.* **1997**, 119, 11719; Gellman, S.H. *Acc. Chem. Res.* **1998**, 31, 173
Footballene	A.D.J. Haymet	Haymet, A.D.J. *J. Am. Chem. Soc.* **1986**, 108, 319
Formal synthesis	A.I. Scott F. McCapra R.L. Buchanan A.C. Day D.W. Young	Scott, A.I.; McCapra, F.; Buchanan, R.L.; Day, A.C.; Young, D.W. *Tetrahedron* **1965**, 21, 3605
Fractal	Benoit B. Mandelbrot	Mandelbrot, B. *Les objets fractals, forn, hasard et dimension*, Nouvelle Bibliotheque Scientifique: Paris, 1975
Frangomeric effect	Cyril A. Grob	Grob, C.A. *Angew. Chem. Int. Ed.* **1976**, 15, 569
Free energy	Josiah W. Gibbs Gilbert N. Lewis Merle Randall	Gibbs, J.W., *Trans. Conn. Acad*. **1876 - 1878**, 3, 108; 342; Lewis, G.N.; Randall, M. *Thermodynamics and the Free Energy of Chemical Substances*, McGraw-Hill Book Co. Inc.: New York, 1923
Frontier molecular orbital theory	Kenichi Fukui	Fukui, K.; Yonezawa, T.; Shingu, H., *J. Chem. Phys.* **1952**, 20, 722
Fuel cell*	Ludwig Mond Charles Langer	Mond, L.; Langer, C. US 409,365 (1889-08-20); US 409,366 (1889-08-20)
Fugacity*	Gilbert N. Lewis	Lewis, G.N. *Proc. Am. Acad. Arts Sci.* **1901**, 37, 49
Gas	Jan Baptista van Helmotin	1579 cited in Robins, S. *Chemistry World* **2004**, 1(1), 64
Gas liquid chromatography	A.J.P. Martin	Martin, A.J.P.; James, A.T. *Biochem. J.* **1952**, 50, 679
Gauche effect	Saul Wolfe	Wolfe, S. *Acc. Chem. Res.* **1972**, 5, 102
Gene¶ (Ger. *Gen*, short for *pangen*)	W. Johannsen	Johanssen, W. *Elementen die exacten Erblichkeitslehre*,

Genotype		1909, p. 124 Johanssen, W. *American Naturalist* **1911**, 45, 132
Genome Genomics (Ger. *genom* = **gen** + chromos**om**)	several	Kybal, J.; Brejcha, V. *Pharmazie* **1955**, 10, 752; Endo, T. *Japan J. Genet.* **1956**, 31, 109; Freese, E. *Z. Indukt. Abstamm* **1957**, 88, 388; King, R.C. *Growth* **1957**, 21, 129; Barthelmess, A. *Protoplasma* **1957**, 48, 546 Yamamoto, N.; Anderson, T.F. *Virology* **1961**, 14, 430 (first occurrence of "genomic")
Genotoxicity		
Glass electrode*	Fritz Haber	Haber, F.; Fleishmann, F. *Z. Anorg. Chem.* **1907**, 51, 245
Gluconeogenesis	Carl F. Cori Gerty T. Cori	Cori, C.F.; Cori, G.T. *J. Biol. Chem.* **1928**, 79, 309
Gluon¶	Murray Gell-Mann	Cited in Walgate, R. *Physics Bulletin* **1971**, 22, 710
Glycomics		
Glycomimetics	Stephen Hanessian	Hanessian, S.; Galeoth, N.; Rosen, P.; Oliva, P.; Babu, S. *Bioorg. Med. Chem. Lett.* **1994**, 4, 2763 Hanessian, S.; Prabhanjan, H. *Synlett* **1994**, 868
Grand unification theory (GUT)	Zalan Horvath Laszlo Palla	Horvath, Z.; Palla, L. *Phys. Lett. B* **1977**, 69B, 197 Horvath, Z.; Palla, L.; Cremmer, E.; Scherk, J. *Nucl. Phys. B* **1977**, 127B, 57
Green chemistry	Pavel Drasar H. Copaan Terrence J. Collins Paul T. Anastas	Drasar, P. *Chemicke Listy* **1991**, 85, 1144 Copaan, H. *Natuur Techniek (Utrecht)* **1992**, 60, 86 Collins, T.J. *J. Chem. Educ.* **1995**, 72, 965 Anastas, P.T.; Warner, J.C. *Green Chemistry: theory and practice*, Oxford University Press: Oxford, 1998 Anastas, P.T. *Acc. Chem. Res.* **2002**, 35, 686
Greenhouse effect	Svante Arrhenius	Arrhenius, S. *Phil. Mag.* **1896**, 41, 237
Group displacement law	Frederick Soddy Kasimir Fajans	Soddy, F. *Chem. News* **1913**, 107, 97 Fajans, K. *Ber.* **1913**, 35, 240

Hadron	Yu. V. Novozhilov V.M. Shekhter	Novozhilov, Yu.V. *Phys. Lett.* **1963**, 16, 348 Shekhter, V.M. *Vopr. Fiz. Elementarnykh Chastits* **1963**, 103
Hard and soft acids and bases	Ralph G. Pearson (suggested by Prof. Daryle Hadley Busch)	Pearson, R.G. *J. Am. Chem. Soc.* **1963**, 85, 3533
Hexokinase	Otto Meyerhoff	Meyerhoff, O. *Lancet* **1930**, 2, 1415; *Biochem. Z.* **1932**, 246, 249; *Naturwiss.* **1935**, 23, 850 Cited in Manchester, K.L. *Trends Biotech.* **1995**, 13, 511
High energy physics	H.P. Noyes	Noyes, H.P. *Physics Today* **1953**, 6(5), 14
High throughput		
Holosynthon	Michel Chanon Rene Barone	Chanon, M.; Barone, R. *Computer Aids in Chemistry*, (G. Vernon, M. Chanon, eds.) E. Horwood: Chichester, 1986, Chapter 1, p. 68
Homeosis	William Bateson	Bateson, W. *Materials for the Study of Variation*, Macmillan: London, 1894
Homoaromaticity* Homoconjugation*	Saul Winstein	Winstein, S. *J. Am. Chem. Soc.* **1959**, 81, 6524; Winstein, S.; De Vries, L. *J. Am. Chem. Soc.* **1959**, 81, 6523; Winstein, S.; Sonnenberg, J. *J. Am. Chem. Soc.* **1961**, 83, 3235; 3244
Hormesis	C. Southam J. Erlich	Southam, C.; Erlich, J. *Phytopathology* **1943**, 33, 517
Hormone (Gk: *hormo* = to excite, to set in motion)	Ernest Henry Starling	Starling, E.H. *Lancet* **1905**, 2, 339; 423; 501; 579 Cited in Armstrong, H.E.; Armstrong, E.F. *Proc. Roy. Soc. London* **1909-1910**, 82B, 588; **1913**, 86B, 561; *Annals of Botany* **1911**, 25, 507
Host-guest chemistry	Donald J. Cram	Cram, D.J.; Cram, J.M. *Science* **1974**, 183, 803; Cram, D.J. *J. Inclusion Phenomena* **1988**, 6, 397
Hybridization	Linus Pauling	Pauling, L., *The Nature of the Chemical Bond and the Structure of Molecules and Crystals*, Cornell University Press: Ithaca, N.Y., 1948, pp. 58 – 75
Hydrogen bonding	Wendell M. Latimer	Latimer, W.M.; Rodebush,

	W.H. Rodebush	W.H., *J. Am. Chem. Soc.* **1920**, 42, 1419
Hydrogen electrode*	Arnold Eucken Joel H. Hildebrand Arthur Lapworth	Eucken, A. *Z. Physik. Chem.* **1907**, 59, 72; Hildebrand, J.H. *J. Am. Chem. Soc.* **1913**, 35, 847; Hardman, R.T.; Lapworth, A. *J. Chem. Soc. Abstr.* **1913**, 101, 2249
Hyperconjugation	George W. Wheland Michael J.S. Dewar	Wheland, G.W. *J. Chem. Phys.* **1934**, 2, 474 Dewar, M.J.S., *Hyperconjugation*, Ronald Press: New York, 1962
Hypervalent	Jeremy L. Musher	Musher, J.L. *Angew. Chem. Int. Ed.* **1969**, *8*, 54.
I-strain* (internal)	Herbert C. Brown	Brown, H.C.; Fletcher, R.S.; Johannesen, R.B. *J. Am. Chem. Soc.* **1951**, 73, 212 Brown, H.C.; Gerstein, M. *J. Am. Chem. Soc.* **1950**, 72, 2926
Imaginary number	Jean Robert Argand	Argand, J.R. *Essai sur une maniere de representer les quantites imaginaires dans les constructions geometriques*, Paris, 1806
Induced current	Michael Faraday	Faraday, M. *Phil. Trans.* **1822**, 122, 125
Inductive effect	Gilbert N. Lewis	Lewis, G.N., *Valence and the Structure of Atoms and Molecules*, ACS Monograph, The Chemical Catalog Co.: New York, 1923, p. 139
Information theory	Claude E. Shannon	Shannon, C.E.; Weaver, W. *The Mathematical Theory of Communication*, University of Illinois Press: Urbana, 1949.
Infrared	William W. Coblentz	Coblentz, W.W. *Bull. Bur. Standards* **1907**, 2, 457
Insulation	Michael Faraday	Faraday, M. *Phil. Trans.* **1838**, 128, 83
Intensive and extensive property*	R.C. Tolman	Tolman, R.C. *Phys. Rev.* **1917**, 9, 2137
Intercombination*	Michael Kasha	Kasha, M. *Disc. Faraday Soc.* **1950**, 9, 14
Interference of light	Thomas Young	Young, T. *Phil. Trans.* **1804**, 94, 1
Internal conversion*	Michael Kasha	Kasha, M. *Disc. Faraday Soc.* **1950**, 9, 14
Internal return*	Saul Winstein	Winstein, S.; Heck, R. *J. Am.*

		Chem. Soc. **1952**, 74, 5584
Internal standard*	Walter Gerlach	Gerlach, W. *Die chemische Emission Spektralanalyse*, Vol. I, Leipzig, 1929
Intersystem crossing*	Michael Kasha	Kasha, M. *Disc. Faraday Soc.* **1950**, 9, 14
Intimate ion pair*	Donald J. Cram Saul Winstein	Cram, D.J. *J. Am. Chem. Soc.* **1952**, 74, 2129 Winstein, S.; Schreiber, K. *J. Am. Chem. Soc.* **1952**, 74, 2165; Winstein, S.; Clippinger, E.; Fainberg, A.H.; Robinson, G.C. Winstein, S.; De Vries, L. *J. Am. Chem. Soc.* **1954**, 76, 2597
Intron (intragenic region) Exon (extragenic region)	Walter Gilbert	Gilbert, W. *Nature* **1978**, 273, 171 Breathnach, R.; Benoist, C.; O'Hare, K.; Gannon, F.; Chambon, P. *PNAS USA* **1978**, 75, 4853; Catterall, J.F.; O'Malley, B.W.; Robertson, M.A.; Staden, R.; Tanaka, Y.; Brownlee, G.G. *Nature* **1978**, 275, 510; Murray, V.; Holliday, R. *Genetical Res.* **1979**, 34, 173 Murray, V.; Holliday, R. *FEBS Lett.* **1979**, 106, 5 Gilbert, W. *ICN-UCLA Symposia on Molecular & Cellular Biol.* **1979**, 277, 598
Ion¶ (Gk.: *ion*, wanderer; *ienai*, to go)	William Whewell Michael Faraday	Whewell, W. *letter to Michael Faraday May 5, 1834* Faraday, M. *Phil. Trans. Roy. Soc.* **1834**, 124, 79
Ion exchange resin	B.A. Adams E.L. Holmes	Adams, B.A.; Holmes, E.L. *J. Soc. Chem. Ind.* **1935**, 54, 1T
Ipso*	Charles L. Perrin	Perrin, C.L.; Skinner, G.A. *J. Am. Chem. Soc.* **1971**, 93, 3389
Isohypsic	James B. Hendrickson	Hendrickson, J.B. *J. Am. Chem. Soc.* **1971**, 93, 6847
Isosbestic point	Alfred Thiel	Thiel, A.; Dassler, A.; Wulfken, F. *Fortschritte Chem. Physik Physik. Chem.* **1924**, 18, 3
Isomer	Jakob Berzelius	Cited in Manchester, K.L. *Trends Biotech.* **1995**, 13, 511

