

# NAMED EQUATIONS AND LAWS IN CHEMISTRY

## (H – K)

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<http://www.chem.yorku.ca/NAMED/>

### John Burdon Sanderson Haldane

5 November 1882 - 1 December 1964

British-Scottish, b. Oxford, England

Haldane equation

Haldane, J.B.S., *Enzymes*, Longmans, Green, & Co.: London, 1930

Briggs-Haldane solution

see George Edward Briggs

Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

Millar, D.; Millar, I.; Millar, J.; Millar, M., *Chambers Concise Dictionary of Scientists*, W. & R. Chambers: Edinburgh, 1989

Pirie, N.W., *Biog. Memoirs Fellows Roy. Soc.*, **1966**, 12, 219

### Louis Plack Hammett

7 April 1894 - 9 February 1987

American, b. Wilmington, Delaware, USA

Hammett equation

Hammett sigma constants

Hammett, L.P., *J. Am. Chem. Soc.* **1937**, 59, 96

Hammett, L.P., *Chem. Rev.* **1935**, 17, 125

Hammett acidity function

Hammett, L.P.; Deyrup, A.J., *J. Am. Chem. Soc.* **1932**, 54, 2721

### Biographical References:

Westheimer, F.H., *Biog. Memoirs Natl. Acad. Sci.* **1997**, 72, 137  
Anon., *Chem. Eng. News* **1998**, 76(2), 171

## Charles Samuel Hanes

21 May 1903 - 6 July 1990

Canadian, b. Toronto, Ontario, Canada

### Hanes-Woolf plot

Hanes, C.S., *Biochem. J.* **1932**, 26, 1406

Woolf's contributions cited in Haldane, J.B.S.; Stern, K.G. *Allgemeine Chemie der Enzyme*, Steinkopff: Dresden, Leipzig, 1932 though Woolf did not publish his own papers.

### Method of Wong and Hanes

Wong, J.T.; Hanes, C.S. *Can. J. Biochem. Physiol.* **1962**, 40, 763

### Biographical References:

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Wong, J.T.F.; Thompson, W., *Biog. Memoirs Fellows Roy. Soc.* **1994**, 39, 147

## Douglas Rayner Hartree



27 March 1897 - 12 February 1958

British, b. Cambridge, England

### Hartree equation

Hartree, D.R., *Proc. Cambridge Phil. Soc.* **1928**, 24, 111

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Darwin, Sir C., *Biog. Memoirs Fellows Roy. Soc.* **1958**, 4, 103

## Karl Albert Hasselbalch

1 November 1874 - 19 September 1962

Danish, b. Aastrup, Denmark

### Henderson-Hasselbalch equation

Henderson, L.J., *J. Physiol.* **1908**, 21, 173; 427

Hasselbalch, K.A. *Biochem. Z.* **1916**, 78, 112

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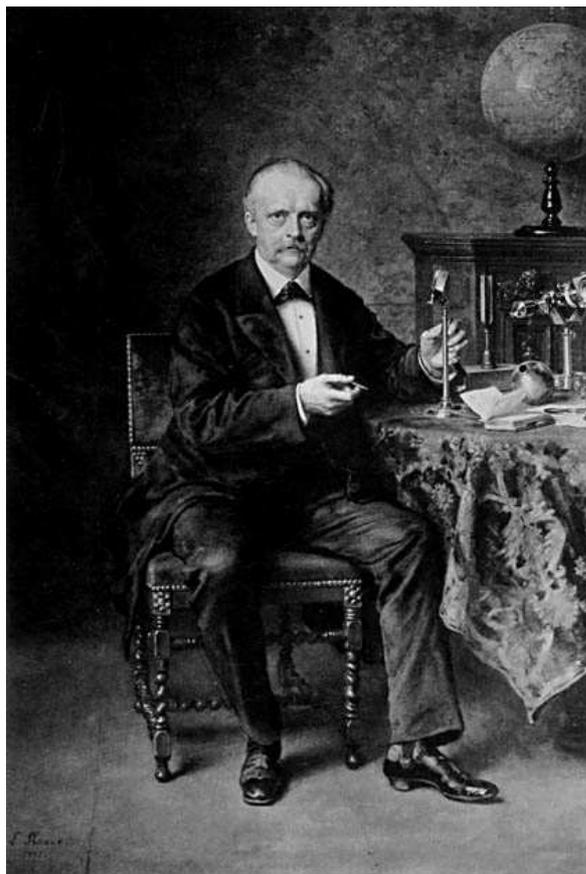
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## Herman Ludwig Ferdinand von Helmholtz



