

# NAMED EQUATIONS AND LAWS IN CHEMISTRY

## (L – P)

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

### Johann Heinrich Lambert

26 August 1728 - 23 September 1777

German, b. Mulhouse, Alsace, France

Beer-Lambert-Bouguer law

see August Beer

### Biographical References:

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

### Alfred Landé

13 December 1888 - 1975

German, b. Elberfeld, Germany

Landé g-factor (splitting factor)

Landé, A., *Verh. Deut. Physik. Gesell.* **1919**, 21, 585

Landé, A., *Physik. Z.* **1921**, 22, 417

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Hannibal: Missouri, 1968  
Pogg. **1926**, 5, 705  
Personal communication, Prof. Dr. Christian Reichardt, October 2000  
Forman, P. *Historical Studies Phys. Sci.* **1970**, 2, 153

## Paul Langevin



23 January 1872 - 19 December 1946  
French, b. Paris, France

### Langevin equation

Langevin, P., *Compt. Rend.* **1904**, 139, 1204  
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### Biographical References:

Daintith, J.; Mitchell, S.; Tootill, E.; Gjersten, D., *Biographical Encyclopedia of Scientists*, Institute of Physics Publishing: Bristol, UK, 1994  
Joliot, F., *Roy. Soc. Obit. Not. Fellows*, **1950 -1951**, 7, 405

## Irving Langmuir



31 January 1881 - 16 August 1957  
American, b. Brooklyn, New York, USA

Nobel Prize Chemistry 1932

Langmuir's equation

Langmuir, I., *J. Am. Chem. Soc.* **1932**, 54, 2798

Langmuir, I., *J. Chem. Phys.* **1933**, 1, 3

Biographical References:

Suits, C.G.; Martin, M.J., *Biog. Memoirs Natl. Acad. Sci.* **1974**, 45, 215

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Max Theodor Felix von Laue



9 October 1879 - 24 April 1960  
German, b. Pfaffendorf, Koblenz, Germany

Nobel Prize Physics 1914

Laue equations

Friedrich, W.; Knipping, P.; v. Laue, M., *Sitzber. Math.-Phys. Klasse Bayer. Akad. Wissen. Munchen* **1912**, 303

Biographical references:

Ewald, P.P. *Biog. Memoirs Fellows Roy. Soc.* **1960**, 6, 135

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

Antoine Laurent Lavoisier



26 August 1743 - 8 May 1794

French, b. Paris, France

### Lavoisier's law

Lavoisier, A., *Mem. Acad. Roy. Sci.* **1775**, 520

Lavoisier, A., *Observations sur la Physique* **1783**, 23, 452

### Biographical References:

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Partington, J.R., *A History of Chemistry*, Vol. III, Macmillan and Co., Ltd.: London, 1962, p. 363

### Sir John Edward Lennard-Jones

27 October 1894 - 1 November 1954

British, b. Leigh, England

### Lennard-Jones potential

Jones, J.E., *Proc. Roy. Soc. London Ser. A* **1924**, 106, 463

Jones, J.E.; Ingham, A.E., *Proc. Roy. Soc. London Ser. A* **1925**, 107, 636

Jones, J.E.; Taylor, P.A., *Proc. Roy. Soc. London Ser. A* **1925**, 109, 476  
Lennard-Jones, J.E.; Cook, W.R., *Proc. Roy. Soc. London Ser. A* **1927**, 115, 334  
Lennard-Jones, J.E.; Dent, B.M., *Phil. Mag.* **1927**, 3, 1204  
Lennard-Jones, J.E. *Proc. Physical Soc.* **1931**, 43, 471

### Biographical References:

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Mott, N.F., *Biog. Memoirs Fellows Roy. Soc.* **1955**, 1, 175

## Hans Lineweaver

25 December 1907 - ?

American, b. Pickens, West Virginia, USA

Lineweaver-Burk plot

see Dean Burk

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Biography and Genealogy Master Index,  
<http://www.library.yale.edu/pubstation/databases/biogen.html>  
*American Men of Science, Physical and Biological Sciences*, 11th ed.,  
R.R. Bowker: Providence, N.J., 1967