Isorropesis (isorhopesis) (Gk.: *isorropia* = equipoise)	Edward Charles Cyril Baly Alfred Walter Stewart	Stewart, A.W.; Baly, E.C.C. *J. Chem. Soc.* **1906**, 89, 489 (given on p. 498)
Isostere	Irving Langmuir	Langmuir, I. *J. Am. Chem. Soc.* **1919**, 41, 1543
Isotope	Frederick Soddy	Soddy, F. *J. Chem. Soc.* **1911**, 99, 72
Isotope effect	O. Reitz	Reitz, O. *Z. Physik Chem.* **1936**, A177, 85
Isotopic exchange Isotopic labelling experiment	Harold C. Urey	Urey, C.; Grieff, L.J. *J. Am. Chem. Soc.* **1935**, 57, 321 Rittenberg, D.; Bleakney, W.; Urey, H.C. *J. Chem. Phys.* **1934**, 2, 48
j-j coupling	C.J. Bakker T.L. de Bruin J.S. Badami	Bakker, C.J.; de Bruin, T.L. *Z. Physik.* **1930**, 62, 32 Badami, J.S. *Nature* **1932**, 130, 697
Kairomone (Gk: *kairos*, favourable condition, advantage)	William L. Brown Jr. Thomas Eisner Robert H. Whittaker	Brown, W.L. Jr.; Eisner, T.; Whittaker, R.H. *BioScience* **1970**, 20, 21
Keto Enol	Julius Wilhelm Brühl	Brühl, J.W. *J. Prakt. Chem.* **1894**, 50, 123
Kinetic energy¶	Thomas Young William Thomson (Lord Kelvin) William John Macquorn Rankine John Tyndall	Young, T. *Natural Philosophy* **1845**, 1, 59 Thomson, W. *Phil. Mag.* **1852**, 304 Rankine, W. *Transformation of Energy* in *Scientific Papers*, 1881, p. 203 Tyndall, J. *Heat*, 1866, p. 9
Labile complex*	Henry Taube	Bennett, L.E.; Taube, H. *Inorg. Chem.* **1968**, 7, 254; Matwiyoff, N.A.; Taube, H. *J. Am. Chem. Soc.* **1968**, 90, 2796
Laser = **l**ight **a**mplification by **s**timulated **e**mission of **r**adiation	Arthur R. Schawlow Charles H. Townes	Schawlow, A.R.; Townes, C.H. *Phys. Rev.* **1958**, 112, 1940
Latent heat Specific heat	Joseph Black	Black, J. *Lectures on the Elements of Chemistry*, 1803
Law of electrolysis	Michael Faraday	Faraday, M. *Phil. Trans.* **1834**, 124, 77
Law of isomorphism	Eilhard Mitscherlich	Mitscherlich, E. *Ann. Chim.* **1822**, 19, 350
Law of mass action	Peter Waage Cato Maximilian Gulberg	Waage, P.; Gulberg, C. *Forhandlinger i Videnskabsselskabet i Christiana* **1864**, 7, 35

Law of osmotic pressure	Jacobus H. van't Hoff	Van't Hoff, J.H., *Phil. Mag.* **1888**, 26, 81
LCAO = **l**inear **c**ombination of **a**tomic **o**rbitals	Sir John E. Lennard-Jones	Lennard-Jones, J.E. *Trans. Faraday Soc.* **1929**, 25, 668
Lethal dose LD50 (median lethal dose)	J.W. Trevan Chester I. Bliss	Trevan, J.W. *Proc. Roy. Soc. London* **1927**, 101B, 483 Bliss, C.I. *Ann. Appl. Biol.* **1935**, 22, 307
Lepton	Friedrich Rinne	Rinne, F. *Die Umschau* **1920**, 24, 373; *Physik. Z.* **1920**, 21, 609; *Z. Kristall.* **1921**, 56, 408; *Recueil Trav. Chim. Pays-Bas* **1923**, 42, 833
Ligand¶ (Latin: ligandus, ligare: to bind, to tie)	L.E. Orgel John Wilfred Linnett	Orgel, L.E. *J. Chem. Soc.* **1952**, 4757 Linnett, J.W. *The Electronic Structure of Molecules: a new approach*, Methuen: London, 1964, p. 138
Ligand field theory	Carl J. Ballhausen	Ballhausen, C.J. *J. Chem. Educ.* **1979**, 56, 215; 294; 357
Lignan	Robert Downs Haworth	Haworth, R.D.; Kelly, W. *J. Chem. Soc. Abstr.* **1937**, 1645; Atkinson, J.R.; Haworth, R.D. *J. Chem. Soc. Abstr.* **1938**, 1681; Haworth, R.D.; Woodcock, D. *J. Chem. Soc. Abstr.* **1939**, 1054; 1237
Linear free energy relationship	Louis P. Hammett J.N. Bronsted K. Pedersen	Hammett, L.P. *Chem. Rev.* **1935**, 17, 125; Bronsted, J.N.; Pedersen, K. *Z. Physik. Chem.* **1924**, 108, 185
Liquid crystal	Otto Lehmann Friedrich Reinitzer	Lehmann, O. *Ann. Physik* **1890**, 41, 525; Lehmann, O. *Z. Physik. Chem.* **1890**, 5, 427 Reinitzer, F. *Monatsh. Chem.* **1888**, 9, 421
Lock and key model	Emil Fischer	Fischer, E. *Chem. Ber.* **1894**, 27, 2985; 3189 Fischer, E.; Thierfelder, H. *Chem. Ber.* **1894**, 27, 2031
Logarithm	John Napier, 8th Laird of Merchiston Henry Briggs	Napier, J. *Mirifici logarithmorum canonis descriptio*, Lyon, 1619 Briggs, H. *Logarithmorum chilias prima*, 1617 Briggs, H. *Arithmetica logarithmica, sive logarithmorum chiliades triginta*, London, 1624

Logistic curve	P.F. Verhulst	Verhulst, P.F. *Corr. Math. Et phys.* **1838**, 10, 113; Verhulst, P.F. *Nouv. Mem. de l'Acad. Roy. Sci. et Belleslett. Bruxelles* **1845**, 18, 1; **1847**, 20, 1
Logit = **log**arithm of probability uni**t** (from logistic curve) (see probit)	Joseph Berkson	Berkson, J. *Biometrics* **1951**, 7, 327
Lysozyme	Sir Alexander Fleming	Fleming, A. *Proc. Roy. Soc. London B* **1922**, 93B, 306 Fleming, A.; Allison, V.D. *Proc. Roy. Soc. London B* **1922**, 94B, 142; Fleming, A.; Allison, V.D. *Brit. J. Exp. Pathol.* **1922**, 5, 252
M(atrix)-theory		
Mach number	Jakob Ackeret	Popularized in a lecture at the ETH, Zurich in 1929. Cited in Flax, A.; Rott, N. *National Academy of Engineering (USA) Memorial Tributes* **1996**, 8, 3)
Macromolecule	Hermann Staudinger	Staudinger, H.; Fritschi, J. *Helv. Chim. Acta* **1922**, 5, 785
Magic acid	George Olah Ronald J. Gillespie	Olah, G.A.; Commeyras, A. *J. Am. Chem. Soc.* **1969**, 91, 2929 Gillespie, R.J. *Acc. Chem. Res.* **1968**, 1, 202
Maser = **m**icrowave **a**mplification by **s**timulated **e**mission of **r**adiation	W.H. Culver	Culver, W.H. *Science* **1957**, 126, 810
Materials science		
Mathematical induction	Augustus de Morgan	De Morgan, A. *An Essay on Probabilities and on their Application to Life Contingencies and Insurance Offices*, London, 1838
Matrix isolation	George C. Pimentel George Porter	Whittle, E.; Dows, D.A.; Pimentel, G.C. *J. Chem. Phys.* **1954**, 22, 1943 Becker, E.D.; Pimentel, G.C. *J. Chem. Phys.* **1956**, 25, 224 Norman, I.; Porter, G. *Nature* **1954**, 174, 58
Mean free path¶	A.E. Bate M.E. Pillow	*Mechanical Engineering* **1879**, 1, Sept. 5, p. 639 Bate, A.E.; Pillow, M.E. *Proc. Physical Soc.* **1947**, 59, 536

Meiosis (Maiosis) ¶	J. Bretland Farmer J.E.S. Moore	Farmer, J.B.; Moore, J.E.S. *Quarterly J. Microscopial Sci.* **1905**, 48, 489
Mercaptan (Lt.: *mercurius* (mercury), *captans* (seizing))		Cited in Thomson, Robert D. *Records of General Science*, **1835**, p. 110
Mero-stabilization	Alan R. Katritzky	Baldock, R.W.; Hudson, P.; Katritzky, A.R.; Soti, F. *J. Chem. Soc. Perkin Trans. I* **1974**, 1422; Baldock, R.W.; Hudson, P.; Katritzky, A.R.; Soti, F. *Heterocycles* **1973**, 1, 67
Mesoionic compounds	W. Baker B.R. Brown D.L. Hammick	Baker, W. *Endeavour* **1950**, 9, 35; Brown, B.R.; Hammick, D.L. *J. Chem. Soc.* **1950**, 628
Mesomeric effect, Mesomerism	Sir Christopher K. Ingold	Ingold, C.K., *Structure and Mechanism in Organic Chemistry*, 2nd ed., Cornell University Press: Ithaca, 1969, p. 72ff, 87
Meson	R.C. Majumdar	Majumdar, R.C. *Trans. Bose Res. Inst.* **1938**, 13, 105 (first occurrence of "meson")
Metal carbenoid	Gert Koebrich Rolf H. Fischer Hitosi Nozaki Ryoji Noyori	Koebrich, G.; Flory, K.; Fischer, R.H. *Chem. Ber.* **1966**, 99, 1793; Koebrich, G.; Fischer, R.H. *Chem. Ber.* **1968**, 101, 3219; 3208 Nozaki, H.; Noyori, R. *Yuki Gosei Kagaku Kyokaishi* **1966**, 24, 632
Metal ketyls	Wilhelm Schlenk	Schlenk, W.; Weickel, T. *Chem. Ber.* **1911**, 44, 1182 Schlenk, W.; Thal, A. *Chem. Ber.* **1913**, 46, 2840
Metallocarbene	Yves Chauvin	Soufflet, J.P.; Commereuc, D.; Chauvin, Y. *Compt. Rend. Acad. Sci. Ser. C.: Sci. Chim.* **1973**, 276, 169
Metamerism	Jakob J. Berzelius	Cited in Watts, Henry *Gmelin's Handbook of Chemistry* (translation), **1848**, p. 110
Metathesis (olefin) (Gk.: *meta* (change) + *tithemi* (place))	Nissim Calderon	Calderon, N. *Acc. Chem. Res.* **1972**, 5, 127 Calderon, N.; Chen, H.Y.; Scott, K.W. *Chem. Eng. News* **1967**, 45(41), 51
Method of least squares	Adrien Marie Legendre	Legendre, A.M. *Memoires de*

