September 21, 2017

Wayne F. Reed
Physics Dept.
Tulane University
New Orleans, La. 70118
ph. 504-865-5520, FAX 504-862-8702, e-mail
wreed@tulane.edu

Professional Experience

Murchison-Mallory Chair in Physics	7/2013-
Interdisciplinary Professor in Chemical and Biomolecular Engineering	1/2016-
Professor of Physics	7/94-
Founding Director, Tulane Center for Polymer Reaction Monitoring and Characterization (PolyRMC)	7/07-
Chief Scientific Officer, Fluence Analytics, Inc. (previously Advanced Polymer Monitoring Technologies, In	3/2012-
Professor and Chairman of Dept. of Physics	7/1/97-6/30/00
Associate Professor of Physics, Tulane Uni.	7/91-6/94
Assistant Professor of Physics, Tulane Uni.	7/85-6/91
Research Assistant Professor of Phys. and Chem., Clarkson Uni.	7/84-6/85
Research Physicist/Physics Instructor, Physics & Chemistry Departments, Clarkson University	1984-85 1/82-6/84
Research Associate, Dept. of Chemistry, Texas A&M Uni.	6/80-12/81
Physics Instructor, Catholic University of Puerto Rico	1978-80
Staff Scientist, SPIRE Corporation, Bedford, MA	1977-78

Education

Ph.D. Physics	Clarkson University	1984
M.S. Physics	University of Washington	1976
B.S. Physics	Rensselaer Polytechnic Institute	1975

Research Interests

Macromolecular Physics and Characterization, Polymer Science and Engineering, Molecular Biophysics, Colloid Phenomena, Light Scattering, non-equilibrium processes in polymeric systems such as degradation, aggregation, phase separation, gelation, polymerization, solubilization. Enzyme Dynamics, Self-Organizing Molecular Media, Protein aggregation, Novel Scientific Instrumentation Development, polymerization monitoring, high throughput screening.

Visiting Appointments

Visiting Professor, Université de Bordeaux, France, May-June 2009

Visiting Professor, Université de Pau, Polymer Institute, France, summer 2000

Professeur de l'Academie des Sciences, Institut de France, CERMAV/CNRS Grenoble, France 7/92-8/93

Visiting Professor, Universidade de São Paulo, Brazil, Campinas, U. Fed. de Sta. Catarina 1/2-1/20/89 5/15-6/11/90, 8/7-8/21/91, 11/18-12/2/93, 5/6-6/3/95, 5/7-5/31/96, 5-6/98

Chargé de Recherche, Institut Charles Sadron, CNRS, Strasbourg, France, 9/91-12/91

Visiting Research Associate, Max Planck Institut f. biophysikalische Chemie
Goettingen, West Germany, Summer 1983

Visiteur Expert, Ecole Polytechnique Federale de Lausanne, Switzerland, Summer 1981

Foreign Languages
Written and spoken fluency: Spanish, French, German, Portuguese
Working knowledge: Russian, Italian

Honors, Awards, and other Mentions
Largest peer-reviewed scientific grant in Tulane School of Science and Engineering, 2015

U.S.A. International Observer for the March 29, 2015 presidential election in Uzbekistan. At the invitation of the Uzbek National Election Committee

U.S.A. delegate to the Conference on Middle Eastern Scientists, May 14-16, 2014, Samarqand, Uzbekistan, as an official guest of the President of Uzbekistan

Murchison-Mallory Chair Professor of Physics, Investiture 11/2013

Outstanding Researcher Award, Tulane School of Science and Engineering, 2012

Selected by New Orleans City Business as a New Orleans Innovator of the Year, Sept. 2007.

Selected by Louisiana Board of Regents as most successful University/Industrial Ties program, 2001.

Tulane's Excellence in Undergraduate Teaching Award, 1996.

Appointed as Professor of the French Academy of Sciences (L'Académie des Sciences, Institut de France) in 1992. Award in conjunction with the French National Science Foundation (CNRS) and Elf Aquitaine Corporation.

Fulbright Commission grant for scientific mission to French Biophysics and Polymer Science Laboratories, May-June 1986.

Patents and related activity
1. W.F. Reed, U.S. Patent # 6,052,184, "A Miniature, Submersible, Light Scattering Probe for Absolute Macromolecular and Colloidal Characterization". 59 claims, issued 4/18/2000. Licensed by Tulane to Brookhaven Instruments Corp. (NY), 2000-

2. W. F. Reed, US Patent #6,653,150, "Automatic mixing and dilution methods for online characterization of equilibrium and non-equilibrium properties of solutions containing polymers and/or colloids". Submitted, 9/24/99, issued 11/25/03. Licensed 3/04-1/15/09 by Tulane to Polymer Laboratories, Inc. (Amherst, Mass.). Licensed to Advanced Polymer Monitoring Technologies, Inc. (New Orleans, LA), 3/2012-

3. W.F. Reed US Patent #6,618,144, "Device and method of simultaneously measuring the light scattering from multiple liquid samples containing polymers and/or colloids" 82 claims, issued 9/9/2003. Licensed to Advanced Polymer Monitoring Technologies, Inc. (New Orleans, LA), 3/2012-

4. W.F. Reed, U.S. Patent and #8,322,199 on December 4, 2012, international rights pending, "A device for the automatic, continuous extraction and dilution of high viscosity fluids", provisional patent application filed May 21, 2002, full application on 5/21/03. Licensed 3/04-1/15/09 by Tulane to Polymer Laboratories, Inc. (Amherst, Mass.). Licensed to Advanced Polymer Monitoring Technologies, Inc. (New Orleans, LA), 3/2011-

5. W.F. Reed, A.M. Alb, et al. US Patent #7,716,969, "Methods and devices for simultaneously monitoring the characteristics of microscopic particles in suspension and the characteristics of soluble components during reactions", full application 9/29/07. Issued 5/18/2010. Licensed to Advanced Polymer Monitoring Technologies, Inc. (New Orleans, LA), 3/2011-

6. W.F. Reed, "Methods and Instrumentation for During-synthesis Monitoring of Polymer Functional Evolution", Patent application 6/5/09. PCT WO 2009/149328A2, 12/10/2009.

7. W.F. Reed, " A device and method for monitoring the presence, onset and evolution of particulates in chemically or physically reacting systems and their intermediate and end products", full application filed 14, February 2012. Licensed to Advanced Polymer Monitoring Technologies, Inc. (New Orleans, LA), 3/2011-

8. W.F. Reed, "Devices and methods for liquid state characterization and accelerated testing of solids containing polymeric or colloidal materials", Provisional patent application filed in Oct. 2012. Abandoned in 2013.

9. W.F. Reed, M.F. Drenski, A.W. Reed, US Patent # **9,664,608** Devices and methods for increasing the versatility of light scattering for the characterization of polymer and colloid solutions , non-provisional patent application filed Aug. 31, 2014. Issued May 30, 2017

10. W.F. Reed and M.F. Drenski, Systems and methods for the active control of polymer reactions and processing using automatic continuous online monitoring of polymerization reactions (ACOMP), non-provisional patent application filed Oct. 1, 2015. iEdison # 8424601-14-0003

11. W.F. Reed, Device and method for changing solution conditions in serial flow. Non-Provisional patent filed Oct. 13, 2015

12. W.F. Reed, U.S. Patent #9,568,462 "Methods and Instrumentation for During-synthesis Monitoring of Polymer Functional Evolution", Filed as a non-provisional continuation under new claims, PCT 14/851,281, Sept. 11, 2015. Patent allowed 10/6/2016

13. W.F. Reed, Michael F. Drenski, "Systems and methods for predicting and controlling the properties of a chemical species during a time-dependent process", Non-Provisional patent filed Jan. 19, 2016

14. W.F. Reed, "Scheduling analysis and throughput of macromolecular solutions" Non-provisional filed July 21, 2016.

15. W.F. Reed, Daniel Rees, Michael F. Drenski "Device and methods for distinguishing protein aggregation mechanisms", non-provisional filed, January 12, 2017

16. Michael F. Drenski, Alex W. Reed, Wayne F. Reed, "Device and methods for simultaneous determination of intrinsic viscosity and non-newtonian behavior of polymers", U.S. Provisional filed 3/7/16

17. W.F. Reed, Richard Montgomery, Michael F. Drenski, Aide Wu, "Device and methods for separation-free determination of molecular weight distributions of polymers and distributions of other polymer properties", non-provisional submitted, April 21, 2017. iEdison # 8424601-16-0005

18. W.F. Reed, Michael F. Drenski, Natalie Leonardi, "Device and Methods to Actively Control Multi-Stage Polymer Production". Non-Provisional filed 8/31/17

19. W.F. Reed, M.F. Drenski, A.W. Reed, "Device for continuous online monitoring of protein aggregation during manufacturing" Provisional filed 8/10/17

Co-founder and Chief Scientific Officer of Advanced Polymer Monitoring Technologies, Inc (New Orleans), March 2012. Direct Spin-off enterprise from PolyRMC. Currently working under joint development agreement with industries to adapt Tulane's proprietor ACOMP technology, developed by Reed, to full scale manufacturing. A number of capitalization efforts are underway, via industry contracts, federal NSF/SBIR funding for the proprietary SMSLS platform, New Orleans and Louisiana start-up initiative funds. First in history industrial installation of an ACOMP system October 11, 2014. In continuous, successful operation, to-date

Grants and Contracts, completed and ongoing
(cumulative $8,422,000 directly to lab, $25,222,000 in total joint grants and contracts)

Co-PI, (Daniel Savin, PI), 12/1/17-11/30/19, "Development of cost-efficient and concentration-independent dispersants" GoMRI (BP fund)

PI, Dept. of Energy, Innovative Manufacturing Initiative, " Development and Implementation of an Automatic Continuous Online Monitoring and Control Platform for Polymerization Reactions to Sharply Boost Energy and Resource Efficiency in Polymer Manufacturing", $1,875,000. (One of 39 proposals selected from over 1,400 entrants) 12/24/14-6/23/17

Co-PI, NSF/EPSCOR, Louisiana Board of Regents, "The Smart MATerial Design, Analysis, and Processing (SMATDAP) consortium: Building next-generation polymers and the tools to accelerate cost-effective commercial production", 8/1/14-7/31/18, $6,200,000 ($813,000 is Reed lab portion)

PI, 5/2011-12/2017. "Kinetics and dynamics of protein aggregation". Biogen Corp., $385,000.