31 August 1821 - 8 September 1894  
 German, b. Potsdam, Germany

### Helmholtz equation

Helmholtz, H. *Sitzber. Berlin Akad. Wissen. Abh.* **1882**, 1, 21; 825

Helmholtz, H. *Sitzber. Berlin Akad. Wissen. Abh.* **1883**, 2, 958; 1895

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Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.: London, 1964, p. 615

### Lawrence Joseph Henderson

3 June 1878 - 10 February 1942

American, b. Lynn, Massachusetts, USA

### Henderson-Hasselbalch equation

see Karl Albert Hasselbalch

### Biographical References:

Parascandola, J. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1972, Vol. 6, 260

Cannon, W.B., *Biog. Memoirs Natl. Acad. Sci.* **1943**, 23, 31

## Victor Henri

6 June 1872 - 21 June 1940

French, b. Marseilles, France

### Enzyme kinetics (Michaelis-Menten kinetics)

Henri, V. *Lois générales de l'action des diastases*, Hermann: Paris, 1903

Henri, V. *Compt. Rend.* **1901**, 133, 891

Henri, V. *Z. Phys. Chem.* **1901**, 39, 194

Henri, V. *Compt. Rend.* **1902**, 135, 916

### Biographical references:

Debru, C. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1990, Vol. 18, Supplement II, 410

## William Henry



12 December 1775 - 2 September 1836

British, b. Manchester, England

### Henry's law

Henry, W., *Nicholson's J.* **1804**, 8, 297

Henry, W. *Phil. Trans. Roy. Soc.* **1803**, 93, 29

### Biographical References:

Abbott, David (ed.), *The Biographical Dictionary of Scientists: Chemists*, Peter Bedrick Books: New York, 1983

*Proceedings Roy. Soc. London* **1836**, 27, 439-440

## William G. Herkstroeter

30 November 1938 -

American, b. St. Louis, Missouri, USA

### Hammond-Herkstroeter plot

Herkstroeter, W.G.; Hammond, G.S. *J. Am. Chem. Soc.* **1966**, 88, 4769; 4777

### Biographical References:

R.R. Bowker's *American Men & Women of Science 1998 - 99*, 20th ed., R.R. Bowker: New Providence, New Jersey, 1998

## Germain Henri Hess



7 August 1802 - 30 November 1850

Swiss-Russian, b. Geneva, Switzerland

### Hess' law

Hess, G.H., *Bull. Sci. Acad. Imper. Sci. (St. Petersburg)* **1840**, 8, 257

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Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.: London, 1964, p. 608

## Archibald Vivian Hill

26 September 1886 - 3 June 1977

British, b. Bristol England

Nobel Prize Physiology and Medicine 1922

### Hill plot

Hill, A.V., *J. Physiol. (London)* **1910**, 40, 4

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Katz, Sir B., *Biog. Memoirs Fellows Roy. Soc.* **1978**, 24, 71

## Sir Cyril Norman Hinshelwood



19 June 1897 - 9 October 1967

British, b. London, England

Nobel Prize Chemistry 1956

### Hinshelwood equation

Hinshelwood, C.N., *Proc. Roy. Soc. London Ser. A* **1927**, 114, 84

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 Abbott, David (ed.), *The Biographical Dictionary of Scientists: Chemists*, Peter Bedrick Books: New York, 1983

## Barend Hendrik Jan Hofstee

19 September 1912 - 1980

Dutch-American, b. Stedum, Netherlands

### Hofstee plot

Hofstee, B.H.J. *Science* **1952**, 116, 329  
 Hofstee, B.H.J., *Nature* **1959**, 184, 1296  
 Hofstee, B.H.J. *J. Biol. Chem.* **1952**, 199, 357

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## Norris John Holness

1927 -

British, b. ?