## Hendrik Antoon Lorentz



18 July 1853 - 4 February 1928

Dutch, b. Arnhem, Netherlands

## Physics Nobel Prize 1902

### Lorentzian function, Lorentzian bandshape

#### Biographical References:

Fokker, A.D., *Physica* **1928**, 8, 4

O.W.R. *Proc. Roy. Soc. London* **1928**, 121A, xx-xxviii

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

McCormach, R. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1980, Vol. 8, 487

## Elmer Cornelius Lupton, Jr.

8 August 1945 -

American, b. Baltimore, Maryland

### Swain-Lupton equation

Swain, C.G.; Lupton, E.C., Jr., *J. Am. Chem. Soc.* **1968**, 90, 4328

#### Biographical References:

Biography and Genealogy Master Index,

<http://www.library.yale.edu/pubstation/databases/biogen.html>

personal communication

## Erwin Madelung

18 May 1881 – 1 August 1972

German, b. Bonn, Germany

### Madelung series, Madelung constant

Madelung, E., *Physik. Z.* **1910**, 11, 898

Madelung, E., *Physik. Z.* **1918**, 19, 524

#### Biographical References:

World Biographical Index, K.G. Saur Publishing,

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Schröder, U.E. in *Physiker und Astronomen in Frankfurt*, University of Frankfurt, Department of Physics: Frankfurt, 1989

Personal communication, Prof. Dr. Christian Reichardt, November 2001

## Rudolph Arthur Marcus



21 July 1923 -  
Canadian-American, b. Montreal, Quebec, Canada

Marcus equation, Marcus inverted region

Marcus, R.A., *J. Chem. Phys.* **1956**, 24, 966

Marcus, R.A., *J. Phys. Chem.* **1968**, 72, 891

Marcus, R.A., *J. Chem. Phys.* **1963**, 38, 1858

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Marcus-Hush relationship

see N.S. Hush

Be(II)-Ma(rcus)-Ha(mmond)-Po(lanyi)-Th(ornton)-Le(ffler) principle

see Ronald Percy Bell

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Bohning, J.J. in James, Laylin K. (ed.), *Nobel Laureates in Chemistry 1901 - 1992*, American Chemical Society: Washington, DC, 1993, p. 766

Edme Mariotte

1620 - 12 May 1684

French, b. Bourgogne, near Dijon, France

Mariotte's law (1676) (also known as Boyle's law)

Mariotte, E. *Essai de la nature de l'air*, 1676

### Biographical references:

Pötsch, W.R.; Fischer, A.; Müller, W., *Lexikon bedeutender Chemiker*, Verlag: Frankfurt, 1989

## M.F. Massieu

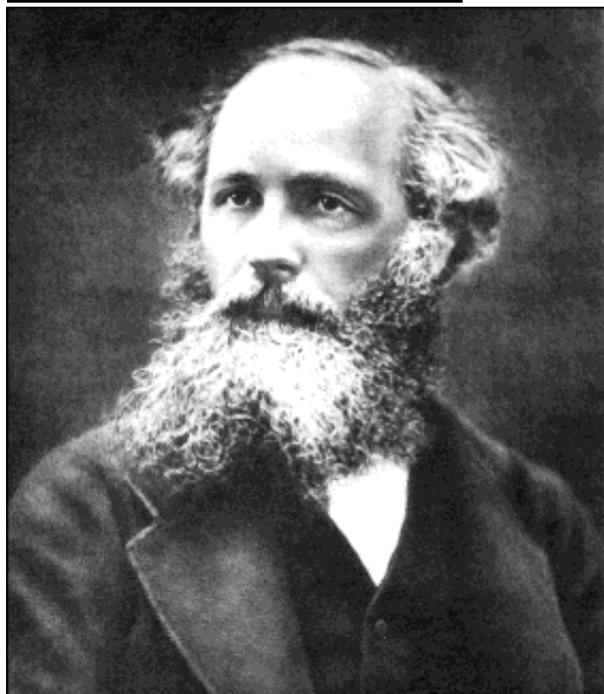
French, b. ?