PI, 1/1/17-12/31/17. "Dynamics of biopolymer encapsulation", Moderna Corp., $90,000

Sub-contract PI, for NSF Phase II SBIR to APMT, Inc. Sub-contract, $98,000. 10/14-10/16

Co-Principal Investigator (Scott Grayson, PI), 10/1/12-3/31/16, "Development of cost-efficient and concentration-independent dispersants" GoMRI (BP fund), $925,211, total, $318,000 to Reed lab.

PI, 1/1/2010-8/12/2016. "Online monitoring of inverse emulsion polymerization", Nalco Co., $406,000.

PI, Sabic Innovative Plastics LLC (Pittsfield, MA), "Exploratory monitoring of complex polymerization reactions", 4/2015-12/2017, $165,300

PI, LG Chem (Daejon, S. Korea), 5/2015-4/2016, "Monitoring stage changeover in step-growth polymerization" , $62,000

PI, La Board of Regents 'Opt-in', "Real-time monitoring of therapeutic protein aggregation using SMSLS", 7/1/14-6/30/15, $49,948

PI 1/14-12/14 "Investigation of emulsion polymerization precursor formulations", Sun Drilling, Inc., Chalmette, Louisiana, $48,900

PI, 5/2013-3/2016. "Accelerated testing of polymer degradation". Pantex Corp. $241,000.

PI, "Monitoring natural product modification processes", Rhodia Corp. (Bristol, PA). 6/1/10-5/31/14. $144,800

PI 11/1/13-3/31/14. "Characterization of ultrahigh molecular weight polymers", Arkema Inc., $9,700

Principal Investigator, 10/2007-5/2012. "Characterization of terpolymer elastomers". Lion Copolymer LLC (Geismar, LA). $102,200.

Principal Investigator, 7/1/06-6/30/2010, "A unified approach to understanding polyelectrolytes by monitoring their synthesis and associated endproduct characteristics with novel methods", National Science Foundation, $233,000

Principal Investigator, 6/1/07-5/31/2010, “Automatic Continuous Online Monitoring of Polymerization reactions and its Applications to Copolymer and Polyelectrolyte Synthesis”, Lousiana Board of Regents, Industrial Ties Research Subprogram, $152,000

Principal Investigator, 3/1/10-12/31/2010. “Kinetics of copolyelectrolyte synthesis”, Rhodia S.A. (Paris, France), $50,000.

Principal Investigator, 11/2008-1/2010. “Monitoring of high temperature polysulfone condensation reactions”. Solvay Advanced Polymers, LLC (Alpharetta, GA), $17,500.

Principal Investigator, 9/5/06-5/31/09, “Monitoring emulsion polymerization reactions”, Arkema, Inc. $181,000

Principal Investigator, 9/15/07-9/14/08, “ACOMP investigation of graft polymerization reactions”, Total North American Services, Inc. $65,400

Principal Investigator, 7/1/07-6/30/2009, “US/Uzbekistan collaboration for characterization of natural products”, U.S. Civilian Research & Development Foundation, $45,000.

Principal Investigator, 7/07-6/10, US/Brazil collaboration. National Science Foundation. $18,700

Principal Investigator, 6/1/06-5/31/07, “Automatic Continuous Online Monitoring of Polymerization reactions and its Applications to Copolymer and Polyelectrolyte Synthesis”, Lousiana Board of Regents, Industrial Ties Research Subprogram, $60,000

Principal Investigator, 8/1/06-/7/31/07, “Fundamental study of grafting reactions”, Total Inc., $70,000

Principal Investigator, 12/1/01-11/30/06, "Real-time monitoring of polymerization reactions: Part II", National Science Foundation, $262,000

Principal Investigator, 6/30/05-3/31/06, “Spectral discrimination of selected comonomers and subsequent demonstration of ACOMP feasibility for copolymerization reactions.”, Arkema, Inc., $83,000

Principal Investigator, 9/7/05-12/1/05, National Science Foundation/La. Board of Regents LINK grant to national research centers, $42,000

Associate Director, Tulane Institute for Macromolecular Science and Engineering (TIMES). 6/1/02-10/31/07, NASA, Daniel De Kee, Principal Investigator, $7,200,000

Principal Investigator, 6/1/99-5/31/01, “Absolute, Real-time Monitoring of Polymerization Reactions”, National Science Foundation, $140,000

Principal Investigator, 9/1/00-8/31/04, "US/Turkey Collaboration; Online Monitoring of Copolymerization", National Science Foundation, $27,000

Principal Investigator, 3/1/04-11/30/04, "Interaction of surfactants and aromatic molecules", Firmenich, S.A., Geneva, Switzerland, $30,000

Principal Investigator, 1/1/03-6/30/03, "Application of Automatic Continuous Online Monitoring to Copolymerization Reactions", International Specialty Products, $17,000

Principal Investigator, 1/1/02-6/30/03, “ACOMP applied to the synthesis of novel polymers and architectures”, Atofina North America, $92,000.

Principal Investigator, 6/1/96-5/31/00, "Innovative Real-Time Optical Monitoring of Industrial Scale Polymer Reactions", LEQSF, Louisiana Board of Regents program for Industrial/University partnerships, $381,000.

Principal Investigator, 2/1/99-7/31/00 "Online Monitoring of Polymerization Reactions", Elf Atochem Corp., $96,000

Principal Investigator, 12/1/99-5/31/00, "Online Monitoring of poly(Vinylpyrrolidone) Reactions", Int'l. Specialty Products, $16,000

Principal Investigator, 3/1/96-10/31/97, 11/97-11/99 "Exploratory Physical Characterization of Polymers", Elf Atochem. Corp., $104,000

Principal Investigator, 3/1/92-8/31/96. "Molecular Biophysics of Glycosaminoglycans and Their Higher Structures", National Science Foundation, $295,000.

Principal Investigator, 9/1/88-2/29/92. "Molecular Biophysics of Glycosaminoglycans and Their Higher Structures," National Science Foundation, $273,000.

Principal Investigator, 3/1/94-12/31/95. "Physics of Interacting Collagen and Polysaccharides", Elf Aquitaine Corp., $71,000

Principal Investigator, 9/1/95-12/31/95, "Development of Fiber Optic Integrity Test Systems for Laser Ignition of Rocket Motors", United Space Boosters Inc. (Div. of United Technologies), $30,000.

Co-Principal Investigator, 9/1/95-8/31/98, "Center for Photoinduced Processes", NSF/EPSCOR, Principal Investigator Gary McPherson, $2,000,000

Co-Principal Investigator, 1/1/87- 12/31/91, "Spectroscopy of Complex Chemical Systems," Louisiana Board of Regents, Gary McPherson, Principal Investigator, $492,000

Principal Investigator, 6/1/90-8/31/95, "Effects of Ionic Strength and Degree of Ionization on Polyelectrolytes", NATO grant for US/France collaboration, $17,000

Principal Investigator, 9/1/91- 2/28/96, "Electrophoresis, Self-Diffusion and Local Potentials of Glycosaminoglycans". National Science Foundation US/Brasil scientific collaboration, $16,000

Principal Investigator, Brookhaven Instruments Corp., Optoelectronic and instrumentation development, 10/31/96-9/30/99, $38,000

Principal Investigator, 9/1/90-6/30/91, Bioenvir. Hazards Res. Initiat. award, DOD; $58,000,

PI, Tulane Molecular and Cell Biology Instrumentation grant for a computer work station, $45,000, 1992

Participation in NNMI (National Network of Manufacturing Institutes

Clean Energy Smart Manufacturing Innovation Institute. $140M, nationwide. Dept. of Energy. Lead institution: UCLA. Lead Organization: SMLC (Smart Manufacturing Leadership Coalition). Lead Louisiana PI: W. Reed. Project "Application of ACOMP to monitoring and control of polyolefin manufacturing"

Rapid Advancement in Process Intensification Deployment. $140M, nationwide. Dept. of Energy. Lead institution: AIChE (Am. Inst. of Chem. Eng.). W. Reed proposed project "Intensification of polymer manufacturing through optimized continuous reactors and multi-stage chemistries"

National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL). $200M, nationwide. National Institute of Science and Technology. Lead institution: U. Delaware. W. Reed proposed project "Light scattering based process analytical technology for downstream processing of therapeutic proteins"

Pending grant proposals
Dept. of Energy. $915,000. Extension of project on active control of polymerization reactions.

