Control of colloid stability through zeta potential.

**Control of Colloid Stability through Zeta Potential**

(and its relationship to cardiovascular disease)

by Thomas M. Riddick

Published in 1968

---

**SUGGESTED REFERENCE MATERIAL**

There is little published material on the practical aspects of Zeta Potential, (as of 1968) and there are few books dealing solely with cell electrophoresis or Zeta Potential. The following publications, selected from the writer's library, are recommended. They range from introductory to sophisticated.

1 — Introduction to Colloid Chemistry — including the Zeta Potential

1–1 Introduction to Colloid Chemistry—Mysels—Interscience (Wiley)—1959


2 — Introduction to Physical Chemistry

2–1 Experimental Physical Chemistry—Daniels et al—McGraw-Hill—1956

2–2 Physical Chemistry—Daniels & Alberty—Wiley—1966

2–3 Industrial Chemistry of Colloidal and Amorphous Materials—Lewis et al—Macmillan—1942

3 — Introduction to Organic Chemistry

3–1 Introduction to Organic Chemistry—Lowy, Harrow & Apfelbaum—Wiley—1951


4 — Electrophoresis and the Zeta Potential
4–1 Electrophoresis—Ed. by Milan Bier—Academic Press—1959


4–4 Advances in Colloid Science—Ed. by Mark & Verwey—Vol. III —Interscience—1950


4–6 Electrophoresis of Proteins and the Chemistry of Cell Surfaces—Abramson, Moyer and Gorin—1942—Reprinted by University Microfilms, Arsn Arbor, Mich. —1962

4–7 Selected Papers by A. P. Black and associates, dealing with cell electrophoresis and (unless otherwise noted) appearing in the Journal of AWWA, New York, N.Y.

a.) Electrophoretic Studies of Water Coagulation—50, 1467 (1958)

b.) Basic Mechanisms of Coagulation—52, 492 (1960)

c.) Electrophoretic Studies of Turbidity Removal by Coagulation with Aluminum Sulfate—53, 438 (1961)


e.) Electrophoretic Studies of Sludge Particles Produced in Lime-Soda Softening—53, 737 (1961)

f.) Determination of the Mobility of Colloidal Particles by Microelectrophoresis—54, 926 (1962)


h.) The Nature of Organic Color in Water—Part I—55, 753 (1963); Part II—55, 897 (1963)

i.) Stoichiometry of the Coagulation of Color—Causing Organic Compounds with Ferric Sulfate—55, 1347 (1963)

j.) Electrophoretic Studies of Turbidity Removal with Ferric Sulfate—56, 99 (1964)
5 — Colloid and Physical Chemistry

5–1 Colloid Science—Alexander & Johnson—Oxford Univ. Press—1950
5–2 Physical Chemistry—Rutgers—Interscience—1954
5–3 Colloid Science—McBain—D.C. Heath & Co.—1950
5–4 Physical Chemistry of Surface Films—Harkins—Reinhold—1952
5–5 Colloid Science—Symposium—Chemical Publishing—1947
5–7 Physical Chemistry of Surfaces—Adamson—Interscience—1960
5–8 Colloidal Dispersions—Carl Fisher—Wiley—1950
5–9 An Introduction to Colloid Chemistry—Van Olphen—Wiley—1963
5–10 Action of Phosphates on Finely Divided Solids—John W. Lyons-Monsanto Chemical Co., St. Louis, Mo.—1961
5–12 Alkali Soils—W. P. Kelly—Reinhold—ACS—1951
5–14 The Alkaline Earth and Heavy Metal Soaps—Stanley B. Elliott—Reinhold—ACS—1946
5–16 Surface Chemistry—Lloyd Osipow—Reinhold—ACS—1962
5–18 Phthalocyanine Compounds—Moser & Thomas—Reinhold—ACS—1963

