

RAYMOND S. FARINATO

14 Creeping Hemlock Dr.
Norwalk, CT 06851 USA
Married; 1 child

mobile: +1 203-570-9040
email: rsf2106@columbia.edu
raymond.f@optonline.net



EDUCATION

B.S. Chemistry, Rensselaer Polytechnic Institute, Troy, N.Y., **1971**.

Ph.D. Physical/Colloid Chemistry, University of Massachusetts, Amherst, MA, **1976**.

Thesis: "Light Scattering Studies of Anisotropic Molecular and Colloidal Structures".

Advisor: Prof. R.L. Rowell.

Post-Doctoral in Biophysics, University of California, Berkeley, **1976-1978**.

Topic: Electro-optic studies of DNA.

Advisor: Prof. C. T. O'Konski.

WORK EXPERIENCE

Academic

2020-present: Professor of Professional Practice in Department of Earth & Environmental Engineering, Columbia University

2005-2020: Adjunct Professor in Department of Earth & Environmental Engineering, Columbia University. Developed and taught graduate course on 'Advanced Colloid and Surface Chemistry' (CHEE E6252).

1996-2008: Short Course Instructor: Polyelectrolyte Physical Chemistry (1997 – 2000, 2003, 2006); Colloid Stability (1996, 1998, 2004); Solid-Liquid Separation in Oilfield Waste Management (2007, 2008)

1979: Assistant Professor of Physical Chemistry, University of Massachusetts, Amherst, MA. Taught physical chemistry laboratories and conducted research in light scattering.

1978: Instructor of General Chemistry at City College of San Francisco. Complete responsibility for lectures and laboratories.

Industrial

1981-2006 and 2010-2020: Research Chemist (1981-85); Associate Research Fellow (1985-90); Research Fellow (1990-2006); Senior Research Fellow (2010-2020) with Solvay (formerly Cytec Industries Inc. and American Cyanamid Company), Stamford, CT, USA.

Performed basic and applied research in water treating, water-soluble polymers, surface chemistry, mineral processing, and materials science groups. Expertise in the physical chemistry of colloids, surfaces, polymer solutions, colloid-polymer interactions, emulsions, and adhesion; including the use of light scattering, particle size analysis, flow microcalorimetry, and solution rheology for characterization. Responsible for initiating projects and working with water treating, paper, oilfield, coatings, engineered materials and mining groups on macromolecular, surface, and colloidal problems: most recently in mineral processing, environmental clean-up technologies, water soluble polymer and emulsion characterization, and the adsorption of macromolecules & surfactants. Technical team leader for determining structure-function relationships in flocculation and applying this information to waste management industries (water and oilfield). More recently involved in developing internal education program for technical community.

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2006-2010: Research Fellow with Kemira Water Solutions, Inc. (Kemira purchased Water Treating department of Cytec Industries in 2006), Stamford, CT and Atlanta, GA.

Continuation of research and development projects in water treatment, oil field waste treatment, macromolecular characterization, and colloid chemistry (see above).

1980: Coastal engineer at Nearshore Environment Research Center (NERC), Tokyo, Japan. Developed spectroscopic technique for sand tracer analysis and wrote software to analyze littoral transport data; objective was to control shoreline erosion.

1979-1980: Consultant to Lawrence Berkeley Laboratories on effects of magnetic and electric fields, and ionizing radiation on DNA; provided a scientific basis for health risk analyses.

1976-1978: Post-doctoral research chemist and general chemistry instructor, Univ. of Calif., Berkeley and Lawrence Berkeley Laboratories. Performed transient electro-optic studies of DNA macromolecular dynamics and interactions with radiation and anti-cancer drugs (with Prof. C.T. O'Konski).

1971-1976: Various positions within the University of Massachusetts Chemistry Department. Research assistant in applications of light scattering techniques to colloids and macromolecules.

1971: Laboratory assistant in Physical Chemistry, Rensselaer Polytechnic Institute. Performed studies in non-aqueous electrochemistry (with Prof. R.P.T. Tomkins).

1971, 1970, 1969 (summers; co-op student): Chemist for Norton Co., Troy, N.Y. (co-op education program at RPI). Projects included: chromatographic analysis of resin mixtures for coated abrasives (with Dr. F. Backer); development of aqueous emulsifiers for adhesives emulsions (with Dr. P.K. Sartoris); characterization of low surface energy polymers for release coatings (with Dr. A. Schwarcz).

SOCIETIES

American Chemical Society (Colloid & Polymer Divisions)

American Physical Society (Society of Rheology)

IACIS (International Association of Colloid and Interface Scientists)

SME (Society for Mining, Metallurgy and Exploration)

Sigma Xi

United States Aikido Federation; member Board of Directors

Phi Kappa Theta Fraternity

ACADEMIC & PROFESSIONAL ACHIEVEMENTS

Graduated Cum Laude from RPI; Four-year RPI Scholarship

Phi Lambda Upsilon

Polaroid Corp. Scholarship

NSF NATO ASI Fellowship

Cytec Industries Circle of Excellence Award (2005)

Solvay Fellow (2016 – 2020)

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PROFESSIONAL ACTIVITIES

ACS meeting session organizer for 1991, 1993, 1996, 2003

Co-chair for 13th ICSCS and 83rd Colloid and Surface Science Symposium (Columbia Univ.) 2009

Founding member and organizing committee member of *International Symposium on Polyelectrolytes*

1993: Denver, CO

2004: Amherst, MA

2014: Ein Gedi, Israel

1995: Potsdam, Germany

2006: Dresden, Germany

2016: Moscow, Russia

1998: Tokyo, Japan

2008: Coimbra, Portugal

2018: Wageningen, Netherlands

2000: Les Diablerets, Switz.

2010: Shanghai, China

2021: Shanghai, China (online)

2002: Lund, Sweden

2012: Lausanne, Switzerland

2023: Prague, Czechia

Ion-Containing Polymers Gordon Conferences: 1995, 1997, 1999, 2001 (chair), 2003 (session chair)

Intertech Conference on Coagulants and Flocculants chairman 2005

Editorial Boards: *Encyclopedia of Colloid and Surface Science* and *Langmuir*

Advisory Board of *Tulane Center for Polymer Reaction Monitoring and Characterization*

Unilever Award committee: 2013 – present (annually)

Frequent reviewer for: *Minerals Engineering*, *International Journal of Mineral Processing*, *Minerals, Colloids and Surfaces A*

PUBLICATIONS

A list of journal publications, books, and patents (96 total with 2 in progress) is embedded in the file below.



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