Unrestricted cash gifts to W. Reed Lab at Tulane University
Elf Aquitaine S.A. (Paris), 1995-1999, $89,000
Atofina, North America (King of Prussia), 2001-2005, $41,000
Arkema Inc. (Philadelphia), 2005-2009 $56,000
Firmenich S.A. (Geneva), 2000-2004, $31,000
Brookhaven Instruments Corp. (NY), 1996, $7,000
Polymer Laboratories Inc. (Amherst, MA), 2004-2008, $27,000
Degussa GmbH (Munich), 2002, $9,000
Clariant GmbH (Zurich), 2008, $6,500
Rubicon LLC (La.), 2008, $3,600

Other tangible forms of support
These include graduate students fully funded by the Brazilian, German, French, and Uzbek governments, as well as sabbatical support for visiting faculty from numerous universities and foundations, and extensive amounts of instrumentation donated by the private sector.

Invited Presentations at Conferences

Terry McAfee, Natalie Leonardi, Rick Montgomery, Julia Siqueira, Curtis Jarand, Thomas Zekoski, Michael F. Drenski, Wayne F. Reed, "Automatic Control of Free Radical Polymerization Reactions", International Symposium on Polymer Analysis and Characterization, Linz, Austria, June 12-15, 2017

Terry McAfee, Natalie Leonardi, Rick Montgomery, Julia Siqueira, Curtis Jarand, Thomas Zekoski, Michael F. Drenski, Wayne F. Reed, "Automatic control of free radical polymer synthesis", International Forum on Process Analytical Chemistry, Bethesda, MD, Mar. 1-3, 2017

Wayne F. Reed, "Fully Automatic Control of Batch and Semi-batch Polymerization Reactions using Automatic Continuous Online Monitoring of Polymerization Reactions
with a Control Interface (ACOMP/CI)" Challenges for Mathematical Modeling, Simulation and Optimization for Advanced Process Control of Batch Processes, Feb. 9-10, 2017, Heidelberg, Germany

Michael F. Drenski, Natalie C. Leonardi, Richard Montgomery, Phong N. Pham, Wayne F. Reed
1) "Recent advances in Automatic Continuous Online Monitoring of Polymerization reactions"
2) "Novel use of ACOMP at Pilot and Industrial Scale"
Polymer Reaction Engineering IX, Hamburg, Germany, May 17-19, 2016

Wayne F. Reed, Curt Jarand, Mark Brader, "Monitoring protein aggregation kinetics in real-time with SMSLS", Cambridge Healthtech Institute, San Diego, CA, Jan. 19-21, 2016

Michael F. Drenski, Wayne F. Reed, "Recent advances in online monitoring of polymerization reactions", Sci-X Conference, Providence, RI, Sept. 27-30, 2015

Colin A. McFaul, Zifu Zhu, Aide Wu, Michael F. Drenski, Wayne F. Reed, "Monitoring the onset and evolution of polymer stimuli responsiveness during synthesis", ACS meeting, Boston 8/15

Wayne F. Reed, Zifu Zhu, Colin A. McFaul, Michael F. Drenski. "Monitoring the onset and evolution of polymer stimuli responsive behavior during synthesis" 28th International Symposium on Polymer Analysis and Characterization, June 8-10, 2015, Houston, TX

Michael F. Drenski, Colin McFaul, Mark L. Brader, Alina M. Alb, Frederick Twigg, Curt Jarand, Wayne Reed "Monitoring kinetic processes in polymer solutions", ACS meeting, Denver, 3/15

M.F. Drenski, M. Brader, W.F. Reed, "Recent Advances in Monitoring Protein Aggregation Kinetics and Mechanisms with Simultaneous Multiple Sample Light Scattering (SMSLS)", The Bioprocessing Summit, Boston, Mass., 8/18-8/19/2014

W.F. Reed, Zifu Zhu, "Hydrophobic dopant-enhanced and polymer-suppressed supramicellar assemblies", 27th ISPAC , Les Diablerets, Switzerland, June 15-18, 2014

W.F. Reed, “Recent advances in Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP)”, American Chemical Society, Dallas, TX, March 16-20, 2014

W.F. Reed and Mark Brader “Continuous high throughput monitoring of protein formulation stability using SMSLS (simultaneous multiple sample light scattering)”, Bioprocessing Summit, Cambridge, MA, 8/2013

W.F. Reed, “Simultaneous Multiple Sample Light Scattering (SMSLS) Continuous Monitoring of Aggregation in Protein Formulations”, International Symposium on Polymer Analysis and Characterization”, June 2013

W.F. Reed, Mark Brader, Roy Alston, Michael Drenski “Simultaneous Multiple Sample Light Scattering (SMSLS) Continuous Monitoring of Aggregation in Protein Formulations”, Cambridge Healthtech Inst., Palm Springs, CA, January 2013

W.F. Reed, Mark Brader, Roy Alston, Michael Drenski “Simultaneous Multiple Sample Light Scattering (SMSLS) Continuous Monitoring of Aggregation in Protein Formulations”, Conference on Well Characterized Biologicals, Wash. D.C., Nov. 2012

W.F. Reed, “Latest Advances in Polymer Reaction Monitoring and Characterization”, Turkish Polymer Society, Canakkale (Ancient Troy), Turkey, Sept. 2012

W.F. Reed, “Recent advances in polymer characterization during polymer reactions and other non-equilibrium processes”, ISPAC, Kerkrade, Holland, June 2012

W.F. Reed “Advances in online monitoring of polymerization reactions”, International Symposium on Polymer Analysis and Characterization, Torino, Italy, June 2011

W.F. Reed, “Polymerization reaction monitoring”, Plenary speaker. Tosoh Biosciences symposium, ACS, Anaheim, CA, Feb 2011.

W.F. Reed, A.M. Alb, M.F. Drenski, “Recent advances in polymerization reaction monitoring”. Keynote speaker, 10th Int’l. Workshop on Polymer Reaction Engineering. Uni. of Hamburg, Germany. Oct. 2010.

W.F. Reed, Alina M. Alb, Principles and applications of Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP), ISPAC, Postech University, Pohang, S. Korea, May 2010.

W.F. Reed, Michael F. Drenski, Alina M. Alb, "Recent advances in automatic continuous online monitoring of polymerization reactions (ACOMP)". ISPAC meeting at the University of Delaware. June 2008.

W.F. Reed, Alina M. Alb, “Recent Advances in Automatic Continuous Online Monitoring of Polymerization Reactions”, Modelling, Monitoring and Control of Polymer Properties, Vingtièmes Entretiens du Centre Jacques Cartier, Dec. 2007, ESCPE, Lyon, France

A.M. Alb, W.F. Reed, “Automatic Continuous Online Monitoring of Polymerization reactions”, NASCRE-2, Houston Tx., 2/07

W.F. Reed and A.M. Alb, “Automatic Continuous Online Monitoring of Polymerization reactions”, Polymer Reaction Engineering VI, Halifax, Nova Scotia, 5/21-5/26/06

W.F. Reed, "Progress in Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)", plenary speaker, ISPAC, Warwick, England, 6/05

W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)". IUPAC Macro, World Polymer Congress, Paris, France, July 4-9, 2004

W.F. Reed, "Background and applications of multi-detector GPC", American Chemical Society Annual meeting, New Orleans, March 2003,

E. Mignard, H. Giz, A. Giz, F.H. Florenzano, A.M. Alb, R. Farinato, W.F. Reed
"Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)",
American Chemical Society Annual meeting, New Orleans, March 2003

W.F. Reed and G.A. Sorci, “Automatic, continuous light scattering and viscosity monitoring of multicomponent systems; polyelectrolytes, surfactants, and salts”, International Symposium on Polyelectrolytes, Lund, Sweden, June 2002

W.F. Reed, “Automated Methods for Characterizing Equilibrium Properties and non-Equilibrium Processes in Polymer Solutions”, Pittsburgh Conference, New Orleans, March 2002

W.F. Reed, "Monitoring kinetic processes in polymer solutions with time dependent static light scattering", IUPAC Conference, "Scattering methods for the investigation of polymers", Prague, July 2001.