5–19 The Chemistry and Physics of Clays—Searle & Grimshaw—Interscience—1959

5–20 Fats & Oils—Kirschenbauer—Reinhold—1960

5–21 Emulsion and Water Soluble Paints and Coatings—Martens—Reinhold—1964


5–23 Physical Chemistry—Moore—Prentice-Hall—1962

5–24 Interfacial Phenomena—Davies & Rideal—Academic—1963


5–26 Organic Colloids—jirgensons—Elsevier—1958


5–29 On Physical Adsorption—Ross & Olivier—Interscience—1964

5–30 Chemisorption—Hayward & Trapnell—Butterworths—1964

5–31 Emulsions—Paul Becher—Reinhold—1965

5–32 Chemistry & Physics of Interfaces—Symposium, June 15/16, 1964—ACS—1965

6 — Polymer Chemistry

6–1 Natural and Synthetic High Polymers—Meyer—Interscience—1950

6–2 Principles of Polymer Chemistry—Flory—Cornell Univ. Press—1953

6–3 Textbook of Polymer Chemistry—Billmeyer—Interscience—1957

6–4 An Introduction to the Organic Chemistry of High Polymers—Marvel—Wiley—1959

6–5 Physical Chemistry of High Polymers—Huggins—Wiley—1958
6–6 Developments in Inorganic Polymer Chemistry—Lappert & Leigh—Elsevier—1962

6–7 The Chemistry of Plant Gums and Mucilages—Smith & Montgomery—Reinhold—ACS—1950


6–9 Water Soluble Resins—Davidson & Sittig—Reinhold—1962

6–10 List of Papers by V. K. LaMer and associates (Healy, Kane, Linford, Smelieie, and others), dealing with coagulation—particularly with long-chain polymers:

   a.) Journal Colloid Science—11,704 — 11,710 — 11,720 (1956); 12,230 — 12,566 (1957); 13,589 (1958); 19,323 (1964)

   b.) Journal Phys. Chem.—66,1835 (1962); 67,2417 (1963); 67,1977 (1963); 68,2273 (1964)

   c.) Rev. Pure Appl. Chem.—13,112 (1963)

   d.) Journal Am. Chem. Soc.—86,3450 (1964)

6–11 Properties and Structure of Polymers—Tobolsky—Wiley—1960

6–12 Autohesion and Adhesion of High Polymers (Polymer Reviews, Vol. 4)—S.S. Voyutskii—Interscience (Wiley)—1963

7 — Surfactants

7–1 Surface Active Agents—Vol. I—Schwartz—Interscience—1949


7–3 Detergents and Emulsifiers (A listing of the principal surfactants produced in the U.S.A.)—Revised yearly—Published by John W. McCutcheon, Inc., Morristown, N.J.


7–6 The Structure of Polymers—M.L. Miller—Reinhold—1966
8 — Electro-Chemistry

8–1  Introduction to Electro-Chemistry—Glasstone—Van Nostrand—1942
8–2  Electro-Chemistry—Kortum & Bockris—Elsevier—Vols. 1 & 2, 1951

9 — Organic Chemistry


10 — Coagulation of Raw Sugar Juice

10–1  Papers by C. M. Bennett and associates on Coagulation and the Zeta Potential—Int'l Sugar Journal—1959, 1960

11 — Blood Stability and Related Subjects

11–7  Lipoids and Blood Platelets—Ferguson—Univ. of North Carolina Press—Chapel Hill—1960
11–9  Hemorrhagic Disease—Quick—Lea & Febiger, Philadelphia—1957
11–10 Standard Values in Blood—Albritton—W.B. Saunders Co.,
Philadelphia—1952


11-14 Thrombohemorrhagic Phenomena—Hans Selye—Chas. C. Thomas —1966


11-16 Selected Papers by Melvin Knisely and associates on Intravascular Coagulation


   c.) Sludged Blood—Transactions of the Amer. Therapeutic Soc., Vols. XLVIII and XLIX, 1950

   d.) Settling of Sludge in Human Patients—Angiojogy, Vol. 9, No. 6, Dec. 1958


   f.) Experimental Separation of Quite Different Types of Circulatory Shock—Shock & Hypertension—Grune & Stratton—1965

   g.) Intravascular Agglutination of the Flowing Blood Following the Injection of Radiopaque Contrast Media—Neurology, Vol. 12, No. 8, Aug. 1962, Minneapolis MN

   h.) Knowlesi Malaria in Monkeys II—Angiology, Vol. 15, No. 9, Sept. 1964

   i.) Intravascular Erythrocyte Aggregation (blood sludge)—Handbook of Physiology, Section 2: Circulation, Vol. III, 1965