### Massieu functions

Massieu, M.F., *Compt. Rend.* **1869**, 69, 858; 1057

### Biographical references:

## James Clerk Maxwell



13 June 1831 - 5 November 1879

Scottish, b. Edinburgh, Scotland

### Maxwell's equations

Maxwell, J.C., *Phil. Trans.* **1865**, 155, 459

Maxwell, J.C., *Treatise on Electricity and Magnetism*, Oxford Clarendon Press: Oxford: 1892

### Maxwell's thermodynamic equations

Maxwell, J.C., *Theory of Heat*, 1871

### Maxwell distribution

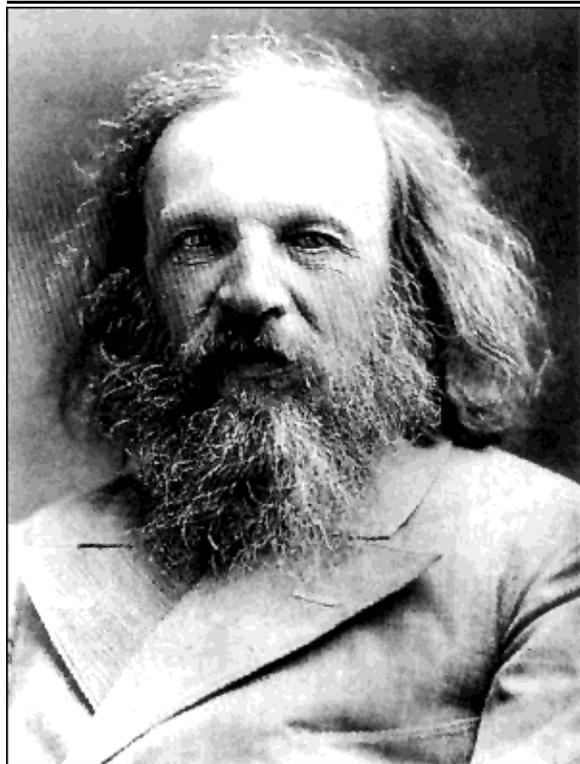
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## Dimitri Ivanovich Mendeleev (Mendeleev)



7 February 1834 - 7 February 1907  
Russian, b. Tobol'sk, Siberia, Russia

### Mendeleev periodicity law

Mendeleev, D., *J. Russ. Chem. Soc.* **1869**, 1, 60

Mendeleev, D., *J. Russ. Chem. Soc.* **1871**, 3, 25

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Makhova, I.V.; Davies, S.J. *Mendeleev Commun.* **1991**, 1, iv

## Maud Leonora Menten



20 March 1879 - 20 July 1960

Canadian, b. Port Lambton, Ontario, Canada

### Michaelis-Menten equation

Brown, A.J. *J. Chem. Soc. Trans.* **1892**, 61, 369

Brown, A.J. *J. Chem. Soc. Trans.* **1902**, 81, 373

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Ogilvie, Marilyn; Harvey, Joy (eds.) *The Biographical Dictionary of Women in Science*, Routledge: New York, 2000, p. 882

## Leonor Michaelis

16 January 1875 - 8 October 1949

German-American, b. Berlin, Germany

### Michaelis-Menten equation

see Maud Leonora Menten

**Biographical References:**

Michaelis, L., *Biog. Memoirs Natl. Acad. Sci.* **1958**, 31, 282

**William Hallowes Miller**

6 April 1801 - 20 May 1880

British, b. Llandovery, Carmarthenshire, Wales

Miller's law

Miller indices, Miller index, Miller-Bravais indices

Miller, W.H. *Camb. Phil. Soc. Trans.* **1835**, 5, 431

Millerite (NiS)

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**Philip McCord Morse**

6 August 1903 - 5 September 1985

American, b. Shreveport, Louisiana, USA

Morse potential

Morse, P.M., *Phys. Rev.* **1929**, 34, 57

Rosen, N.; Morse, P.M., *Phys. Rev.* **1932**, 42, 210

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Feshbach, H., *Biog. Memoirs Natl. Acad. Sci.* **1994**, 65, 243

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**Henry Gwyn Jeffreys Moseley**



23 November 1887 - 10 August 1915

British, b. Weymouth, England

### Moseley's law

Moseley, H.G.F., *Phil. Mag.* **1913**, 26, 1024

Moseley, H.G.F., *Phil. Mag.* **1914**, 27, 703

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Heilbron, J.L. *Isis* **1966**, 57, 336