W.F. Reed, plenary seminar "Realtime monitoring of kinetic processes in polymer solutions", Analytical Sciences Meeting, held at Elf Atochem, King of Prussia, Oct. 2000

W.F. Reed "Macromolecular Electrostatics in Random Coiling, Mutual Exclusion and Self-Organization Processes", Annual Meeting of the Brazilian Society for Biochemistry and Molecular Biology, Caxambu, Minas Gerais, Brazil, 5/3-5/7/96

W.F. Reed "Kinetic Processes in Polyelectrolyte Solutions", First International Symposium on Polyelectrolytes, Potsdam, Germany, 9/16-9/22/95

W.F. Reed "Evaluation of Coupled Multi-Angle Light Scattering and Viscosimetric Detectors for SEC, with Application to Polyelectrolyte Characterization", American Chemical Society meeting, Anaheim, Ca., April 1995

W.F. Reed, "Taking Advantage of the Diverse Capabilities of a Multi-Angle Laser Light Scattering Detector; 1) SEC applications, 2) 'batch' measurements and 3) Novel kinetic studies". Wyatt Technology User's Forum, Sta. Barbara, California, Feb. 1994

W.F. Reed and M. Rinaudo, "Unified Viscosimetric and Multi-Angle Laser Light Scattering Detectors in Size Exclusion Chromatography"; Control, Data Analysis and Results for some Polysaccharides." American Chemical Society Meeting, Chicago, Aug., 1993

W. F. Reed "Light Scattering Results on Polyelectrolyte Conformation, Diffusion and Interparticle Interactions and Correlations" American Chemical Society, Polymer Division, Denver, March 1993

W. F. Reed "Physical Properties of Polyelectrolytes", 5th Conference on Colloids and Complex Fluids, San Luís Potosí, Mexico, July 1992

W. F. Reed "Current Methodologies for physical characterization of self-organizing media" US/Brazil Science and Technology Initiative NSF and Brazilian Research Council (CNPq), Guaruja, São Paulo, May 1990

W.F. Reed and Helene Dickson, "Polyelectrolyte Properties of Proteoglycans" American Chemical Society, National Meeting, Colloid Division, New Orleans, Sept. 1987

W.F. Reed and Lee Guterman, "Surfactant Vesicle Photopolymerization: Kinetics and Mechanisms," American Society of Chemical Engineers, New Orleans April 1986

Invited Seminars and Colloquia at Universities, Industries, and Research Institutes

1. "Principios del Contaje de Fotones," Catholic University of Puerto Rico, Ponce, P.R. May 1983

2. "The Basic Theory of Dynamic Light Scattering," St. Lawrence University, February 1984

3. "A Study of Surfactant Vesicle Photopolymerization," Brandeis Uni., Feb. 1984

4. "Fast Laser Spectroscopic Techniques," Virginia Commonwealth Uni., March 1984

5. "Principios y Applicaciones de los Sistemas Auto-organizadores de Moléculas" University of San Marcos, Lima, Peru, June 1984

6. "Tecnología y Applicaciones de los LASERs en la Investigación y en la Industria," Catholic University of Lima, Peru, June 1984

7. "Biophysics and its Relation to Fundamental Questions in Chemistry and Physics," Willamette University, Salem Oregon, February 1985

8. "Laser Spectroscopy in Biophysics," Union College, Schenectady, March 1985

9. "Light Scattering and Special Topics in Molecular Biophysics," Various French Laboratories, 1986

10. Series of lectures on Light Scattering, Laser Spectroscopy and the U.S. System of Graduate Education, Universidade de São Paulo and Universidade Fed. de Santa Catarina, Brasil, August 1986

11."Light Scattering from Macromolecular Solutions," Chemical Eng. Dept., Tulane, October 1986

12. "An Overview of Molecular Biophysics," Loyola U., New Orleans, November 1986

13. "Laser Light Scattering Studies of Hyaluronate," Uni. of New Orleans, Nov. 1987

14. "Polyelectrolyte Properties of Hyaluronate," Kodak Co., Exploratory Sciences Div. June 1988

15. "Estudos Sobre a Biofísica das Glycosaminoglycanes Usando o Espalhamento da Luz," Physics Dept., Univ. of São Paulo, Jan. 1989.

16. "Quelques Problèmes et quelques resultats sur la Biophysique Macromoléculaire des Glycosaminoglycans." Institut Charles Sadron, Strasbourg, France, Sept. 1989.

17-18. "Determination des vitesses des reactions de dépolymerization de chaînes statistiques par diffusion de la lumière." Laboratoire de Spectroscopie Biomoléculaire, Univ. de Paris VI, 11/89, and Centre de Recherche sur les Macromolécules," Grenoble, France, Dec. 1989

19. "Forzas Electrostaticas e Entropicas", Institute of Chemistry, U. São Paulo, May 1990

20. "Espalhamento da Luz por Polimeros Sofrendo Depolimerização". Physics Dept., U. São Paulo, May 1990

21. "Propiedades Físicas de Polielectrolitos" Inst. of Physics and Chemistry, U. São Paulo at São Carlos, Uni. Federal de Santa Catarina and U. São Paulo May- June 1990

22. "Polyelectrolyte Properties of Glycosaminoglycans", Continuum Electromechanics Group, Dept. of Electrical Engineering, MIT, Cambridge, Mass., August 1990

23-25. "Propriétés Polyélectrolytes des Glycosaminoglycanes"
Institut Charles Sadron, Strasbourg, France. May 1991
Centre de Recherche sur les Macromolécules, Grenoble, France. June 1991
Centre d'Etudes Nucleaires, Saclay, Gif-sur-Ivette, France. July 1991

26. "Polyelektrolytische Eigenschaften der Glykosaminoglykane" Max Planck Institut f. Polymerforschung, Mainz, W. Germany. June 1991

27-30. Series of lectures on polyelectrolyte physics and molecular biophysics. Institutes of Chemistry and Physics, São Paulo U., Brasil. August 1991

31. "Physical Properties of Polyelectrolyte Solutions", Natick Army Research Laboratories, Natick, Massachusetts, January 1992

32-33. "Propriétés Physiques des Polyélectrolytes", CERMO/CNRS, Grenoble, March 1993, and Institut de Chimie de Polymères, Paris, Uni. Pierre et Marie Curie, June 1993

34. "Dimensions, Diffusion, Interparticle Interactions and Correlations in Polyelectrolyte Solutions", Uni. di Pavia, Italy, May 1993

35. "Comportement des Macromolécules Electriquement Chargées" L'Academie des Sciences, Institut de France, Paris, June 14, 1993

36. "Avancés Technologiques et Scientifiques dans la Caracterisation des Macromolécules", Sanofi Bio-industries, Elf Aquitaine Corp., Paris, June 1993.

37. "Derniers Developements de la Chromatographie d'Exclusion Sterique au CERMAV", CERMAV/CNRS, Grenoble, June 1993

38. "Etudes par DDL et SEC des Polyélectrolytes", ICM, Strasbourg, July 1993

39. "Les Macromolécules Electriquement Chargées", half hour interview for Radio France Culture program "Les Avenues de la Recherche", Broadcast Nov. 12, 1993

40-43 "Principios e Tecnicas para a Caracterização Macromolecular" PETROBRAS, Brazilian Petroleum Co. Research Division, Rio de Janeiro, Nov. 1993
Universidade Federal de Parana, Curitiba, Nov. 1993
Universidade Federal de Santa Catarina, Florianopolis, Nov. 1993
Universidade de São Paulo, Dec. 1993

44-45. "Physical Properties of Polyelectrolytes in Dilute Aqueous Solutions", American Cyanamid Corp., Stamford, Conn., Jan. 1994
La. State Uni. Baton Rouge, April 1994

46. "Questions Actuelles sur les Propriétés Physiques des Polyélectrolytes", Centre de Recherche Paul Pascal, Bordeaux, France, July 1994

47. "Applications de la Diffusion de la Lumière et de la Viscometrie a la Caracterization des Polymères", Elf Aquitaine Corp., Research Headquarters, Lacq, France, June 1994

48. "Unified Light Scattering and Viscosimetric Detection for Gel Phase Chromatography Characterization of Polymers", Union Carbide Co., Charlston W. Va., Oc.t 1994

49. "Physical Properties of Polymer Solutions", U. New Orleans, March 1995

50. "Polymer Characterization Using Light Scattering in Batch and with Size Exclusion Chromatography", General Electric Research Laboratories, Schenectady, N.Y., June 1995

51. "A Summary of Experimental Behavior of Dilute Polyelectrolyte Solutions, and Overview of Time-Resolved Light Scattering for Degradation and Structural Property Determinations of Polymers", Polym. Sci. & Eng. Dept., Uni. of Massachusetts, June 1995

52-55. "Procesos Cineticos nas Solucões de Polielectrolitos", Brasil, August 1995
Macromolecular Institute, Uni. Federal de Rio de Janeiro
Dpto. de Quimíca, Uni. Federal de Sta. Catarina
Dpto. de Quimíca, Uni. de São Paulo
Dpto. de Quimíca, Unicamp, Campinas

56. "Aspectos Físicos y Aplicados de los Polímeros: Las Fronteras entre la Física, Química, Biología e Ingeñería", IV día de la Física, Monterey Technological Institute, Mexico, October 1995

57. "Polymer Characterization Using Static Light Scattering in Batch Mode and Coupled to Size Exclusion Chromatography", Elf Atochem Corp., King of Prussia, Pa., Jan. 1996

58-59. "Polielectrolitos e Espalhamento da Luz", Brasil, May 1996
Physics Dept., Uni. Sao Paulo
Chem. Dept., Uni. Sao Paulo in Sao Carlos

60. "Characterization of polymer solutions using Size Exclusion Chromatography combined with Light Scattering, Refractometry and Viscometry" and "Real time monitoring of kinetic processes in polymer solution using time dependent static light scattering (TDSLS)", Eli Lilly Co., Feb. 1997

61-62. "Random Coils in Biology; an Oxymoron?",
Indiana University at Indianapolis (IUPUI), Feb. 1997
Tulane University Medical School, April 1997