		l'Institut National des Sciences et Arts, **1810**, Part 2, 149
Method of maximum likelihood	Sir Ronald A. Fisher	Fisher, R.A. *Metron* **1921**, 1(4), 1; Fisher, R.A. *Proc. Cambr. Phil. Soc.* **1932**, 28, 257; Fisher, R.A. *Proc. Roy. Soc. A* **1934**, 144A, 285; Fisher, R.A. *Proc. Roy. Soc. A* **1934**, 146A, 1
Mitochondriomics	Walter Neupert A.S. Reichert	Reichert, A.S.; Neupert, W. *Trends in Genetics* **2004**, 20, 555
Mitosis¶ (Ger.: *mitotischen*, *mitosen*)	A. Rauber	Rauber, A. *Arkiv fur Mikr. Anat.* **1886**, 26, 622 Anon. *J. Royal Microscopial Soc.* **1887**, 163
Molecular biology	Warren Weaver	Weaver, W. *Science* **1970**, 170, 581; Weaver, W. *Ann. Report Rockefeller Foundation* **1938**, 203 - 219
Molecular chaperone	Ronald A. Laskey	Laskey, R.A.; Honda, B.M.; Mills, A.D.; Finch, J.T. *Nature* **1978**, 275, 416
Molecular recognition	Jean Marie Lehn	Lehn, J.M. *Struct. Bonding* **1973**, 16, 1
Molecular "ship in a bottle"	Norman Herron	Herron, N. *Inorg. Chem.* **1986**, 25, 4714
Molecule	Amedeo Avogadro	Avogadro, A. *J. de Physique* **1811**, 73, 58
Monte Carlo method (named after Monte Carlo casino in Monaco)	N. Metropolis S. Ulam	Metropolis, N.; Ulam, S. *J. Am. Stat. Assoc.* **1949**, 44, 335
Multi-component reactions (organic synthesis)	K. Ley R. Nast G. Hesse H. Witte W. Gulden	Ley, K.; Ehozler, U.; Nast, R. *Angew. Chem.* **1965**, 77, 544; Ley, K.; Nast, R. *Angew. Chem.* **1965**, 77, 544; Hesse, G.; Witte, H.; Gulden, W. *Angew. Chem.* **1965**, 77, 591
Multi-pin technology	B.A. Bunin J.A. Ellman	Bunin, B.A.; Ellman, J.A. *J. Am. Chem. Soc.* **1992**, 114, 10997
Multiwavelength anomalous dispersion (MAD)	Jerome Karle	Karle, J. *Acta Crystal. A* **1984**, 40A, 366
Mutarotation	Thomas H. Lowry	Lowry, T.H. *J. Chem. Soc.* **1899**, 75, 211 Cited in Pigman, W.; Isbell, H.S. *Adv. Carbohydrate Chem.* **1968**, 23, 11
Naked ion	Sture Fronaeus	Fronaeus, S. *Acta Chem. Scand.* **1956**, 10, 492

Nanotechnology	Norio Taniguchi K. Eric Drexler Josef Michl	Taniguchi, N. *Kinzoku Hyomen Gijutsu* **1978**, 29, 220 Kaszynkski, P.; Drexler, K.E. *Engines of Creation*, Anchor Press: New York, 1986 Michl, J. *J. Am. Chem. Soc.* **1988**, 110, 5225
Neutrino ("the little neutral one")	Enrico Fermi	Fermi, E. *Z. Physik* **1934**, 89, 522
Neuron	Heinrich Wilhelm Gottfried Waldeyer-Hartz	Waldeyer, W. *Deut. Med. Wochenschr.* **1891**, 1213; 1244; 1267; 1287; 1331; 1350
Neutron	Sir James Chadwick	Chadwick, J. *Nature* **1932**, 129, 312
Non-classical ion	Saul Winstein	Winstein, S.; Trifan, D. *J. Am. Chem. Soc.* **1952**, 74, 1154
Normal salt effect	Sir Christopher K. Ingold Saul Winstein	Bateman, L.C.; Church, M.G.; Hughes, E.D.; Ingold, C.K.; Taher, N.A. *J. Chem. Soc.* **1940**, 979 Fainberg, A.H.; Winstein, S. *J. Am. Chem. Soc.* **1956**, 78, 2763
Nuclear fission	Otto Frisch	Meitner, L.; Frisch, O.R. *Nature* **1939**, 143, 239; 471
Nuclear shell model	Maria Goeppert-Mayer	Mayer, M.G. *Phys. Rev.* **1949**, 75, 1969
Octant rule	Carl Djerassi Robert B. Woodward William Moffit	Moffitt, W.; Woodward, R.B.; Moscowitz, A.; Klyne, W.; Djerassi, C. *J. Am. Chem. Soc.* **1961**, 83, 4013; Moffit, W. *J. Chem. Phys.* **1956**, 25, 467
Octet rule	Irving Langmuir Gilbert N. Lewis	Langmuir, I. *J. Am. Chem. Soc.* **1914**, 38, 2221; **1919**, 41, 868; 1543; **1920**, 42, 274; Lewis, G.N., *Valence and the Structure of Atoms and Molecules*, ACS Monograph, The Chemical Catalog Co.: New York, 1923.
Olation and oxolation	Arthur W. Thomas	Thomas, A.W. *J. Am. Leather Chemists Assoc.* **1933**, 28, 2; Thomas, A.W.; Kremer, C.B. *J. Am. Chem. Soc.* **1935**, 57, 1821
Operators	Oliver Heaviside	Heaviside, O. *Proc. Roy. Soc. London A* **1893**, 52, 504
Operon	Francis Jacob Jacques Monod	Jacob, F.; Perrin, D.; Sanchez, C.; Monod, J. *Compt. Rend.*

		Acad. Sci. **1960**, 250, 1727
Optical activity	Jean-Baptiste Biot	Biot, J.B. *Mem. Acad. Sci. Inst.* **1819**, 2, 41
ORTEP (Oak Ridge Thermal Ellipsoid Plot) Program	Carroll Kenneth Johnson	Johnson, C.K. in *Crystallographic Computing, Proc. Int. Summer School* (S.R. Hall, ed.) Munksgaard: Copenhagen, 1970, p. 227
Osazone*	Emil Fischer	Fischer, E. *Chem. Ber.* **1908**, 41, 73; Fischer, E.; Zach, K. *Chem. Ber.* **1911**, 44, 132
Osmotic force	Thomas Graham	Graham, T. *Phil. Trans.* **1854**, 144, 177; Graham, T. *Ann. Chim.* **1855**, 45, 5
Overvoltage (uberspannung)*	William August Caspari	Caspari, W.A. *Z. Physik. Chem.* **1899**, 30, 89
Oxidation number	Otis Coe Johnson	Johnson, O.C. *Chem. News* **1880**, 42, 51
Oxocarbon	Robert West	West, R.; Powell, D.L. *J. Am. Chem. Soc.* **1963**, 85, 2577
Oxotropy	Ernest A. Braude Sir E.R.H. Jones	Braude, E.A.; Jones, E.R.H. *J. Chem. Soc.* **1944**, 436 Braude, E.A. *J. Chem. Soc.* **1944**, 443
Ozone (Gk. *Ozein* = to smell)	Christian F. Schönbein	Schönbein, C. *Ber. Verh. Nat. Ges. Basel* **1847**, 7, 4; 7
Parachor*	Samuel Sugden	Sugden, S. *J. Chem. Soc.* **1924**, , 125, 1177
Paradigm shift	Thomas Kuhn	Kuhn, T. in *The Essential Tension*, 3rd U. Utah Res. Conf. On the Identification of Scientific Talent, Salt Lake City, U. Utah Press, 1959 Kuhn, T. *The Structure of Scientific Revolutions*, University of Chicago Press: Chicago, 1962
Parahydrogen	Paul Harteck	Bonhoeffer, K.F.; Harteck, P. *Naturwiss.* **1929**, 17, 182
Particle accelerator	Edwin M. MacMillan	MacMillan, E.M. *Phys. Rev.* **1945**, 68, 143
Particle physics	John A. Wheeler	Wheeler, J.A. *Am. Scientist* **1947**, 35, 177
Partition function	Karl F. Herzfeld	Herzfeld, K.F.*Kinetische Theorie der Wärme*, Braunschweig, 1925
PCR (**p**olymerase **c**hain **r**eaction) method	Karl Mullis	Mullis, K.; Faloona, F.; Scharf, S.; Saiki, R.; Horn, G; Erlich, H. *Cold Spring Harbor Symp. Quant. Biol.* **1986**, 51,

		260
Peptidomimetics	P.S. Farmer	Farmer, P.S. *Medicinal Chemistry* **1980**, 11, 119; Farmer, P.S.; Ariens, E.J. *Trends Pharmacol. Sci.* **1982**, 3, 362
Per-* (Latin: *per*, thoroughly; hence, thoroughly oxidized as in peracids which have elements at highest oxidation states)	T. Thomson	Thomson, T. *A System of Chemistry*, Edinburgh, 1804
Peroxy acid	William C. Bray Don M. Yost	Footnote in Yost, D.M. *J. Am. Chem. Soc.* **1926**, 48, 152
pH (potency of hydrogen)*	Sophus P.L. Sorensen	Sorensen, S.P.L. *Compt. Rend. Trav. Lab. Carlsberg*, **1909**, 8, 1
Phage	Frederick Twort Felix D'Herelle	D'Herelle, F. *Compt. Rend. Seances de la Soc. Biol. Et de Ses Filiales* **1924**, 90, 25; 27; 481; D'Herelle, F. and Smith, G.H. (eds.) *The Bacteriophage: its role in immunity*, Williams & Williams Co.: Baltimore, 1923; D'Herelle, F. and Smith, G.H. (eds.) *The Bacteriophage and its Clinical Applications* Baillietre Tindall & Cox: London, 1931
Pheromone	P. Karlson M. Lüscher	Karlson, P.; Lüscher, M. *Nature* **1959**, 183, 55
Phonon¶	J. Frenkel I.Pomeranchuk L.Gurevich	Frenkel, J. *Wave Mechanics*, 1932, p. 267 Pomeranchuk, I. *Zh. Eksp. Teor. Fiz.* **1941**, 11, 226; *J. Physics (Moscow)* **1941**, 4, 357; Akhiezer, A.; Pomeranchuk, I. *J. Physics (Moscow)* **1944**, 8, 216; **1945**, 9, 93; Gurevich, L. *Zh. Eksp. Teor. Fiz.* **1946**, 16, 193; 416; *J. Physics (Moscow)* **1945**, 9, 477; **1946**, 10, 67
Phosgene = **pho**to + **gene**rated	Sir Humphry Davy	Davy, H. *Phil. Trans.* **1812**, 102, 144 (discovery) Wilm, T.; Wischin, G. *Ann. Chem.* **1868**, 147, 150 (*phosgen* name)
Phosphorescence¶	Richard Kirwan	Kirwan, R. *Elements of*