Ozel, M.E. *Neuroquantology* **2008**, 6, 72

## Hermann Walther Nernst



25 June 1864 - 18 November 1941

German, b. Briessen, West Prussia, now Wabrezno, Poland

Nobel Prize Chemistry 1920

### Nernst equation

Nernst, H.W., *Z. Physik. Chem.* **1889**, 4, 129

Nernst, H.W., *Z. Physik. Chem.* **1888**, 2, 613

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### Nernst heat theorem

Nernst, W. *Sitzber. Preuss. Akad. Wiss.* **1906**, 933

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Hiebert, E.N. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1978, Vol. 15, 432

## Franz Ernst Neumann

11 September 1798 - 23 May 1895

German, b. Joachimsthal, Germany (now Jachymov, Czech Republic)

Neumann's law (extension of Dulong-Petit law)

Neumann, F. *Ann. Physik* **1831**, 23, 1

### Biographical References:

- Burke, J.G. in Gillispie, Charles Coulston (ed.), *Dictionary of Scientific Biography*, Charles Scribner & Sons: New York, 1980, Vol. 10, 26

## John Mitchell Nuttall

21 July 1890 - 28 January 1958

British, b. Todmorden, Yorkshire, England

Geiger-Nuttall law

See Hans Johannes Wilhelm Geiger

### Biographical references:

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Rochester, G.D. *Nature* **1958**, 181, 1307  
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## Frederic Phillip Olsen

23 October 1937 - ?

American, b. Trenton, New Jersey, USA

Bunnett-Olsen equations

See Joseph Frederick Bunnett

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<http://www.library.yale.edu/pubstation/databases/biogen.html>

*American Men of Science, Physical and Biological Sciences*, 11th ed.,

R.R. Bowker: Providence, N.J., 1967

## Lars Onsager



27 November 1903 - 5 October 1976

Norwegian-American, b. Christiania, now Oslo, Norway

Nobel Prize Chemistry 1968

Onsager reciprocal relations

Onsager, L., *Phys. Rev.* **1931**, 37, 405

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Onsager limiting law

Onsager, L., *Physik. Z.* **1926**, 27, 388

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Kirkwood-Onsager equation

see John Gamble Kirkwood

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American Chemical Society: Washington, DC, 1993, p. 500  
Abbott, David (ed.), *The Biographical Dictionary of Scientists: Chemists*,  
Peter Bedrick Books: New York, 1983

## Friedrich Wilhelm Ostwald



2 September 1853 - 4 April 1932  
Latvian, b. Riga, Latvia

Nobel Prize Chemistry 1909

### Ostwald dilution law

Ostwald, W.F., *Z. Physik. Chem.* **1888**, 2, 36  
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### Biographical References:

*Pogg.* 3, 991; 4, 1101; 5, 929; 6, 1928  
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Partington, J.R. *Nature* **1953**, 172, 380  
Partington, J.R., *A History of Chemistry*, Vol. IV, Macmillan and Co., Ltd.:  
London, 1964, p. 595, 729

## Arthur Lindo Patterson

23 July 1902 - 6 November 1966

New Zealander, b. Nelson, New Zealand

Patterson functions (Fourier series in x-ray crystallography)

Patterson, A.L. *Z. Krist.* **1931**, 76, 177; 187

Patterson, A.L. *Phys. Rev.* **1934**, 46, 372

Patterson, A.L. *Z. Krist.* **1935**, 90, 517; 543

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Hannibal: Missouri, 1968

## Alexis Thérèse Petit

2 October 1791 - 21 June 1820

French, b. Vesoul, Haute-Saône, France

Dulong-Petit law

see Pierre Louis Dulong

Biographical References:

Abbott, David (ed.), *The Biographical Dictionary of Scientists: Chemists*,

Peter Bedrick Books: New York, 1983

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

London, 1964, p. 200

## Michael Polanyi

12 March 1891 - 22 February 1976

Hungarian-British, b. Budapest, Hungary

Evans-Polanyi relation

see Meredith Gwynne Evans

### Biographical references:

Wigner, E.P.; Hodgkin, R.A., *Biog. Memoirs Fellows Roy. Soc.* **1977**, 23, 413

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

## Joseph Louis Proust



26 September 1754 - 5 July 1826

French, b. Angers, France

Proust's law (law of definite proportions)

Proust, J.L., *Ann. Chim.* **1799**, 32, 26

### Biographical References:

Farber, Eduard (ed.), *Great Chemists*, Interscience Publishers: New York, 1961

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