63. "Aspectos Físicos y Aplicados de los Polímeros: Las Fronteras entre la Física, Química, Biología e Ingeñería", CINVESTAV/University of Yucatan, Merida, Mexico, June 1997

64. "Characterization of both equilibrium properties and kinetic processes in solutions of Biopolymers." Tufts University Biotechnology Center, Medford, Massachusetts, July 1997

65. "Characterizing and modeling non-equilibrium processes in polymer solutions", Union Carbide Corp. Charleston, W. Va., August 1997

66. "Absolute, Online Monitoring of Polymerization Reactions", Elf Atochem N.A., King of Prussia, Pa. April 1998

67. "Procesos cineticos nas soluções de polímeros" Inst. de Química, Uni. São Paulo, May 1998

68. "Espalhamento da luz, SEC e otros métodos de caracterização dos polímeros", 2 week course in Chem. and Physics depts. Uni. São Paulo. May 1998

69-70. "Equilibrium Characterization of Polymer Solutions", "Non-equilibrium processes in polymer solutions", Inst. of Biotechnology, U. of Trondheim, Norway, June 1998

71. "Equilibrium properties and kinetic processes in polyelectrolyte solutions", Uni. of Leiden, Holland, June 1998

72. "Mésures absolues en temps réel des réactions polymeriques", CERDATO, Elf Aquitaine, Sercuigny, France, July 1998

73. "Cinétique des processus dans les solutions polymeriques", Uni. de Pau, France, July 1998

74. "Real-time monitoring of absolute molar mass during polymerization reactions", Int'l. Specialty Products, Wayne, N.J., Jan. 1999

75. "Recent Developments in Time Dependent Static Light Scatttering", Elf Atochem Corp, King of Prussia, Pa., Feb. 1999

76. "Aspectos Físicos y Aplicados de los Polímeros: Las Fronteras entre la Física, Química, Biología e Ingeñería" Universidad de Costa Rica, San José, June 1999

77. "Characterization of Equilibrium Properties and Non-equilibrium Processes in Polymer Solutions", Tulane Uni. Polymer Short Course, Dec. 1999

78-79. " Suivi en temps réel des réactions polymeriques"
Univ. de Pau, France, June 2000
Groupement de Recherche à Lacq, Elf Aquitaine Corp., France, July 2000

80. "Caracterization en temps réel des processus cinétiques dans les solutions polymeriques", Univ. de Marseille, France, July 2000

81. " Propriétés des polymères fluorinés", Centre de Recherche Rhone-Alpes, Total Fina Corp, Lyon, France, Aug. 2000

82. "Exploratory realtime monitoring of polymerization reactions", Int'l. Specialty Products, Wayne, N.J., Sept. 2000

83. "Realtime Monitoring of Kinetic Processes in Polymer Solutions", Dow Chemical Co., Freeport, Texas, Nov. 2000

84. "Latest Results on Equilibrium and Non-equilibrium Polymer Characterization Using Light Scattering", Brookhaven Instruments Corp., Holtsville, NY, Dec. 2000

85-86. "Physics hands-off to Chemistry once again; light scattering and polymers", Tulane. U., 1/8/01
University of New Orleans, 4/4/01

87. "Realtime Monitoring of Kinetic Processes in Polymer Solutions", Polymer Science Symposia Series, 5/4/01, Exxon Mobil Polymer Center, Baytown, Texas

88-89. "Fundamentals of macromolecular characterization"
"Characterization of kinetic processes in polymer solutions"
Istanbul Technical University, Turkey, July 2001.

90. "Characterization of equilibrium and non-equilibrium properties of biopolymer solutions", Degussa/SKW AG R&D Center, Munich, Germany, July 2001.

91. "Online monitoring of polymerization reactions and other polymer related processes", Atofina Elf, LaPorte, Texas, Oct. 2001

92. “Macromolecules: A place where Physics, Chemistry, Biology and Engineering meet.”, Uni. Southeastern Louisiana, Hammond, April 2002

93. “Equilibrium and non-equilibrium characterization of polymer solutions”, Firmenich S.A., Geneva, Switzerland, June 2002

94. “Suivi en temps réel des réactions du type copolymerization de greffage”, Atofina research center, Lacq, France, June 2002

95. “Réactivité des pectines envers le calcium”, Degussa research center, Baupte, France, June 2002

96. “Suivi en temps réel des réactions polymeriques et des autres processus”, Macromolecular Institute, Univ. Marie et Pierre Curie, Jussieu, Paris, July 2002

97. "Absolute, automatic continuous online monitoring of polymerization reactions", Atofina Research center. King of Prussia, Pa. August 2002

98. "Automatic continuous online monitoring of polymerization reactions and associated equilibrium characterization", NASA Glenn Research Ctr., Cleveland, Ohio. August 2002

99. "Automated methods for equilibrium and non-equilibrium characterization of polymer solutions", Indiana University, Indianapolis, Oct. 2002

100. "High throughput screening using Simultaneous Multiple Sample Light Scattering", Eli Lilly Corp., Indianapolis, Oct. 2002

101. "The Past, Present and Future of Automatic, Continuous Online Monitoring of Polymerization Reactions (ACOMP)", Polymer Laboratories, Ltd., Church Stretton, England, Nov. 2002

102. "Automatic, Continuous Online Monitoring of Polymerization Reactions (ACOMP)", International Specialty Products, Calvert City, Ky., Dec. 2002

103. "A Zoological Primer for the Light Scatterer's Acronymous Jungle", Brookhaven Instruments Corp., 12/20/02, Holtsville, N.Y.

104. "High throughput screening of aggregation and other processes using Simultaneous Multiple Sample Light Scattering (SMSLS)", Eli Lilly Corp., Indianapolis, Oct. 2004

105. "Recent developments in macromolecular characterization", Total Inc. R&D, Laporte, Texas, Nov. 2004.

106. "New methods for macromolecular characterization", Arkema, Inc. Philadelphia, Pa. Jan. 2005

107. "Light Scattering for equilibrium and non-equilibrium characterization of polymer solutions", University of Wisconsin, Madison, June 2005

108-119: Oriental Lecture Tour in Korea and Japan, July/August 2005. Organized by Prof. Hyuk Yu (U. Wisconsin):
Hanyang University, Seoul, Korea. July 25, 2005
Korean Institute of Science and Technology, Seoul, Korea, July 26, 2005
LG Chem Research Center, Daejon, Korea. July 27, 2005
Korean Research Institute for Chemical Technology. July 27, 2005
Kumho Petrochemicals Research Center, Daejon, Korea, July 28, 2005
Korean Advanced Institute for Science and Technology, Daejon, Korea, July 28, 2005
Postech University, Pohang, Korea. July 29, 2005
Osaka University, Osaka, Japan, August 1, 2005
Toray Inc. Research Center, Kyoto, Japan, August 2, 2005
Kyoto University, Kyoto, Japan, August 3, 2005
Nagoya University, Nagoya, Japan, August 4, 2005
Tokyo Institute of Science and Technology, August 5, 2005

120. “Recently developed methods for characterization of polymer solutions”, Florida State University, Tallahassee, Fla., Oct. 2005

121-122. “ACOMP; Overview and Applications”
Unilever Ltd., Port Sunlight Research Center, Liverpool, England, Nov. 8, 2005
Polymer Laboratories conference on “Polymer Monitoring and Control”, Cologne, Germany, Nov. 10, 2005

123. “Recently developed methods for characterization of polymer solutions”, University of Massachusetts, Polym. Sci. & Eng. Dept., Nov. 18, 2005

124. “Recently developed methods for characterization of polymer solutions”, SUNY, Stony Brook, New York, Dec. 1, 2005

125. "High throughput screening of aggregation and other processes using Simultaneous Multiple Sample Light Scattering (SMSLS)", Boehringer-Ingelheim Pharmaceuticals, Danbury, Ct., May 11, 2006

126. “Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP); anoverview of scope and applications”, Chevron Phillips Chemical Co., Bartlesville, Oklahoma, June 22, 2006.