	Thomas Thomson	*Mineralogy*, 2nd ed., J. Nichols: London, 1796, Vol. 1, p. 27 Thomson, T. *Chemistry of Organic Bodies, Vegetables*, London, 1838, p. 627
Phosphorolysis	Jakub K. Parnas	Parnas, J.K.; Baranowski, T. *Compt. Rend. Soc. Biol.* **1935**, 120, 307
Photoaffinity labelling	A.Singh E.R. Thornton Frank H. Westheimer	Singh, A.; Thornton, E.R.; Westheimer, F.H. *J. Biol. Chem.* **1962**, 237, 3006
Photodynamic sensitization	Albert Eidinow	Eidinow, A. *Proc. Roy. Soc. Med.* **1935**, 28, 33
Photodynamic effect	W.R. Jones J.K. Landquist N. Senior	Jones, W.R.; Landquist, J.K.; Senior, N. *Brit. J. Pharmacol. Chemotherapy* **1952**, 7, 486
Photodynamic therapy	several	Diamond, I.; Granelli, S.G.; McDonagh, A.F.; Nielsen, S.; Wilson, C.B.; Jaenicke, R. *Lancet* **1972**, 2, 1175
Photon	Albert Einstein Sir George Paget Thomson Gilbert N. Lewis	Einstein, A. *Ann. Physik* **1905**, 17, 132 ("light quantum") Thompson, G.P. *Proc. Roy. Soc. London* **1923**, 104A, 115 ("light darts") Lewis, G.N. *Nature* **1926**, 118, 74 ("photon")
Plasma*	Irving Langmuir	Tonks, L.; Langmuir, I. *Phys. Rev.* **1929**, 34, 876; *Phys. Rev.* **1929**, 33, 1070
Plastic¶ (Gk. *Plastein* = to form, to shape)	Ben Jonson	Jonson, B. *The Magnetick Lady, or humors reconcild*, 1632
plastic explosive¶	C.E. Bichel L. Desvaux	Bichel, C.E. GB 16,882 (1906) trinitrotoluol liquid resin L. Desvaux GB 9313 (1908) Worden, E.C. *Nitrocellulose Industry*, 1911, p. 630, 708
plastic flow¶		Anon. *J. Franklin Inst.* **1877**, 104, 228 (refers to Kick, F.; Polak, F. *Dingler's Polytech. J.* **1877**, 224, 465)
plastic materials	John Tyndall	Tyndall, J. *The Glaciers of the Alps*, 1860, p. 349

	Edward C. Worden	Worden, E.C. *Nitrocellulose Industry*, Constable: London, 1911, p. 630, 691, 708
	Cathelineau Fleury	Cathelineau; Fleury FR 354,942 (1905)
plastic (polymer)	Leo H. Baekeland	Baekeland, L.H. *J. Industrial Eng. Chem.* **1909**, 1, 149 Worden, E.C. *Nitrocellulose Industry*, 1911, p. 691 Crane, J.E. in A. Rogers *Industrial Chemistry*, (2nd ed.), 1915, p. 914
Plastic surgery	Sir John Eric Erichsen	Erichsen, J. *Science and Art of Surgery*, Blanchard & Lee: London, 1853, p. 388, 665
PMO = **p**erturbational **m**olecular **o**rbital	Michael J.S. Dewar	Dewar, M.J.S. *The PMO Theory of Organic Chemistry*, Plenum: New York, 1976
Polarization of light	Etienne Louis Malus	Malus, E. *Mémoire sur le nouveaux phénomènes d'optique*, **1811**, 2, 291
Polarography*	Jarovsky Heyrovsky	Heyrovsky, J.; Shikata, M. *Rec. Trav. Chim. Pays-Bas* **1925**, 44, 496
Polyketide	John Norman Collie	Collie, J.N. *J. Chem. Soc.* **1907**, 91, 1806
Polymer¶ (Gk. *Poly* (many) + *meros* (parts))	Sir Henry E. Roscoe Wallace H. Carothers	Roscoe, H.E. *Lessons in Elementary Chemistry*, 1866, p. 314 referring to cyanuric acid as a polymer of cyanic acid Carothers, W.H. *J. Am. Chem. Soc.* **1929**, 51, 2548
Positron	Carl D. Anderson	Anderson, C.D. *Phys. Rev.* **1933**, 43, 491
Potential*	George Green	Green, G. *Essay on the Application of Mathematical Analysis to the Theory of Electricity and Magnetism*, 1828
Potential difference		
Potential energy¶	Leonard Euler William John Macquorn Rankine William Thomson (Lord	Euler, L. *Methodus inveniendi lineas curvas*, 1744, p. 246 Rankine, W. *Transformation of Energy* in *Scientific Papers*, 1881, p. 203 Thomson, T.; Tait, P.G. *Principles of Mechanics and*

	Kelvin) Peter Guthrie Tait	*Dynamics (A Treatise on the Elementary Dynamics)*, Dover: New York, 1868, 1962, p. 74
Potential energy surface	René Marcelin	Marcelin, R. *J. Chim. Phys.* **1913**, 10, 1913
Potential function¶	George Green George M. Minchin	1828, Green, G. *Applications of Mathematical Analysis to Electricity and Magnetism*, in *Mathematical Papers*, 1871 Minchin, G.M. *Uniplanar Kinematics of Solids and Fluids*, 1882, p. 135
Principle of least motion	Edward Teller	Rice, F.O.; Teller, E. *J. Chem. Phys.* **1938**, 6, 489
Principle of microscopic reversibility	Sir Christopher K. Ingold	Ingold, C.K., *Structure and Mechanism in Organic Chemistry*, 2nd ed., Cornell University Press: Ithaca, 1969, p. 250 – 251
Principle of nonperfect synchronization	Claude F. Bernasconi	Bernasconi, C.F. *Tetrahedron* **1985**, 41, 3219
Principle of solubility product	Walter Nernst	Nernst, H.W. *Z. Physik. Chem.* **1889**, 4, 372
Prion = **pr**oteinaceous **i**nfectious particle + **on**	Stanley B. Prusiner	Prusiner, S.B. *Science* **1982**, 216, 136; Diener, T.O.; McKinley, M.P.; Prusiner, S.B. *PNAS USA* **1982**, 79, 5220; Prusiner, S.B.; Hadlow, W.J.; Eklund, C.M.; Race, R.E. *PNAS USA* **1977**, 74, 4656
Probe technique	Juan C. (Tito) Scaiano	Small, R.D.; Scaiano, J.C. *J. Am. Chem. Soc.* **1978**, 100, 296; Paul, H.; Small, R.D. Jr.; Scaiano, J.C. *J. Am. Chem. Soc.* **1978**, 100, 4520; Small, R.D. Jr.; Scaiano, J.C. *Chem. Phys. Lett.* **1977**, 48, 354
Probit = **prob**ability un**it**	Chester I. Bliss	Bliss, C.I. *Science* **1934**, 79, 38; 409
Prokaryote	P. Griesbrecht	Griesbrecht, P. *Zentralblatt Bakter. Parasit. Infektionskrankheiten und Hygiene* **1964**, 194, 535
Protecting group	Jocelyn F. Thorpe William H. Perkin Jr.	Lees, N.; Thorpe, J.F. *Proc. Chem. Soc.* **1908**, 23, 189 Perkin, W.H. Jr. *Proc. Chem. Soc.* **1908**, 23, 166 Lees, N.; Thorpe, J.F. *Trans. Chem. Soc.* **1908**, 92, 1282

Protein (Gk. *Proteios* = primitive) named for the prime importance of compounds	Jakob J. Berzelius	1868 (letter to Gerardus Mulder) Cited in Leicester, H.M. in *Dictionary of Scientific Biography*, (Gillispie, C., ed.) Charles Scribner and Sons: New York, 1980, Vol. 2, p. 95
Protein first hypothesis	Sidney W. Fox	Fox, S.W. *Bioorg. Chem.* **1977**, 3, 21; Fox, S.W.; Dose, K. *Molecular Evolution and the Origin of Life*, Marcel Dekker Inc.: New York, 1977
Proteome Proteomics	several	Wasinger, V.C. et al. *Electrophoresis* **1995**, 16, 1090 Kahn, P. *Science* **1995**, 270, 369 Swinbanks, D. *Nature* **1995**, 378, 653
Proton	Ernest Rutherford	Cited in Lodge, O. *Nature* **1920**, 106, 467
Proton inventory technique	Richard L. Schowen	Schowen, K.B.; Schowen, R.L. *Methods Enzymol.* **1982**, 87C, 551
Prototropy	Thomas M. Lowry	Burgess, H.; Lowry, T.M. *J. Chem. Soc.* **1924**, 125, 2081; Lowry, T.M. *J. Chem. Soc.* **1927**, 2554; Lowry, T.M. *Chem. Rev.* **1928**, 4, 231; Lowry, T.M.; MacConkey, C.A.H.; Burgess, H. *J. Chem. Soc.* **1928**, 1333
Pseudo-asymmetric	Hans Landolt	Landolt, H. *Das optische Drehungsvermögen organischer Substanzen und dessen praktische Anwendungen*, 2nd ed., F. Vieweg: Braunschweig, 1898; cited in Mislow, K. *Chirality* **2002**, 14, 126
Pseudorotation	Richard S. Berry	Berry, R.S., *J. Chem. Phys.* **1960**, 32, 933
Pulsar = pulse + ar (akin to quasar)	Antony Hewish	Hewish, A.; Bell, S.J.; Pilkington, J.D.H.; Scott, P.F.; Collins, R.A. *Nature* **1968**, 217, 709
"Push-pull" mechanism	Charles Gardner Swain	Swain, C.G. *J. Am. Chem. Soc.* **1948**, 70, 1119; Swain, C.G.; Eddy, R.W. *J. Am. Chem. Soc.* **1948**, 70, 2989

"Push-pull" substitution	Alexander T. Balaban	Balaban, A.T. *Rev. Roumaine Chim.* **1971**, 16, 725; Balaban, A.T.; Caproiu, M.T.; Negoita, N.; Baicau, R. *Tetrahedron* **1977**, 33, 2249
Quanta, quantum	Max Planck	Planck, M. *Ann. Physik* **1900**, 1, 69
Quantum chromodynamics¶	H. Fritzsch Murray Gell-Mann	Fritzsch, H.; Gell-Mann, M.; Minkowski, P. *Phys. Lett. B* **1975**, 59, 256 Close, F.E. *Nature* **1976**, 262, 538
Quantum dot	several	Reed, M.A.; Bate, R.T.; Bradshaw, K.; Duncan, W.M.; Frensley, W.R.; Lee, J.W.; Shih, H.D. *J. Vacuum Sci. Tech. B* **1986**, 4, 358
Quantum electrodynamics (QED)	I. Tamm	Tamm, I. *Z. Physik* **1930**, 62, 545
Quantum leap	R.G. Loyarte R. Grinfeld W.S. Ross	Loyarte, R.G.; Grinfeld, R. *Estudio Cienc.* **1929**, 89, 103 Ross, W.S. *Dental Student* **1972**, 50, 74
Quantum mechanical tunnelling	Eugene P. Wigner	Wigner, E.P. *Z. Physik. Chem.* **1932**, B19, 203
Quantum yield¶	J.R. Bates Hugh S. Taylor Emil Warburg	Bates, J.R.; Taylor, H.S. *J. Am. Chem. Soc.* **1927**, 49, 2438 (refers to Warburg, E. *Sitzb. Preuss. Akad. Wiss.* **1911**, 746; **1912**, 216
Quark (mumbling of "quart")	Murray Gell-Mann	Gell-Mann, M. *Physics Lett.* **1964**, 8, 214 Feynman, R.P.; Gell-Mann, M.; Zweig, G. *Phys. Rev. Lett.* **1964**, 13, 678 From phrase "quirk of nature" cited in Serber, R. with Crease, R.P. *Peace & War: Reminiscences of a Life on the Frontiers of Science*, Columbia University Press: New York, 1998, p. 200; Cited in Hargittai, I. *Road to Stockholm* Oxford U. Press: Oxford, 2002, p. 190 From phrase "three quarks for Muster Mark" in James Joyce's *Finnegan's Wake* Cited in Wiggins, A.W., Wynn, C.M. *The Five Biggest*