### Winstein-Holness equation

Winstein, S.; Holness, N.J., *J. Am. Chem. Soc.* **1955**, 77, 5562

### Biographical References:

Seeman, J.I. *Chem. Rev.* **1983**, 83, 83

## Robert Hooke

18 July 1635 - 3 March 1703

British, b. Freshwater, Isle of Wight

### Hooke's law

Hooke, R., *De Potentia Restitutiva*, 1678

### Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994  
 Partington, J.R., *A History of Chemistry*, Vol. II, Macmillan and Co., Ltd.: London, 1961, p. 550

## Erich Armand Arthur Joseph Hückel

9 August 1896 - 16 February 1980

German, b. Berlin-Charlottenburg, Germany

### Debye-Hückel law

Debye, P.; Hückel, E., *Physik. Z.* **1923**, 24, 185

### Biographical References:

Hartmann, H.; Louguet-Higgins, H.C., *Biog. Memoirs Fellows Roy. Soc.* **1982**, 28, 153

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Oxford University Press: New York, 1994

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## Maurice Loyal Huggins

19 September 1897 - 1981

American, b. Berkeley, California, USA

### Flory-Huggins theory

see Paul John Flory

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Huggins, M.L., *Chem. Tech.* **1980**, 10, 422

## Noel Sydney Hush

15 December 1924 -

British-Australian, b. ?

### Marcus-Hush relationship

Hush, N.S., *Trans. Faraday Soc.* **1961**, 57, 557

Hush, N.S., *Prog. Inorg. Chem.* **1967**, 8, 391

Marcus, R.A., *J. Chem. Phys.* **1965**, 43, 679

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## William Platt Jencks

15 August 1927 -

American, b. Bar Harbor, Maine, USA

Keeffe-Jencks equations

Keeffe, J.R.; Jencks, W.P. *J. Am. Chem. Soc.* **1981**, 103, 2457

Keeffe, J.R.; Jencks, W.P. *J. Am. Chem. Soc.* **1983**, 105, 265

Biographical references:

McMurray, Emily J. (ed.), *Notable Twentieth-Century Scientists*, Gale Research, Inc.: New York, 1995

## James Prescott Joule



24 December 1818 - 11 October 1889

British, b. Salford, England

Joule's first law, Joule's second law

Joule, J.P., *Phil. Mag.* **1841**, 19, 260

Biographical references:

Rosenfeld, L. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1973, Vol. 7, 180

## Anatolii Federovich Kapustinskii

29 December 1906 – 26 August 1960

Russian, b. Zhitomir, Russia

### Kapustinskii equation (lattice energy)

Kapustinskii, A.F. *Z. Physik. Chem.* **1933**, B22, 257

Kapustinskii, A.F. *Z. Kristallogr.* **1933**, A86, 359

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### Biographical references:

Drakin, S.I.; Kudryavstev, A.A.; Selivanova, N.K.; Stakhanova, M.S. *Russ. J. Phys. Chem.* **1960**, 34, 1338

## Martin Karplus



15 March 1930 -

Austrian-American, b. Vienna, Austria

### Karplus equation

Karplus, M., *J. Chem. Phys.* **1959**, 30, 11

Karplus, M., *J. Chem. Phys.* **1960**, 33, 1842

Karplus, M., *J. Am. Chem. Soc.* **1963**, 85, 2870

### Biographical References:

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## James R. Keeffe

American, b. ?

### Keeffe-Jencks equations

Keeffe, J.R.; Jencks, W.P. *J. Am. Chem. Soc.* **1981**, 103, 2457

Keeffe, J.R.; Jencks, W.P. *J. Am. Chem. Soc.* **1983**, 105, 265

### Biographical references:

## Gustav Robert Kirchhoff

12 March 1824 - 17 October 1887

German, b. Königsberg, Prussia, now Kaliningrad, Lithuania

Kirchhoff's laws (electrolytes)

Kirchhoff, G.R., *Ann. Physik* **1858**, 103, 206

Kirchhoff, G.R., *Ann. Physik* **1858**, 104, 612

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Kirchhoff's law of heat radiation

Kirchhoff, G.R., *Ann. Physik* **1858**, 103, 177

Biographical references:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994

## John Gamble Kirkwood

30 May 1907 - 9 August 1959

American, b. Gatebo, Oklahoma, USA

Kirkwood-Onsager equation

Kirkwood, J.G., *J. Chem. Phys.* **1934**, 2, 351

Onsager, L., *J. Am. Chem. Soc.* **1936**, 58, 1486

Biographical References:

Scatchard, G., *J. Chem. Phys.* **1960**, 33, 1279

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## Friedrich Wilhelm Georg Kohlrausch

14 October 1840 - 17 January 1910

German, b. Rinteln, Germany

Kohlrausch relaxation function

Kohlrausch square root law

Kohlrausch, F., *Ann. Physik* **1863**, 119, 337

Kohlrausch law of independent migration of ions

Kohlrausch, F., *Ann. Physik* **1880**, 11, 653

Kohlrausch, F., *Ann. Physik* **1885**, 26, 161

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