127. “Recent advances in macromolecular characterization”, Albemarle Corp., Baton Rouge, La., Sept. 19, 2006

128. “Neuester Fortschritt bei der Polymerencharakterisierung”, BASF Research Center, Ludwigshafen, Germany, 10/06

129. “Ultimos avances en la characterization de los polímeros”, Universidad del País Vasco, San Sebastian, Spain, 10/06

130-135 “Dernières avancés dan la caracterisation des macromolécules”,
Université de Nancy, Nancy, France, 10/06
Institut Charles Sadron, Strasbourg, France, 10/06
Université Louis Pasteur, École d’Ingenieurs, Cronenbourg, France, 10/06
Université de Lyon I and CNRS, Lyon, France, 10/06
Coatex S.A., Lyon, France, 10/06
Université de Bordeaux, France, 10/06

136. “Recently developed methods for characterization of macromolecular solutions”, Polymer Science & Eng., U. Akron, Ohio, 3/15/07

137. “Characterization of equilibrium properties and non-equilibrium processes in polyelectrolyte solutions”, Cabot Corp., Billerica, Mass., 4/6/07

138. “Aid from the Queen of Science for a Foot Soldier; A Physicist reaches out to Polymer Science”, Senior Mathematics Seminar, Tulane University, 10/24/07

139. “Light Scattering and other physical methods for equilibrium and non-equilibrium characterization of polymer solutions”, Physics Dept., Uni. New Orleans, 10/31/07

140-143. Métodos novos para a caracterização das solucões de polímeros
Universidade Federal do Río Grande do Sul, Porto Alegre, Brazil, 11/5/07
Universidade Federal de Sta. Catarina, Florianopolis, Brazil, 11/6/07

Universidade Federal de Paraná, Curitiba, Brazil, 11/7/07
Congresso Brasileiro/Argentino de Bionanotecnología, Itajai, Brazil, 11/9/07

144. Recent Advances in ACOMP
Brookhaven Instruments Corp, Holtsville, NY, 12/26/07

145. "Innovative Methods for Characterization and Monitoring of Polymeric and Colloidal Processes in Solution", Firmenich North America, Princeton, NJ, 10/08

146. "The Tulane Center for Polymer Reaction Monitoring and Characterization", Nalco, Inc., Garyville, La., 10/08

147. "Advances in Polymer Characterization", Plenary Speaker, Shimadzu Symposium on Polymer Characterization, Nov. 2008, Gonzales, La.

148-149. « Quelques avancées récentes dans le suivi analytique des réactions de copolymérisation », May/June 2009
Université de Bordeaux
Rhodia, S.A., Paris

150. « Monitoring the stability of protein formulations », Biogen-Idec Webinar, San Diego, CA ; Cambridge, MA, 6/30/09.

151. "Characterization of equilibrium and non-equilibrium properties and processes of natural products", Rhodia Corp., Bristol, PA, 9/09

152. "Recent advances in online monitoring of polymerization reactions", Queens University, Kingston, Ontario, Canada, 2/10.

153. "Overview of equilibrium and non-equilibrium characterization of polymer solutions", School of Polymer Science & Engineering, Uni. Southern Mississippi, Hattiesburg, MS, 3/10.

154. "Monitoring protein aggregation in realtime in multiple independent formulations: High throughput screening using Simultaneous Multiple Sample Light Scattering (SMSLS)" Biogen-Idec, in San Diego, CA with web-broadcast to Cambridge, MA, 9/7/10

155. "Neuester Fortschritt bei der Polymerisationsreaktion Überwachung", Karlsruhe Inst. of Technology, Germany. Oct. 14, 2010

156. "Recent advances in polymer characterization", Polymer Standard Services, Mainz, Germany, June 2011

157. "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)", Sabic Inc., Albany, NY, May 30, 2012

158. “Polymerization reaction and process monitoring and control”, BASF, Ludwigshafen, Germany, June 14, 2012

159. “Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)”, Aristotle University, Thessalonika, Greece, June 18, 2012

160. “Non-equilibrium processes in macromolecular solutions”, Istanbul Technical University, Turkey, Sept. 2012

161. “Disruptive Technologies and Impacts on U.S. Polymer Manufacturing”, U.S. Dept. of Energy, Advanced Manufacturing Office, Oct. 9, 2012

162. “Recent results on stability of therapeutic proteins”, Biogen, Cambridge, MA, Aug. 2013

163. “Recent Advances in ACOMP”, Lubrizol R&D Center, Cleveland, Ohio, Oct. 2013

164-167. “Recent Advances in polymerization reaction monitoring”. S. Korea. Dec. 2-6, 2013
i) LG Chem
ii) Samsung
iii) SK Chemicals
iv) Korean Advanced Studies Institute

168. “Monitoring protein aggregation in realtime in multiple independent formulations”, Biogen Idec, Cambridge Mass, Feb. 2014.

169-172. “Des avancées récentes dans la monitorisation des reactions macromoléculaires ». June 10-15, 2014
i) Laboratory of the Future, Bordeaux, France
ii) Solvay R&D Center, Lyon, France
iii) Uni. Lyon, France
iv) U. Nancy, France

173. "Recent developments in ACOMP technology », BASF, Ludwigshafen, Germany June 17, 2014

174. “Fundamental and Industrial advances in monitoring and controlling polymeric reactions and processes”, Uzbek Institute for Industrial Chemistry, Tashkent March 30,2015

175-178. “Recent advances in Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP) and related technology”
i) Solvay LLC, Alpharetta, GA, July 9, 2015
ii) Exxon Mobil, Baytown, TX, July 28. 2015
iii) Brewer Science, Rolla, MO, Sept. 3, 2015
iv) Dow Chemical, Freeport, TX, Sept. 9, 2015
v) Bridgestone Corp, Akron, OH, Nov. 13, 2015

Selected Contributed Papers (only some listed)

McFaul, Colin A.; Drenski, Michael F.; Alb, Alina M.; Reed, Wayne F. "During synthesis monitoring of polymer lower critical solution temperature" 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010.

Li, Zheng; Serelis, Algirdas K.; Reed, Wayne F.; Alb, Alina M. "Toward amphiphilic diblock copolymers by RAFT, kinetic study on pH responsive polymers." 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010

Li, Zheng; Serelis, Algirdas K.; Reed, Wayne F.; Alb, Alina M. "Deviations from livingness during gradient copolymerization by RAFT", 239th ACS National Meeting, San Francisco, CA, March 21-25, 2010

Alb, Alina M.; Ness, Jason S.; Reed, Wayne F. "Online monitoring of nitroxide mediated polymerization in emulsion.", 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, 2010

Alina M. Alb, Wayne F. Reed, "Online monitoring of block and gradient copolymerization by RAFT", American Chemical Society, Spring Meeting, New Orleans, April 2008.

Tomasz Kreft, Gemma González García, Alina M. Alb, José Carlos de la Cal,José M. Asúa, Wayne F. Reed, "Predictive control and online monitoring of average molar mass and composition distributions in free radical polymerization", American Chemical Society, Spring Meeting, New Orleans, April 2008.

Raber Inoubli, Daniel Elizarrarás, Scott Cooper, José Sosa, Alina M. Alb, Michael F. Drenski, Wayne F. Reed "Online Monitoring of PB Chain Scission and Crosslinking in Solution by Free Radical Initiators." American Chemical Society, Spring Meeting, New Orleans, April 2008.

Alina M. Alb, Stephan Moyses, Jason Ness, Christopher A. Bertelo, Wayne F. Reed
Online monitoring of free radical polymerization in emulsions. American Chemical Society, Spring Meeting, New Orleans, April 2008.

A.M. Alb, M.F. Drenski, W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization reactions", 29th Australasian Polymer Symposium, Hobart, Tasmania, Australia, 2/11-2/15/07

Saunders, Greg; Willoughby, Ian; O'Donohue, Stephen; McConville, J. A.; Reed, Wayne F. "On-line monitoring of key copolymerization reaction parameters." 232nd ACS National Meeting, San Francisco, CA, Sept. 10-14, 2006

A. Head, A. M. Alb, P. Enohnyaket, M.F. Drenski, R. Shunmugam, G.N. Tew, W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP): Focus on copolymerization", accepted 3/06 for IUPAC Macro 41st World Polymer Congress, Rio de Janeiro, Brazil, July 2006

A.M. Alb, A. Paril, H. Catalgil Giz, A. Giz, W.F. Reed “Novel methods for characterizing polyelectrolyte synthesis and solution properties” accepted 3/06 for IUPAC Macro 41st World Polymer Congress, Rio de Janeiro, Brazil, July 2006

A.M. Alb, P. Enohnyaket, J.F. Craymer, T. Eren, E.B. Coughlin, W.F. Reed, “Online monitoring of kinetics and mechanisms during Ring Opening Metathesis Polymerization”, accepted 3/06 for IUPAC Macro 41st World Polymer Congress, Rio de Janeiro, Brazil, July 2006

J. McConville, S. O'Donahue, W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization reactions", Pittsburgh Conference, Orlando, Fla., Feb 27-March 4, 2005

E. Mignard, O. Guerret, K. Matyjaszewski, J.-F. Lutz, W.F. Reed
"Automatic Continuous Online Monitoring of Controlled Radical Polymerization Reactions", IUPAC Macro, World Polymer Congress, July 4-9, 2004, Paris, France

E. Mignard, M.F. Drenski, A.M. Alb, W.F. Reed, "In-situ vs. Online Monitoring of Polymerization Reactions", ISPAC, International Symposium on Polymer Characterization and Analysis, Heidelberg, Germany, June 7-9, 2004

E. Mignard, M.F. Drenski, A.M. Alb, W.F. Reed, "Simultaneous In-situ Monitoring of Parallel Polymerization Reactions", IUPAC Macro, World Polymer Congress, July 4-9, 2004, Paris, France

G.A. Sorci and W.F. Reed, "A detailed study of ion specific effects on hyaluronic acid using light scattering and viscosity", Biophysical Society Annual Meeting, Baltimore, February 2003

E.A. Sander, E.A. Nauman, A.M. Alb, W.F. Reed, K.C. Dee, "Solvent effects on PLGA Foam Properties", Biomedical Engineering Society, Nashville, 10/2003

E. Mignard, O. Guerret, D. Bertin, W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP) Adapted to High Viscosity Reactions", American Chemical Society Annual meeting, March 2003, New Orleans