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Quasar = **qua**si-stell**ar** radio source¶	H.Y. Chiu	Chiu, H.Y. *Physics Today* **1964**, 17[5], 21 *Observer* **1964**, June 14
Quaterene	George F Wright	Ackman, R.G.; Brown, W.H.; Wright, G.F *J. Org. Chem.* **1955**, 20, 1147
Qubit (**qu**antum + **bit**)	Benjamin Schumacher	Schumacher, B. *Phys. Rev. A* **1995**, 51, 2738
QSAR = **q**uantitative **s**tructure-**a**ctivity **r**elationship	Corwin Hansch	Hansch, C.; Steward, A.R. *J. Med. Chem.* **1964**, 7, 691; Hansch, C.; Deutsch, E.W. *J. Med. Chem.* **1965**, 8, 705; Hansch, C.; Steward, A.R.; Iwasa, J.; Deutsch, E.W. *Molec. Pharmacol.* **1965**, 1, 205; Hansch, C.; Deutsch, E.W. *Biochim. Biophys. Acta* **1966**, 112, 381; 126, 117
R (universal gas constant)	Benoit-Pierre Emile Clapeyron	Clapeyron, B.P.E. *J. Ecole Polytechn.* **1836**, 14, 153; *Ann. Physik* **1843**, 59, 446
Radar = **ra**dio **d**etecting **a**nd **r**anging (American term adopted internationally in 1944) Note: (C)RDF=(**c**athode) **r**ay **d**irection **f**inder (British term)	Sir Robert Alexander Watson-Watt	Watson-Watt, R. *Nature* **1945**, 156, 319; Watt, R.A.W.; Wilkins, A.F.; Bowen, E.G. *Proc. Roy. Soc. London* **1937**, 161A, 181; Watt, R.A.W.; Bainbridge-Bell, L.H.; Wilkins, A.F.; Bowen, E.G. *Nature* **1936**, 137, 866; Watt, R.A.W.; Herd, J.F.; Bainbridge-Bell, L.H. *Applications of the cathode-ray oscillograph in radio research*, London, 1933; Watt, R.A.W.; Bainbridge-Bell, L.H. *Nature* **1933**, 131, 657
Radiationless transition*	Michael Kasha	Kasha, M. *Disc. Faraday Soc.* **1950**, 9, 14
Radical (Latin: *radix*, root)	Antoine Lavoisier	Cited in Gomberg, M. *Chem. Rev.* **1924**, 1, 91
Radical anion (anionradikale) Radical cation (kationradikale)	E.Z. Weitz	Weitz, E.Z. *Z. Elektrochem.* **1928**, 34, 538
Radioactive tracer	Friedrich A. Paneth George Hevesy	Paneth, F.A.; Hevesy, G. *S.B. Acad. Wiss. Wien Abt Iia* **1913**, 122, 993
Rate constant	Oscar K. Rice Herman C. Ramsperger	Rice, O.K.; Ramsperger, H.C. *J. Am. Chem. Soc.* **1927**, 49, 1617

Rate controlling step	James B. Conant	Conant, J.B.; Pratt, M.F. *J. Am. Chem. Soc*. **1926**, 48, 2468 Conant, J.B.; Evans, M.W. *J. Am. Chem. Soc.* 1929, 51, 1925 Conant, J.B.; Aston, J.G.; Tongberg, C.O. *J. Am. Chem. Soc.* **1930**, 52, 407
Rate determining step	W.C. Bray Henry Eyring	Cuy, E.J.; Bray, W.C. *J. Am. Chem. Soc*. **1924**, 46, 1786 Eyring, H. *J. Chem. Phys.* **1935**, 3, 107
Rate determining heterolysis	Sir Christopher K. Ingold	Hughes, E.D.; Ingold, C.K.; Reed, R.I. *Nature* **1946**, 158, 448
Rate limiting step	Frank H. Westheimer	Westheimer, F.H.; Segel, E.; Schramm, R. *J. Am. Chem. Soc*. **1947**, 69, 773
Reaction intermediate	James F. Norris Julius Stieglitz	Norris, J.F. *Am. Chem. J.* **1907**, 38, 627 Stieglitz, J. *Am. Chem. J.* **1899**, 21, 101
Reactivity-selectivity principle	Bernd Giese	Giese, B. *Acc. Chem. Res.* **1984**, 17, 438
Real time	World War II term for combat strategies that evolved on the battlefield based on fresh information received about the enemy (e.g. Rommel vs. Montgomery in battle of El-Alamein)	Kalman, R.E.; Lapidus, L.; Shapiro, E. *Proc. Joint Symp. Instr. Computation Process Develop., Plant Design London* **1959**, 6 (first occurrence of "real time" in Chemical Abstracts) *Mathematical Tables and other Aids to Computation*, 1953, p. 73
Recoil	Otto Hahn Lise Meitner	Hahn, O. *Z. Physik* **1909**, 10, 81; Hahn, O.; Meitner, L. *Ber. Phys. Gesell.* **1909**, 11, 55
Recombinant DNA	Paul Berg	Berg, P.; Ofengand, E.J. *Proc. Natl. Acad. Sci. USA* **1958**, 44, 78
Resonance Resonance spectra	Harry C. Jones Horace S. Uhler R.W. Wood	Jones, H.C.; Uhler, H.S. *Am. Chem. J.* **1907**, 37, 207 Wood, R.W. *Phil. Mag.* **1908**, 15, 581
Restriction enzyme	Hamilton Othanel Smith	Smith, H.O.; Wilcox, K.W. *J. Mol. Biol.* **1970**, 51, 379

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Retrosynthesis	Elias J. Corey	Sheehan, J.C.; Buhle, E.L..; Corey, E.J.; Laubach, G.D.; Ryan, J.J. *J. Am. Chem. Soc.* **1950**, 72, 3828
Rheochor	J. Newton Friend William D. Hargreaves	Friend, J.N.; Hargreaves, W.D. *Phil. Mag.* **1943**, 34, 643
Ribozyme (**ribo**nucleotide + **zyme**) RNA as catalysts	Thomas Cech Sidney Altman	Waring, D.B.; Scazzocchio, C.; Brown, T.A.; Davies, R.W. *J. Mol. Biol.* **1983**, 167, 595 Inoue, T.; Sullivan, F.X.; Cech, T.R. *Cell* **1985**, 43(Pt. 1), 431 Altman, S. *Cell* **1984**, 36, 237 Bass, B.L.; Cech, T.R. *Nature* **1984**, 308, 820
RNA world	Walter Gilbert	Gilbert, W. *Nature* **1986**
Robust (statistics term)	George E.P. Box	Box, G.E.P.; Watson, G.S. *Biometrika* **1962**, 49, 93
Roton	Lev D. Landau V.P. Peshkov (name suggested by I.E. Tamm)	Landau, L.D.; Khalatnikov, I.M. *Izv. Akad. Nauk SSSR, Ser. Fiz.* **1948**, 12, 216; Landau, L.D. *J. Physics (Moscow)* **1947**, 11, 91; Tisza, L. *Phys. Rev.* **1947**, 72, 838; Peshkov, V.P. *Zh. Eksp. Teor. Fiz.* **1946**, 16, 1000; *J. Physics (Moscow)* **1946**, 10, 389
Rubber	Joseph Priestley	1770 cited in Chenier, Philip J. *Survey of Industrial Chemistry*, 3rd ed., Kluwer/Plenum: New York, 2002, p. 330
Salting out effect	H. Fuhner	Fuhner, H. *Chem. Ber.* **1909**, 42, 887

Sample space	Richard von Mises	Von Mises, R. *Math. Zeitschr.* **1919**, 4, 1
Sandwich structure	Philip F. Eiland Ray Pepinsky	Eiland, P.F.; Pepinsky, R. *J. Am. Chem. Soc.* **1952**, 74, 4971
Sarcophagine	Alan M. Sargeson	Lay, P.A.; Sargeson, A.M. *Inorg. Chem.* **1986**, 25, 4801
Scaffold		
SCF = **s**elf **c**onsistent **f**ield	Douglas R. Hartree John C. Slater	Hartree, D.R. *Proc. Cambr. Phil. Soc.* **1928**, 24, 111; Slater, J.C. *Phys. Rev.* **1928**, 32, 39
Scientist*¶	William Whewell	Whewell, W. *The Philosophy of the Inductive Sciences Founded Upon their History*, 1840, p. 113; Whewell, W. *Blackw. Mag.* **1840**, 48, 273
Self-induction	Joseph Henry	Henry, J. *Am. J. Sci.* **1832**, 22, 403
Semiconductor*	A. Eucken	Eucken, A.; Gehlhoff, G. *Ber. Physik. Ges.* **1912**, 169
Semi-permeable*	Jacobus H. van't Hoff	Van't Hoff, J.H. *Phil. Mag.* **1888**, 26, 81
Sensitizer¶	G. Dawson	Dawson, G. *Hardwich's Manual of Photography*, 1873, p. 132 *Anthony's Photography Bulletin*, 1889, p. 314
Sepulchrate	Alan M. Sargeson	Creaser, I.I.; Harrowfield, J.M.; Herlt, A.J.; Sargeson, A.M.; Springborg, J.; Geue, R.J.; Snow, M.R. *J. Am. Chem. Soc.* **1977**, 99, 3181
Shiftamer	Roald Hoffmann	Tantillo, D.J.; Hoffmann, R. *Angew. Chem. Int. Ed.* **2002**, 41, 1033 Tantillo, D.J.; Hoffmann, R. *J. Am. Chem. Soc.* **2002**, 124, 6836
Shim, shimming		
Shotgun sequencing	several	Garapin, A.C. et al. *Cell* **1978**, 14, 629 Staden, R. *Nucl. Acids Res.* **1980**, 8, 3673
Sigma bond* Pi bond*	Robert S. Mulliken Wendell M. Latimer W.F. Libby Odd Hassel Raymond Daudel C.A. Coulson	Mulliken, R.S. *Phys. Rev.* **1928**, 32, 186; Latimer, W.M., Libby, W.F. *J. Chem. Phys.* **1933**, 1, 133; Buu, H.; Daudel, R. *Rec. Trav. Chim. Pays-Bas* **1946**, 65, 731; Bastiansen, O.;

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Sigma and pi aromatic complexes	Herbert C. Brown	Brown, H.C.; Brady, J.D. *J. Am. Chem. Soc.* **1952**, 74, 3570; Kilpatrick, M.; Luborsky, F.E. *J. Am. Chem. Soc.* **1953**, 75, 577; Olah, G.A.; Kuhn, S.J.; Pavlath, A. *Nature* **1956**, 178, 693; Brown, H.C.; Stock, L.M. *J. Am. Chem. Soc.* **1957**, 79, 1421; Olah, G.A.; Kuhn, S.J.; Pavlath, A. *J. Am. Chem. Soc.* **1958**, 80, 6535; 6541; Doering, W.v.E. et al. *Tetrahedron* **1958**, 4, 178
Silicone*¶	Friedrich Wöhler	Wöhler, F. *Ann. Chem. Pharm.* **1863**, 127, 257 (stated on p. 263) Wöhler, F. *Chem. News* **1863**, Oct. 10, 171; Oct. 17, 183
Simplex method of optimization	George Dantzig	Dantzig, G. *Maximization of a linear function of variables subject to linear inequalities*, in Activity Analysis of Production and Allocation, Cowles Commission Monograph No. 13, Wiley: NY, 1951, pp. 339 – 347
Site-directed mutagenesis	Michael Smith	Winter, G.; Fersht, A.R.; Wilkinson, A.J.; Zoller, M.; Smith, M. *Nature* **1982**, 299, 756
Smart catalyst	David E. Bergbreiter	Bergbreiter, D.E. et al.