11–18 The Physiology of Blood Platelets—Marcus and Zucker—Grune & Stratton—1965

11–19 Coagulation and Transfusion in Clinical Medicine—Johnson & Greenwalt—Little, Brown & Co.—1965

11–20 Disseminated Intravascular Coagulation—Col. Robert M. Hardaway—Chas. C. Thomas—1966

11–21 Disseminated Intravascular Coagulation—Donald McKay—Hoeber Div. of Harper & Row—1965

11–22 Osmotic Regulation in Aquatic Animals—August Krogh—1939—Repr. by Dover—1965

11–23 Medical Electronics in Cardiovascular Disease—Chas. K. Friedberg—Grune & Stratton—1963

11–24 Diseases of the Heart—Chas. K. Friedberg—W.B. Saunders Co.—1956


11–26 The Electrical Activity of the Nervous System—Mary Brazier—MacMillan—1958

11–27 Cardiovascular Dynamics—Rushmer—W.B. Saunders Co.—1961

11–28 Physiology and Biophysics of the Circulation—Alan C. Burton—Year Book Medical Publishers—1965

11–29 Diseases of the Heart and Blood Vessels—N.Y. Heart Assn.—Little, Brown & Co.—1964


11–31 Electrocardiography—Michael Bernreiter—J.B. Livpincott—1965


11–33 The Heart Beat—Aldo A. Luisada—Hoeber—1953
null
and Disease by in vivo light microscopy and in vitro electron microscopy—Angiology, 7:479–494

e.) Diabetes and the Living Microvascular System—New York Acad. Sciences

f.) The Effect of Cellular Aggregation on Pressure-flow Relationship in the Microvascular System—Angiology, 12:473–476


11–51 Standard Values in Nutrition and Metabolism (Biological Handbook series)—1954 (Same publisher as Ref. 11–50)

11–52 Handbook of Circulation (Biological Handbook series)—1959 (Same publisher as Ref. 11–50)

11–53 Hypertension—Recent Advances—Ed. by Brest & Moyer—Lea & Febiger—1961


12—Miscellaneous

12–1 Nuclear Technology for Engineers—Ellis—McGraw-Hill—1959

12–2 Property of Ordinary Water Substance—Dorsey—Reinhold—1940

12–25 The Nature of Physical Theory—Bridgman—Reprinted by Dover—1936


12–28 Boron-Nitrogen Chemistry—Symposium—ACS—1964


12–32 Asbestos Fundamentals—Hans Berger—Chemical Publishing Co.—1963

12–33 Experiments and Observations on the Gastric Juice and the Physiology of Digestion—William Beaumont, M.D.—Dover Publications—1959

12–34 Classics of Medicine and Surgery—Dover Publications—1959


12–37 A Story of Nutritional Research: The Effect of Vitamin A and D—Sir Edward Mellanby—Williams & Wilkins Co.—1950

12–38 The Vitamins—Sherman and Smith—ACS Monograph Series #6—Reinhold Publishing—1931


Today, the Science of "Zeta Potential" is used by Hundreds of different industries.
This knowledge is used to improve many things and processes; from concrete to 
beer, and much much more ...

Scirus is a powerful new Search Engine for locating scientific information.
Searching for "Zeta Potential" on Scirus, returns a count of over 5,800 different 
journal articles and web pages relating to the subject of Zeta Potential.

Control of Colloid Stability through Zeta Potential
by Thomas M. Riddick — Introduction

Excerpts and Important Material — Glossary

Dr. T.C. McDaniel — "Using Zeta Potential as a Healing Tool"

The EDTA Story — Using Disodium EDTA as an Anionic Surfactant

The Art of Healing Ourselves

Using Hydroponics to Understand the Earth's Life Processes
On the Atomic Level

Tommy's History Of Western Technology

Site Link List

The Tortoise Shell "Science of Health" Newsletter
— Putting an End to Disease on Our Planet —

Tortoise Shell Life Science Puzzle Box – Front Page