M.F. Drenski, W.F. Reed, "Simultaneous Multiple Sample Light Scattering (SMSLS)", American Chemical Society Annual meeting, March 2003, New Orleans

J.L. Brousseau, H. Giz, and W.F. Reed "Continuous, Absolute, Online Monitoring of Polymerization Reactions", 5/00, Electrochemical Society Int'l. Mtg., Toronto, Canada

W.Reed, L. Guterman, P. Tundo and J. Fendler "Kinetics and Mechanisms of Surfactant Vesicle Polymerization" American Chemical Society Mtg., Seattle, Wash. 1984

W.F. Reed, "Shape Anisotropy as the Origin of Magnetically Induced Dichroism in Ferrofluids," International Sympos. on Colloid and Surface Science", Potsdam, NY, May 1985

H. Nguyen, J. Phillips, V.John and W. Reed "Interfacial Effects on Clathrate Hydrate Formation in Protein Containing Reversed Micellar Solutions", Am. Inst. of Chem. Eng. San Francisco, Nov. 1989

C.E. Reed, L. Xiao and W.F. Reed, "The Effects of pH on Hyaluronate as Observed by Light Scattering," Biophysical Society Meeting, Cincinnati, Ohio, Feb. 12-16, 1989

C.E. Reed and W.F. Reed, "Monte Carlo Test of Odijk's Persistence Length Theory," APS Meeting, St. Louis, Mo., March 1989,

W.F. Reed, G. Medjhadi, J. François and M. Raviso, "Light Scattering Properties of Polyelectrolytes with Varying Degrees of Ionization in Salt Free and Low Ionic Strength Aqueous Solutions," Gordon Conference on Macromolecules and Polyelectrolytes, , Oxnard, Cal., Feb. 1990

S. Ghosh, Xiao Li, C.E. Reed and W.F. Reed, "Effect of Salt on Light Scattering Behavior of Hyaluronate," Gordon Conference on Macromolecules and Polyelectrolytes, Oxnard, Cal., Feb. 1990,

C.E. Reed and W.F. Reed "Time Dependent Light Scattering from Random Coils Undergoing Random Scission", APS meeting, March 1990

W.F. Reed, C.E. Reed and L.D. Byers "Time Dependent Light Scattering Assay for Hyaluronate" Gordon Conf. on Enzymes, New Hampshire, July 1991

V. John, H. Nguyen and W. Reed "Characteristics of Protein-Containing Reversed Micelles subjected to Clathrate Hydrate Formation Conditions" International Symposium on Colloid and Surface Science Gainesville, Fla., July 1990

J. François, G. Medjhadi and W. Reed "Solution Behavior of Variably Ionized Polyelectrolytes" Int. Symp. Col. and Surf. Sci., July 1990

S. Ghosh, X. Li, R. Peitzsch, C.E. Reed, M. Burt and W.F. Reed, "Polyelectrolyte Properties of Proteoglycans", 35th Ann. Biophysical Soc. Mtg., San Francisco, Feb. 1991

W. Reed, Gordon Conference on Dynamics of Polyelectrolytes and Macromolecular Solutions, Oxnard Cal.. Four presentations on polyelectrolytes and micelles, Feb. 1992

C.E. Reed and W.F. Reed, "Monte Carlo Study of Light Scattering by Polyelectrolytes" March 1992 American Physical Society, Indianapolis, Ia.

S. Ghosh, I. Kobal, D. Zannette and W. Reed, "Conformation Contraction and Hydrolysis of Hyaluronate in NaOH Solutions ", Biophysical Society, Washington D.C., Feb. 1993

W.F. Reed "Description of Kinetic Processes and Structural Properties of Biopolymers Using Time-Dependent Light Scattering" Biophysical Society, New Orleans, Feb. 1994

C.E. Reed and W.F. Reed "Monte Carlo studies of Conformations of Polyelectrolytes" Biophysical Society, New Orleans, Feb. 1994

C.E. Reed and W.F. Reed "Power Law Decay of Persistence of Chain Direction in Simulated Polymers with Large Excluded Volume", American Physical Society, Pittsburgh, March 1994

R. Strelitzki and W.F. Reed " Automated Determination of Polymer Solutions", Am. Chem. Soc., New Orleans, Aug. 1999

A. Parker, R. Michel, F. Vigouroux and W. F. Reed "Dissolution Kinetics of Polymer Powders" Am. Chem. Soc., New Orleans, Aug. 1999

F. Florenzano, R. Strelitzki, J.L. Brousseau and W. F. Reed "Absolute, Online Monitoring of Polymerization Reactions" Am. Chem. Soc., New Orleans, Aug. 1999

R. Schimanowski, R. Strelitzki, D. Mullin, A.H. Sooklal And W.F. Reed, "Heterogeneous Time Dependent Static Light Scattering" Am. Chem. Soc., New Orleans, Aug. 1999

Approximately 20 more, not listed here for brevity.

Visiting Faculty Collaborators

Prof. Nurettin Sahiner, U. Chanakale, Turkey, April 2017-

Dr. Emmanuel Mignard, University of Bordeaux, Nov.-Dec. 2012

Dr. Frank Bentrem, Computational Physicist, Naval Research Laboratory, Stennis Space Center, MS, 10/08-5/09

Dr. Nodirali Normakhamatov, Uzbek Academy of Sciences, Tashkent, Uzbekistan, 1/09-4/09

Dr. Fabio H. Florenzano, (Dean of Faculty, Minas Geráis, Brazil), 11/08-1/09

Dr. Rilton Alves de Freitas (Assoc. Prof. Pharmacy, Uni. de Itajai, Brazil), 2/08-9/08

Dr. Emmanuel Beaudoin (Asst. Prof. Chemistry, U. Marseille, France), 11-12/03

Dr. Fabio H. Florenzano (Asst. Prof. Biochem., Uni. Minas Gerais, Brazil), 7/02-8/03

Dr. Mario J. Politi (Prof. of Chemistry, Uni. Sao Paulo, Brazil), 1/00-4/00

Dr. Bruno Grassl (Assoc. Professor of Chemistry, U. of Pau, France), 10/00-12/00

Dr. Huceste Giz, (Assoc. Professor of Chemistry, Istanbul Technical University), 8/99-8/00, on sabbatical leave. 8/01-11/01, on NSF/Turkey collaborative visit.

Dr. Ahmet Giz (Assoc. Professor of Physics, Istanbul Technical University), 8/99-8/00, on sabbatical leave. 8/01-11/01, on Istanbul Tech. Uni. sponsored visit

Dr. Joana Lea Ganter (Assoc. Professor of Biochemistry, Uni. Federal de Parana, Curitiba, Brazil), 9/99-1/13/01 sabbatical leave

Dr. Aysegul Oncul-Koc (Assoc. Prof., Bhadshasir Uni., Istanbul, Turkey), 8/02-12/02, NSF supported sabbatical leave

Dr. Mustapha Benmouna (Professor of Physics, Tlemcen, Algeria), Visiting Fulbright Commission Scholar (8/94-5/95)

Dr. Ivan Kobal, Head, Division of Physical and Environmental Chemistry (Inst. Josef Stefan, Slovenia), 1/92-5/92

Dr. Michel Rawiso, Chargé de Recherche, Inst. Charles Sadron, 2/92-5/93

Dr. Jeanne Francois, Director, Laboratory for Research on Polymeric Materials, Uni. of Pau, France, 1/91-3/91

Postdoctoral Supervision

Dr. Terry McAfee (Ph.D. NC State) 1/16-

Dr. Aide Wu (Ph.D. NJ Inst. Tech.) 6/15-

Dr. Reza Farasat (Ph.D. U. Alabama), 3/15-

Dr. Carlos Alberto Castor (Ph.D UFRJ, Río de Janeiro, Brazil), 1/15-10/1/15

Dr. Nazila Soleimani (Ph.D Southampton, UK), 11/14-11/15

Dr. Marie DuFrechou, (Ph.D. Montpellier) , U. Bordeaux, France, 6/13-9/13

Dr. Julien Rigolini, (Ph.D. U. Pau) , University of Bordeaux, France, Nov-Dec. 2012

Dr. Aurelie Boyer, Rhodia Corp., Paris, France. July-Sept, 2011

Dr. Daniel Elizarraras (Ph.D., Coahuila, Mexico), Postdoctoral Associate (Total Inc.), 9/07-9/08

Dr. Raber Inoubli (Ph.D., U. Pau, France), Postdoctoral Associate (Total Inc.), 8/06-4/07

Dr. Alina M. Alb (Ph.D., Tulane), Postdoctoral Associate, 8/04-6/06, Research Assistant Professor, 7/06-

Dr. Emmanuel Mignard (Ph.D., U. Pau, France), Postdoctoral Associate (Atofina Elf). 9/01- 7/03

Dr. Jean-Luc Brousseau (Ph.D. U. Miami/Trois Rivieres, Canada), Postdoctoral Associate (Atofina Elf) 2/1/99-8/00

Dr. Roland Strelitzki, (Ph.D. U. Leeds, England), Postdoctoral Associate (NSF), 10/97-6/99

Dr. Stephan Moyses, (Ph.D. U. York, England), Postdoctoral Associate (Atofina Elf), 11/97-11/99

Dr. Corinne Vinches, (Ph.D. Institut Paul Pascal, Bordeaux, France), Postdoctoral Associate (Atofina Elf), 3/94-5/96

Dr. David Norwood, (Ph.D. U. Iowa), Postdoctoral Associate (NSF), 9/94-8/97

Dr. Christopher Reed, (Ph.D. U. California, Irvine) Postdoctoral Associate (NSF), 7/87-11/95

Supervisor for Staff Members

Dr. Curtis Jarand, Staff Research Scientist, 6/2014-

Mr. Thomas Zekoski, Research Technician, 5/2016-

Mr. Frederick Twigg, Research Technician, 4/14-6/15

Director for Completed Ph.D Students

Li Xiao, "Light Scattering Properties of Glycosaminoglycans", Ph.D 9/91

Robert M. Peitzsch, "Light Scattering and Osmotic Pressure Studies of Glycosaminoglycans", Ph.D 10/91

Snehashish Ghosh, Graduate Research Assistant, "Polyelectrolyte Conformation, Interactions and Hydrodynanmics" Ph.D 2/94.