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SN1 (substitution nucleophilic unimolecular) SN2 (substitution nucleophilic bimolecular) mechanisms	Edward D. Hughes Sir Christopher K. Ingold	Hughes, E.D. *J. Am. Chem. Soc.* **1935**, 57, 708 Ingold, C.K. *Chem. Rev.* **1934**, 15, 225
SNR1 (aromatic substitution nucleophilic radical unimolecular)	Joseph F. Bunnett	Kim, J.K.; Bunnett, J.F. *J. Am. Chem. Soc.* **1970**, 92, 7463; 7464
Soliton	N.J. Zabusky Martin D. Kruskal	Zabusky, N.J.; Kruskal, M.D. *Phys. Rev. Lett.* **1965**, 15, 240 Gardner, C.S.; Greene, J.M.; Kruskal, M.D.; Miura, R.M. *Phys. Rev. Lett.* **1967**, 19, 1095
Solute	Frederick G. Donnan	Donnan, F.G. *Nature* **1894-1895**, 51, 200; Pope, W.J. *Nature* **1936**, 137, 782
Solvent participation*	Saul Winstein	Winstein, S.; Brown, M.; Schreiber, K.C.; Schlesinger, A.H. *J. Am. Chem. Soc.* **1952**, 74, 1140
Solvolysis	Louis P. Hammett	Steigman, J.; Hammett, L.P. *J. Am. Chem. Soc.* **1937**, 59, 2536
Sonar = **so**und **na**vigation **r**anging¶	U.S. Navy	U.S. Navy Press Release, April 6, 1946
Space-time-yield	Harold Cecil Greenwood	Haber, F.; Greenwood, H.C. *Z. Elektrochem.* **1915**, 21, 251 US 1312534 (1919-08-12) Synthetic Ammonia
Special salt effect	Saul Winstein	Winstein, S.; Clippinger, E.; Fainberg, A.H.; Robinson, G.C. *J. Am. Chem. Soc.* **1954**, 76, 2597
Special theory of relativity	Albert Einstein	Einstein, A. *Ann. Physik* **1905**, 17, 891
Spin	George E. Uhlenbeck Samuel A. Goutsmit	Uhlenbeck, G.; Goutsmit, S.A. *Naturwiss.* **1925**, 13, 953
Split and pool technique	K.C. Nicolaou	Nicolaou, K.C.; Xiao, X.Y.; Parandoosh, Z.; Senyei, A.; Nova, M.P. *Angew. Chem. Int. Ed.* **1995**, 34, 2289
Standard deviation	Karl Pearson	Pearson, K. *Phil. Trans. Roy. Soc. A* **1894**, 185, 71
The Standard Model		1974
State function		

Stem cell¶	Adam Sedgwick Carl Claus Edmund Bleecher Wilson Warren Andrew	Claus, C. (transl. A. Sedgwick) *Elementary Textbook of Zoology*, Macmillan: New York, 1890, Vol. 2, p. 79 Wilson, E.B. *The Cell in Development and Inheritance*, Macmillan: New York, 1896, p. 111 Andrew, W. *Textbook of Comparative Histology*, New York U Press: New York, 1959, p. 234
Steric effect	Victor Meyer	Meyer, V. *Chem. Ber.* **1894**, 27, 510
Stereochemistry	Victor Meyer	1890 cited in Mislow, K. *Chirality* **2002**, 14, 126; Meyer, V. *Chem. Ber.* **1888**, 21, 789; *Chem. Ber.* **1890**, 23, 568
Stereoelectronic	Elias J. Corey	Corey, E.J.; Sneen, R.A. *J. Am. Chem. Soc.* **1956**, 78, 6229
Stereoisomerism	Victor Meyer	1888 Cited in Manchester, K.L. *Trends Biotech.* **1995**, 13, 511; Meyer, V. *Chem. Ber.* **1888**, 21, 789; *Chem. Ber.* **1890**, 23, 568
Strain	Adolf von Baeyer	Baeyer, A. *Chem. Ber.* **1885**, 18, 2277
Strangeness	Murray Gell-Mann	Feynman, R.P.; Gell-Mann, M. *Proc. UN Intern. Conf. Peaceful Uses Atomic Energy, 2nd Geneva*, **1958**, 30, 38 - 49; Cited in Hargittai, I. *Road to Stockholm* Oxford U. Press: Oxford, 2002, p. 190
String theory	Michael B. Green John H. Schwarz Edward Witten	Green, M.B.; Schwarz, J.H. *Phys. Rev. Lett B* **1982**, 109B, 444 Witten, E. *Prog. Physics* **1983**, 9, 395
Student t-test	William Gosset	"Student" *Biometrika* **1908 - 1909**, 6, 1; 302
Substituent effect	Louis P. Hammett	Hammett, L.P., *J. Am. Chem. Soc.* **1937**, 59, 96
Substitution-inert complex*	Henry Taube	Taube, H.; Myers, H. *J. Am. Chem. Soc.* **1954**, 76, 2103

Superacid	James B. Conant	Hall, N.F.; Conant, J.B. *J. Am. Chem. Soc.* **1927**, 49, 3047; Conant, J.B.; Hall, N.F. *J. Am. Chem. Soc.* **1927**, 49, 3062; Conant, J.B.; Werner, T.H. *J. Am. Chem. Soc.* **1930**, 52, 4436
superconductivity	Heiki Kamerlingh-Onnes	Onnes, H.K. *Electrician* **1911**, 67, 657
Supersymmetry (SUSY) ¶	B. Zumino Steven Weinberg	Zumino, B. *Proc. 17th Inter. Conf. High Energy Physics* 1974, p. 254 Weinberg, S. *Physics Today* **1977**, 30[4], 42-3; 46-50
Suppressor, suppressor gene¶	J. Schultz C.B. Bridges	*Z. fur Induktive Abstammungs und Vererbungslehre* **1928**, 46, 85 Schultz, J.; Bridges, C.B. *Am. Naturalist* **1932**, 66, 323 Baglioni, C. *Heredity* **1960**, 15, 87 Gorini, L.; Beckwith, J.R. *Ann. Rev. Microbiol.* **1966**, 20, 401
Supramolecular biology	Salvador Luria	Luria, S.E. *BioScience* **1970**, 20, 1289 (p. 1292)
Supramolecular chemistry*	Jean-Marie Lehn	Lehn, J.M. *Supramolecular Chemistry: concepts and perspectives*, VCH: Weinheim, 1995; Lehn, J.M. *Pure Appl. Chem.* **1978**, 50, 871; Lehn, J.M. *Acc. Chem. Res.* **1978**, 11, 49
Surface charge	Michael Faraday	Faraday, M. *Phil. Trans.* **1838**, 128, 1
"Survival of the fittest" ¶	Herbert Spencer	Spencer, H. *Principles of Psychology*, 1855 Spencer, H. *The Principles of Biology*, 1864, p. 164 - 165
-sylate suffix* (e.g., besylate, brosylate, esylate, mesylate, napsylate, tosylate)	W. Conrad Fernelius	Fernelius, W.C. *J. Chem. Ed.* **1982**, 59, 572
Synartetic assistance (neighbouring group participation)	Sir Christopher K. Ingold	Ingold, C.K. *Structure and Mechanism in Organic Chemistry*, Cornell University Press: Ithaca, New York, 1953, p. 520 - 523
Synchronous spectrum	J.B.F. Lloyd	Lloyd, J.B.F. *Nature* **1971**, 231, 64
Synthesis	Hermann Kolbe	Kolbe, H. *Ann. Chem.* **1845**,

		54, 145; 186
Synthon	Elias J. Corey	Corey, E.J. *Pure Appl. Chem.* **1967**, 14, 19
Tandem reaction	Frederick E. Ziegler	Ziegler, F.E.; Piwinski, J.J. *J. Am. Chem. Soc.* **1979**, 101, 1611 Watanabe, M.; Sniekus, V. *J. Am. Chem. Soc.* **1980**, 102, 1457
Target oriented synthesis	Samuel J. Danishefsky	Harris, C.R.; Danishefsky, S.J. *J. Org. Chem.* **1999**, 64, 8434
Task specific ionic liquid	James H. Davis, Jr.	Visser, A.E.; Swatloski, R.P.; Reichert, W.M.; Mayton, R.; Sheff, S.; Wierzbicki, A.; Davis, J.H. Jr.; Rogers, R.D. *Chem. Commun.* **2001**, 135
Tautomer (Gk. *Tauto* (the same) + *meros* (part)	Conrad Laar	Laar, C. *Chem. Ber.* **1885**, 18, 648; **1886**, 19, 730
Tea bag technique	Richard A. Houghten	Houghten, R.A. *Proc. Natl. Acad. Sci. USA* **1985**, 82, 5131
Tele substitution* (Gk: *tele*, away)	Josef Arens (tele-isomerization, tele-elimination, tele-carbene formation) Giuseppe Guanti (tele-substitution)	Arens, J. *Bull. Chim. Soc. Fr.* **1968**, 3037 Guanti, G. *Tetrahedron Lett.* **1977**, 1429
Telomerization Telomere Telogen Taxogen Taxomon	Jesse Harmon	Harmon, J. US Pat. 2,390,099 (E.I. duPont de Nemours) Thioethers (1945-12-04)
Templatation* Template reaction*	Daryle Hadley Busch	Busch, D.H. *Advances in Chemistry Series* **1963**, 37, 1; Thompson, M.C.; Busch, D.H. *J. Am. Chem. Soc.* **1964**, 86, 3651; Melson, G.A.; Busch, D.H. *J. Am. Chem. Soc.* **1964**, 86, 4834
Tensor	Woldemar Voigt	1898 cited in Goldberg, S. in *Dictionary of Scientific Biography* (Charles Gillispie, ed.) Charles Scribner & Sons: New York, 1980, Vol. 14, p. 61
Teratogen	James G. Wilson	Wilson, J.G. *J. Chronic Dis.* **1959**, 10, 111
The Theory of Everything (TOE)		

Thin layer chromatography	A.J.P. Martin R.L.M. Synge	Martin, A.J.P.; Synge, R.L.M. *Biochem. J.* **1941**, 35, 1358
Three-point model	E.H. Easson E. Stedman A.G. Ogston	Easson, E.H.; Stedman, E. *Biochem. J.* **1933**, 27, 1257 Ogston, A.G. *Nature* **1948**, 29, 963
Time-resolved spectroscopy	G. Gordon W.M. Cady	Gordon, G.; Cady, W.M. *J. Opt. Soc. Am.* **1950**, 40, 852 (first occurrence of phrase)
Total synthesis	Robert B. Woodward	Woodward, R.B.; Doering, W.E. *J. Am. Chem. Soc.* **1945**, 67, 860
Transfer RNA	Sidney Altman	Altman, S. *Nature New Biology* **1971**, 19, 229
Transition state theory	Henry Eyring	Eyring, H. *J. Chem. Phys.* **1935**, 3, 107
Transport numbers for anions and cations	Johann Wilhelm Hittorf	Hittorf, W. *Ann. Pogg.* **1853**, 89, 177; **1856**, 98, 1; **1858**, 103, 1; **1859**, 106, 337; 513
Transposon (transposition unit)	Robert W. Hedges A.E. Jacobs	Hedges, R.W.; Jacobs, A.E. *Molecular and General Genetics* **1974**, 132, 31
Triplet state*	Gilbert N. Lewis Michael Kasha	Lewis, G.N.; Kasha, M. *J. Am. Chem. Soc.* **1944**, 66, 2100
Uebermolekule	K.L. Wolf	Wolf, K.L.; Frahm, H.; Harms, H. *Z. Phys. Chem.* **1937**, 36B, 237; Wolf, K.L.; Dunken, H.; Merkel, K. *Z. Phys. Chem.* **1940**, 46B, 287; Wolf, K.L.; Wolff, R. *Angew. Chem.* **1949**, 61, 191
Ultrastructural biology	Conrad H. Waddington	Waddington, C.H. *Naturwiss.* **1961**, 190, 184; Cited in Luria, S.E. *BioScience* **1970**, 20, 1289 (p. 1289)
Umpolung (dipole inversion)*	Dieter Seebach	Seebach, D.; Kolb, M. *Chem. Ind.* **1974**, 687; Seebach, D.; Enders, D. *New Synth. Methods* **1975**, 2, 65; Seebach, D. *Angew. Chem.* **1979**, 91, 259; Seebach, D. *Angew. Chem. Int. Ed.* **1969**, 8, 639-649.
Valence	Sir Edward Frankland August Kekulé	Frankland, E. *Phil. Trans. Roy. Soc.* **1852**, 142, 417 Kekulé, A. *Ann. Chem. Pharm.* **1858**, 106, 129
Vector	Sir William R. Hamilton	Cited in Coulson, A.E. *An Introduction to Vectors*, Longman: London, 1967, p. 1
Virial	Rudolf J.E. Clausius	Clausius, R.J.E. *Phil. Mag.*

(Latin: *vis viva* = average kinetic energy)		**1870**, 40, 122 Clausius, R.J.E. *Compt. Rend.* **1870**, 70, 1314 Clausius, R.J.E. *Ann. Phys.* **1870**, 141, 124
Vitamine Vitamin	Sir Frederick Gowland Hopkins Casimir Funk Sir Jack Cecil Drummond	Funk, C. *J. Physiol. (London)* **1911-1912**, 43, 395 Funk, C. *J. State Med.* **1912**, 20, 341 Drummond, J.C. *Biochem. J.* **1920**, 14, 660
VSEPR = **v**alence **s**hell **e**lectron **p**air **r**epulsion	Ronald J. Gillespie	Gillespie, R.J., *J. Chem. Educ.* **1963**, 40, 295
X-ray*	Wilhelm C. Roentgen	Roentgen, W.C. *Ann. Physik* **1898**, 64, 1; 12; 18
Ylide*	Georg Wittig	Wittig, G.; Felletschin, G. *Ann. Chem.* **1944**, 555, 133; Wittig, G.; Mangold, R.; Felletschin, G. *Ann. Chem.* **1948**, 560, 116; Wittig, G.; Tenhaeff, H.; Schoch, W.; Koenig, G. *Ann. Chem.* **1951**, 572, 1; Wittig, G. *Angew. Chem.* **1951**, 63, 15; Wittig, G. *Acc. Chem. Res.* **1974**, 7, 6; Wittig, G. *J. Organometallic Chem.* **1975**, 100, 279; Wittig, G. *Science* **1980**, 210, 600
Ylidion (ylide + ion)	Leo Radom	Yates, B.F.; Bouma, W.J.; Radom, L. *J. Am. Chem. Soc.* **1984**, 106, 5805
Zero-point energy	Ekko Oosterhuis	Oosterhuis, E. *Physik. Z.* **1913**, 14, 862; Oosterhuis, E. *Proc. K. Acad. Welenschappen* **1914**, 16, 432; Bernoulli, A.L. *Z. Elektrochem. Angew. Physik. Chem.* **1914**, 20, 269
Zwitterion*	Alfred Thiele	Thiele, A.; Dassler, A. *Chem. Ber.* **1923**, 56B, 1667; *Z. Physik. Chem.* **1924**, 108, 298
Zymase	Wilhelm Kühne Eduard Buchner	1879 Cited in Manchester, K.L. *Trends Biotech.* **1995**, 13, 511 Cited in Karrer, P. *Organic Chemistry*, Vol. 1, Elsevier: Amsterdam, 1950, p. 90 Buchner, E. *Chem. Ber.* **1897**, 30, 117

If you have a contribution please send it with full details including references to original literature to c1000@careerchem.com . Verified contributions will be acknowledged on this page.

Notes:
*Contributions and/or confirmations from Farooq Wahab, University of Karachi, Pakistan
¶Oxford English Dictionary, http://www.oed.com

Contributions

Date: Wed, 14 Jul 2004 00:49:41 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Glossary of Coined Terms

Hello,
This is with reference to your excellent webpage on the glossary of coined terms used in science. This is a much needed area to be fully explored and perhaps you are the first one to make such a compilation of terms used in general science. One such book has already been written by Alex Nickon and Ernst Silverstein "The Name Game-Origins of Modern Coined Terms in Organic Chemistry" of Johns Hopkins University.

I like to collect and compile the first known uses of chemical terms or at least try to find the name of the person who coined it, if not the proper reference from whatever little resources I have.

Can you kindly inform as to what methodology do you adopt for finding out the earliest known use, e.g. the reference of "oxidation numbers" is cool. Do you take help from the multi-volume Oxford English Dictionary?

If you like you can make few additions :

Adsorption: a term due to H. Kayser (1881) at the suggestion of E. du. Bois Reymond in *Ann.Phys*, 14, 451 (1881)

Chelates: G.T Morgan and H.K Drew in *J. Chem. Soc.*, 117, 1456, (1920)

hard and soft acids and bases - G. Pearson in *J. Am. Chem. Soc.*, 85, 3533 (1963). Interestingly Pearson writes a footnote there saying that these words were suggested to him by Prof. Busch of Ohio State University (a fact very few people know).

Intensive and extensive properties: Tolman, R. C., *Phys. Rev.,* 9, 137 (1917)

Potential : George Green in Essay on the Application of Mathematical Analysis to the Theory of Electricity and Magnetism (1828) according to Encyclopedia Britannica.

Supramolecular Chemistry: coined in 1969 by Jean Marie Lehn as written in his book , *Supramolecular Chemistry: Concepts and Perspectives*.(1995)

Templatation/Template reactions: coined by Busch in 1964

Thanks.
Farooq Wahab
Chemistry student
University of Karachi, Pakistan

Date: Fri, 23 Jul 2004 17:38:07 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Re: Few more terms

Dear Dr. John,

I really admire your other websites which are based on named things in chemistry. I was thinking that such work such should be published say in J.Chem. Ed so that it becomes widely available to the chemistry community, especially when I searched the J.Chem.Ed from 1924 to date, one can see that no article is solely devoted to origins or earliest known uses of chemical terms. There is only one which was devoted to the origins of all the element names. I think students should be made aware of the names of people associated with terms and words they use so frequently in their courses. This way the contribution of those hardworking people can be acknowledged lest they are forgotten. Note that some of these words are not even listed in the multi-volume Oxford English Dictionary or in Webster's unabridged Dictionary of the English Language.

ipso: Very surprisingly this term is quite recent i.e. coined in 1971 by Charles Perrin and co-workers at Univ. of California in an article published in Journal of American Chemical Society 1971, Vol:93 and pg 3389 onwards. This term is said to be derived from ipso-facto, so ipso (latin =itself) position was used for the ring carbon bearing a substituent. Originally this was coined for nitration of p-bromoanisole to p-nitroanisole.

Activity coefficient (for non-ideal solutions etc): coined by G.N. Lewis 1901.

Osazone: Fischer coined this word from -OSE (from the common ending of sugars) + hydrAZONE.

(The word origin could not be found anywhere, only in Fieser's "Organic Chemistry" perhaps 1944 ed. gave its etymology I have a reference to Fischer's paper which might give a clue to the original article: Schmelzpunkt des phenylhydrazin und einiger Osazone" Chem. Ber. 1908, 41, 573-577)

Ylide : From German Ylid coined from -yl (homopolar bonding) and -ide (ionic ending) by Georg Wittig et.al in Justus Liebig Ann. Chem, 1944, 133, 555.

(This etymology was taken from his Nobel Lecture- note that even this word was not listed in unabridged dictionaries, chemical dictionaries give its definition only).

Anation reactions: ANion + -ATION, as an noun ending, I don't know who coined it, neither it is listed in chemical dictionaries (anation is when a ligand replaces water from a coordination sphere), but it is a fairly common term in coordination chemistry, at least undergraduates should know its etymology.

So is Aquation reactions: AQUA- + -TION, just opposite of anation.

Triplet State: G.N Lewis and Kasha in J.Am.Chem.Soc., 1944, 66, 2100 .
The title of the paper is "Phosphorescence and the Triplet State"

Internal Standard (method): By Gerlach (A German spectroscopist) "Die chemische Emission Spektralanalyse" Volume-I, Liepzig 1929. This term is also very common in analytical chemistry.

Pi-bond, Sigma-Bond: I would be really interested to know whether Hund or Mulliken coined this terminology. (I will let you know by further search.)

Chemical Induction: (As used in when describing clock-reactions/ oscillating reactions) . This concept was introduced by Kessler in Pogg. Ann. 195, 218(1863).

This reference was taken from Kolthoff's "Volumetric Analysis".

Hydrogen electrode: Hildebrand, J. Am. Chem. Soc, 35, 869 (1913)

Umpolung: coined in 1969 by Professor Seebach in Angew. Chem (English ed), 1969, 8, 639-649.

I read somewhere that someone in the same journal has described the history of "Banana Bonds", a really interesting name. Perhaps you can electronically search for such title.

Cathode rays: Kathodenstrahlen by Eugen Goldstein.

Curved arrow (notation): An Explanation of the Property of Induced Polarity of Atoms and an Interpretation of the Theory of Partial Valences on an Electronic Basis, by William Ogilvy Kermack and Robert Robinson, published in the Journal of the Chemical Society, 1922, 121, 427.

R (the universal gas constant): Introduced by E. Clapeyron in 1834.

R (as used in organic chemistry) comes from the German Radikal.

Chemical Shift:According to the article by Samuel G. Levine in JCE says that the distinctive and curious term(according to the author) chemical shift appeared in papers from several laboratories. In a paper by in 1949 W.D Wright,(Phys.Rev.)observed "a SHIFT in the nuclear magnetic resonance frequencies from expected values in five metals Li, Na, Al, Cu and Ga" in that the resonance frequencies "were higher by tenths of a percent than the resonance frequencies observed in the salts of corresponding metals.

The author traces the first of use of "chemical shift " by Gutowsky and Hoffman in their 1961 paper in Journal of Chemical Physics on F-19 and proton resonance. This term was used to designate numerically the separation between the signal and a standard. This group published NMR characteristics of about 200 organic compounds.

So the originators of "chemical shift" were chemists or physicists is not our concern. I had thought that the article would be two or three pages long, but it is a very brief article

of two paragraphs. It would be interesting for chemistry teachers to tell a short story of chemical shift in class.

The terms neighbouring group participation, solvent participation, internal return, anchimeric assistance, intimate ion pair, ion-pair return, bridged ions, nonclassical ions, homoaromaticity are all due to Dr. Saul Winstein. (This was taken from his online (perhaps official biography, because of .edu ending in the address.)

[Following is extracted is from Glasstone's " A textbook of Physical Chemistry-1942]

Overvoltage (more recently overpotential in electrochemistry) : translated from the German Uberspannung. This term was introduced by W. A. Caspari in 1899.

endosmosis, exosmosis : R. Dutrochet (1827-32)

semi-permeable: Van't Hoff in Phil. Mag., 26, 81, 1888.

Chemical potential: due to J.W. Gibbs.

Free Energy: coined by G. N Lewis and Randall

Labile and inert complexes: coined by Henry Taube.

I will send some more.

Sincerely,

Farooq.

Date: Fri, 23 Jul 2004 18:36:15 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Few more terms -(II)

Here is some more etymological information on the nomenclature of heterocycles from the IUPAC website:

Ring size	Unsaturated	Saturated
3	irene	irane
4	ete	etane
5	ole	olane
6A	ine	ane
6B	ine	inane
6C	inine	inane
7	epine	epane
8	ocine	ocane
9	onine	onane
10	ecine	ecane

The interesting point is:

The stems for ring sizes 3, 4, 7, 8, 9, and 10 may be considered to be derived from numerical prefixes as follows: "ir" from tri, "et" from tetra, "ep" from hepta, "oc" from octa, "on" from nona, and "ec" from deca.

Hence etymology of oxIRane is oxygen + tri +-ane from alkane.

Farooq Wahab

Date: Wed, 11 Aug 2004 22:52:27 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Re: Few more terms -(III)

Dear Dr. John,

This is a continuation of previous list of compiled terms:

Bullvalene: Doering Roth et al. in Angew. Chemie 1963, 2, 115-122; an interesting story is given in the Alex Nikon's book (the author privately communicated to one of the graduate student involved). The story goes as that in a group seminar on these compounds two graduate students sat near the back of the room; one of them turned to the other and blurted out "bullvalene". According to the author Dr. Doering was nick-named as "Bull". Please consult Alex Nikon's book for complete information. Also, note that the ending -valene is common to many names.

Cine-substitution: Prof. Bunnett, from Greek kinein=to move, see
Bunnett J.F, Zahler Chem. Revs 49, 273-412 (1951).

Tele : Greek = away, introduced by Josef Arens in Bul. Soc. Chim. Fr. 1968, 3037-3044; he also coined tele-isomerization, tele-elimination, tele-carbene formation but tele-substitution is due to Guiseppe Guanti in Tetrahedron Lett. 1977, 1429-1430.

Some of the electroanalytical terms are extracted from Lingane's "Electroanalytical Chemistry" 1957. The references are quoted in the old fashioned way by volume, page and year.

Formal Potential, and perhaps formality/formal concentration: E. H. Swift in his book "A system of Chemical Analysis"-1939

pH: S.P.L Sorenson Compt. rend. trav. lab Carlsberg, 8, 1 (1909).

Glass electrode: F Haber Z. physik. Chem, 67, 385 (1919)

Polarography : J. Heyrovsky, Chem. Listy, 16, 256(1922)

Chronopotentiometry: P. Delahay Anal. Chem., 27, 478 (1955).

Internal Conversion, Intersystem Crossing, Radiationless Transition, Intercombination are all described for the first time (and summarized) in Micheal Kasha's "Characterisation of Electronic Transitions in Complex Molecules" in J. Am. Chem Soc of 1950 (I don't have the exact reference now.)

Ion, Anion and Cation: Attributed to Faraday, ion from the Greek for wanderer, ana- and cat- mean up and down, respectively, e.g., the anion is the ion which is moving up the potential gradient.

Electrode, anode, cathode: were suggested to Faraday by Whewell 1834; see Oesper and Speter Scientific Monthly 45, 535 (1937)

The prefix "per" which is so commonly used as in peroxide was introduced by T. Thomson in 1804 in his book "A System of Chemistry" Edinburgh. Per was taken from Latin- meaning thoroughly. (from ACS monograph on Hydrogen Peroxide- Walter Schumb).

I would be pleased to know as when and how the terms State and Level were introduced in spectroscopy? I guess state might have been translated from German Zustand but what is a Level called in German?

Few more terms: chaotropic, Kosmotropic salts, salting-in, salting-out?

Farooq Wahab

Date: Fri, 13 Aug 2004 14:54:54 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Re: Few more terms -(III)

Dear Dr. John,

I have seen the updated version of your website (thanks for the acknowledgments). I would like see it as a rather quick and comprehensive online source of earliest references to chemical terms and concepts for chemistry undergraduates interested in history of chemistry.

I know that cine-, tele- substituitions , bullvalane, ion etc were listed in your website but their reference boxes were empty except bullvalene, the anecdote given for it is different from the one given in the J.Chem Ed. Some more terms which I always wondered about their origin were in a footnote written by Pauling in his excellent text on General Chemistry that can be shared in the classroom.

K,L,M,N shells: "In the period 1905 to 1910 Charles Glover Barkla measured the power of X-rays of penetrating sheets of copper and other substances. He discovered that elements emit characteristic X -rays of two kinds, differing in their penetrating power. After having used A and B, he decided in 1911 to assign K to the more penetrating and L to less penetrating radiation, in order to leave other letters available for still more penetrating and less penetrating kinds of radiation which he thought would probably be discovered, he soon discovered M and N radiation, but characteristic x-radiation more penetrating than the K line is not emitted by the atoms. BarKLa may have taken the letters K and L from his name."

Secondly a rather old term which may be valuable for the older organic chemistry literature and now almost non-existent since web search does not find relevant results, is a term due to Sudgen: parachor, the etymology of which was found with much difficulty in an unabridged Webster's dictionary as no chemical dictionary would list it.

Parachor: [para- + chor from Greek space, from its indicating volume]: an empirical constant that relates surface tension of a liquid to its molecular volume and that may be used for comparing molecular volumes under conditions such that liquids have the same surface tension.

Another related word is rheochor, coined by [??].

Recoil: This term as used in physics (as recoil electron etc.) is due to Rutherford , please check the multivolume Oxford Unabridged Dictionary for the correct version and reference.

Few more words that can be added (I don't have the references to their earliest known use) are Bremsstrahlung , State, Level and Term (in spectroscopic sense), Resonance (perhaps Pauling), concerted reactions, canonical forms and j-j coupling.

Best wishes.
Farooq Wahab

Date: Tue, 30 Nov 2004 21:28:13 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Compilation of few more terms

Dear Dr. John,

Here are some more terms, merely compiled during a study from a number of websites and books. In most cases the originator of the word is known, along with the year but not the article in which the term was first introduced.

Algorithm : Derived from alogorism (OED, Ency. Britannica), which was the Latinized form of "al-Khowarizim", the surname of an Arab mathematician in the 16th century. He also introduced algebra (al-jabr) in his book Kholosat-e-Hisaab"(Essence of Mathematics).

Acid Rain : British Chemist, Robert A. Smith 1870

Adduct : borrowed from German but the person who introduced in the chemical literature is not known.

Bolions: Two positive charges separated by a long chain of atoms. J. Am. Chem .Soc, 1951,73 ,269

Catenanes : Edel Wasserman 1960.

Celluloid: Isaiah Hyatt-1872

Chemotherapy: Paul Ehrlich- 1909

Chemiluminescence: Eilhardt Weidermann- 1888

Flash Chormatography: W. Clark.

Flavor, Charm, Strangeness, Color...though interesting names but I would like to know who coined the names of properties.

Fuel Cell: Ludwig Mond, Charles Langer 1889

I-Strain: Internal Strain, Brown H.C, J. Am. Chem.Soc 1950, 72, 2926

Ligand: German chemist Alfred Stock 1916

Magic Acid: George Olah

Olation, and Oxolation: someone suggested that Henry Taube...but not sure.

Order of reaction: Ostwald

Plasma: Irving Langmuir-1929

Phonon : perhaps Peter Debye.

Some amusing names of arsine ligands: edas, vdias, dam, ffars etc in a chapter by E.C Alyea "Transition metal complexes of Phosphorus etc." New York -1973

Styx number : (used in boron chemistry) Spent a long time to find if Lipscomb, who introduced this term had any anecdote in his mind (I thought some connection with Styx river), but supposedly s,t, and y,x were merely parameters in those structures. Hence the name.

The -sylates family, eg tosylate, brosylate, mesylate , Fenelius, W.C, J. Chem. Ed 1982, 59, 572

Vitamines :(Vital amines) Casmir Funk.

The X-ray box in your website is empty: X-strahlen by Roengten 1895," Ich Komme deshalb zu dem Resultat dass die X-strahlen nicht indentisch mit den Kathodenstrahlen, W.C. Roengten Ann. Physik. und Chem. 1898, 64, 1-37 (he reprinted his original 1895 in this journal) cited in "X-rays and Electron in Analytical Chemistry"- Liebhafsky and others.

A book by Skoog et. al suggests that K, L shell were so named because K stands for kurz, (small) and L for lange...K wavelengths were shorter and so on.

Some terms: semiconductors, diodes, and transistors ??

Hyphenated-methods (in chromatography): like GC-MS etc, a review is given in ACS Analytical Chemistry 1980, 52, 297A

Zwitterion has been puzzling me as the chemist who coined it is not mentioned anywhere.

Regards.
Farooq.

Date: Tue, 30 Nov 2004 22:06:45 +0500
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Compilation of few more terms- a left over

Dear Dr. John,

One more left-over to the previous list of about 25 more terms just sent today :
Chemical Chamelion: Trost, B. M in J. Am. Chem. Soc., 1984, 106, 7260.

Regards
Farooq.

Date: Fri, 25 Feb 2005 20:32:28 EST
From: KingArtTom@aol.com
To: jandraos@yorku.ca
Subject: Dr. John Andraos

Dear Dr. Andraos,

I have just come across your excellent Glossary of Coined Names Used in Science.

I noted olation and oxolation and found my father Arthur W. Thomas. I can confirm that he dedicated many years of research to this subject. He was a grand and spirited experimenter in chemistry along with his many graduate students. They tried to simplify the relationships in solution removing mysticism that had surrounded them for years up the time of their work. His name deserves this recognition.

My father was married in Toronto at Old St Andrew Church on December 23, 1914. In August 1916 his beloved wife died of typhoid fever in New York. She is at rest at Mt. Pleasant Cemetery in Toronto. I am confident she would have been proud of him.

Sincerely,

Arthur L. Thomas
2 Putnam Park
Greenwich, CT
06830-5747

Date: Wed, 2 Mar 2005 13:24:27 EST
From: KingArtTom@aol.com
To: jandraos@yorku.ca

Subject: Glossary

Dear Dr. Andraos,

My nieces have seen the Glossary website and ask that my father's second wife also be included in any statement in the Glossary.

"In February 1919 my father remarried while an officer in the American Expeditionary Force in Europe. I am the son of his second wife who also was devoted to him and supported his work over the many years. My father passed on in 1982."

As a personal note his first wife had been a brilliant student at the Jarvis Collegiate School on Jarvis Street in Toronto and his second wife had been a brilliant student at school in Normandy.

Sincerely,

Arthur L. Thomas
Connecticut

Date: Sun, 26 Jun 2005 06:45:32 +0000
From: farooq wahab <farooq_w@hotmail.com>
To: jandraos@yorku.ca
Subject: Some new words

Dear Dr. John,

I came across some new terms but without their originator or reference, hope you will find them interesting:

1.sarcophaginates 2. sepulcherate 3. calixarenes

More compilations:

Interestingly, a website
http://www.psigate.ac.uk/newsite/chemistry_timeline.html

claims that the word "scientist" was coined by William Whewell-1834 (OED might help us here).

Geochemistry was coined by C.F. Schoenbein 1838, according to the same website.

silicone-Wohler in 1857

cold fusion-Steven E. Jones

Secondly there is a suggestion which may incorporate in the title, if you change the title from “Glossary of Coined Names" to "Glossary of Coined Terms" or to "Earliest Known uses of Chemical Terms".

Did you notice that your website is listed in a Korean research library under this address?

http://rainbow.gsnu.ac.kr/~ysj/Research/Lib/Glossary.pdf

M. Farooq
Department of Chemistry
University of Karachi-Pakistan

Date: Tue, 04 Oct 2005 16:07:19 -0300
From: Brian Lynch <blynch@stfx.ca>
To: John Andraos <jandraos@yorku.ca>
Subject: Your glossary of named terms

Dear John:
This is an excellent effort and we will post the URL on the Department's Web page.
Two nitpicks - Seaborg's first name is Glenn, not Glen; and the term is isosbestic point [not isobestic]

Brian Lynch

Brian M. Lynch, M. Sc., Ph.D. [Melbourne], FCIC
Department of Chemistry, St. Francis Xavier University
Antigonish, Nova Scotia B2G 2W5, Canada
Tel: 902-867-3992 [office]; 902-867-0450 [cellphone: preferred]
Fax: 902-867-2414