Edson Minatti "Interactions of Micelles and Polymers", Ph.D. completed 6/97 (granted by Uni. Federal de Sta. Catarina, Brazil), W. Reed and D. Zanette co-directors

Fabio H. Florenzano "Online Determination of Absolute Molecular Weights during Polymerization Reactions", Ph.D. completed 6/98 (granted by Uni. of Sao Paulo), W. Reed and M.J. Politi co-directors

Ricardo Cunha Michel, "Dissolution, Aggregation and Degradation Processes in Water Soluble Polymers", Ph.D. completed 8/99 (granted by Uni. Federal de Rio de Janeiro, Brazil), W. Reed and C. Andrade co-directors

Gina Aline Sorci, “A technique for studying polymer interactions with concentration gradients using light scattering and viscometry”, Ph.D. completed 7/2002

Alina Monica Alb, "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)- Progress in Characterization of Polymers and Reaction Mechanisms", Ph.D. completed 6/2004

Pascal Enohnyaket, “Determination of molecular weight and other characteristics of co- and terpolymers using Automatic Continuous Online Monitoring of Polymerization reactions”, Ph.D. completed 8/2007

Tomasz Kreft, “Predictive control of free radical polymerization reactions including copolymeric polyelectrolytes”, Ph.D. completed 3/2009.

Zheng Li, “Study of stimuli-sensitive copolymers; synthesis and characterization”
Ph.D. completed 8/2012

Colin A. McFaul, “Fundamental interactions driving the coil-to-globule transition and LCST behavior of poly(N-isopropylacrylamide) in water”. Ph.D. Completed 5/2015

Zifu Zhu, “ Light scattering study of polymer-colloid systems; Surfactant behavior and interaction with polymers and small molecules”, Ph.D. Completed 6/2015

Mr. Claiton Brusamarello, Brazilian Chemical Engineering Graduate Student, Completed 6/2015

Director for Completed M.S. Students (with research thesis)

Mr. Michael F. Drenski, "Development of Simultaneous Multiple Sample Light Scattering", (Tulane University, 2005)

Mr. Aaron Head, "Use of full spectrum UV/visible spectroscopy to monitor copolymerization reactions", (Tulane University, 2005)

Robert Peitzsch, Thesis on optical, mechanical, computer and theoretical aspects in the construction of a diversified laser light scattering apparatus. (Tulane University, 1986)

Gerri Beth Miller, M.S. 2/92, "Effects of Ionic Strength and Molecular Weight on Polyelectrolyte Second Virial Coefficients"

Ruth Schimanowski, M.S. (Diplomarbeit), 3/99, "Heterogeneous Time Dependent Static Light Scattering. In conjunction with freie Universitaet Berlin, Germany.

Supervision of Graduate Students

Ms. Brooke Peaden, Tulane Physics Graduate Student, 8/13-

Mr. Claiton Brusamarello, Brazilian Chemical Engineering Graduate Student, 4/12-4/13

Ms. Gisele Peres, Brazilian Chemistry Graduate Student, 3/12-2/13

Mr. Colin McFaul, Tulane Physics Graduate Student, 6/07-5/15, Ph.D 5/2015

Mr. Zheng Li, Tulane Physics Graduate Student, 9/07-9/12, Ph.D 9/2012

Mr. Zifu, Zhu, Tulane Physics Graduate Student, 9/08-6/15, Ph.D 6/15

Mr. Tomasz Kreft, Tulane Physics Graduate Student, 10/04-3/2009, Ph.D 3/2009

Ms. Gemma Garcia Gonzales, 2/07-8/07, Visiting Research Assistant, Uni. of the Basque Country, San Sebastian, Spain. Ph.D. 3/2008.

Mr. Ahmet Paril, 12/03-8/05, Visiting Research Assistant, Istanbul Technical Uni.

Mr. Thierry LeBlanc, Visiting Research Assistant, 4/2003-9/2003, Uni. Marseille, France

Ms. Florence Chauvin, 1/2001-4/2001, Ph.D., Uni. Marseille, France, 2002

Mr. Aaron Head, Tulane Physcis Graduate student, 9/03-6/06

Mr. Michael Drenski, Tulane Physics Graduate Student, 9/01-6/06

Mr. Pascal Enohnyaket, Tulane Physics Graduate Student, 9/02-8/07, Ph.D 8/07

Ms. Alina Monica Alb, Tulane Physics Graduate Student, 8/99-6/04, Ph.D 6/04

Ms. Gina Aline Sorci, Tulane Physics Graduate Student, 8/99-7/02, Ph.D 7/02

Ms. Azida Hosein-Sooklal, Tulane Physics Graduate Student, 1/99-6/99

Mr. Edson Minatti, 12/95-3/97, Graduate Research Assistant, Brazilian 'Sandwich' program, from Uni. Federal de Sta. Catarina

Mr. Fabio Herbst Florenzano, Graduate Research Assistant, Brazilian 'Sandwich' program, 2/97-6/98, from Universidade de São Paulo.

Mr. Ricardo Michel, 9/97-12/98, Graduate Research Assistant, Brazilian 'Sandwich' program, from Uni. Federal de Río de Janeiro

Mr. Peng Zhang, Tulane Graduate Reserach Assistant, 6/92-6/94

Mr. Chang Yoo, Undergrad. Research Asst./ Graduate BOR Fellow, 1986-88
Weimin Peng, Grad. student, 9/93-6/95

Ms. Isabelle Morfin, Grad. student, 1/94-6/94

Mr. Alain Depetris (M.S. Marseille, France) Visiting Research Assistant 8/15/87 - 11/30/87

Mr. Eloi da Silva Feitosa (M.S., Sao Paulo, Brasil) Visiting Research Asst. 9/15/87-7/15/88, Brazilian Sandwich Program

Undergraduate Projects/Theses directed

Michael Babcock, Spring 1985, senior Chemistry major. Guidance for senior thesis "Studies of Photopolymerization in Heterogeneous Surfactant Vesicles." (Clarkson)

Steven Reczek, Spring 1985, junior year Physics major. Advanced Physics laboratory preceptor for "Construction of a Digital Astrophotometer." (Clarkson University)

Saeed Hamid, Tulane undergrad. project on light scattering experiments with phoshpofructokinase, 1986-87

Mark Rubin, senior honors project, 1986, “Hemodynamic instrumentation and measurements.” With Cardiovascular Surgery Dept of Tulane Medical School.

Helene Dickson, 1986/87, Biochem. major. Honors thesis "Light Scattering characterization of Proteoglycans." Ms. Dickson won the Sigma Xi Gold Medal Award for this work.

Chang Yoo, 1986/87, senior Physics major. Project on "Development of Laser Spectroscopic Instrumentation and Programming."

Marc Kolodner, 1989/90, senior Physics Honors thesis, "Polarimeter Imperfections."

Martha Burt, 1990-1991, Newcomb College Senior Honor's Thesis, "Physical Properties of Glycosaminoglycan/multivalent Cation Complexes" Ms. Burt won the Phi Beta Kappa award for experimental science for this work. Co-author on pub. #25

Ms. Tommie Wilson, 9/91-6/95, Newcomb College Dean's honor scholar, employed as a research assistant in the laboratory. Co-author on publication #31.

Mr. Philip Benua, 9/93-6/94, A&S Physics major, "Experimental Polymer Physics"
Jennifer Canfield, Newcomb College Physic Major, 1/95-8/95, NSF REU

Beth Easterly, Electrical Engineering Undergraduate, 10/95-6/97, "Development of optical instrumentation for molecular diffusion studies"

Jennifer Chen, Undergraduate Physics Major, 1/97-6/97, “Biopolymer depolymerization characterization by light scattering”

Michael Joyce, Dean’s Honor Scholar, Coca Cola Undergraduate Fellowship, 5/97-6/98, “Physics of Interacting Polyampholytes”

Erica Bayly, Newcomb Dean's Honor Scholar, Senior Honor's thesis, "Experimental Macromolecular Biophysics", 9/98-6/00, Co-author on publication #62.

Mr. Jed Petersen, Tulane Dean's Honor Scholar, Senior Honor's thesis, 8/00-5/01

Ms. Vanessa Fleming, Newcomb Physics major, "Simultaneous use of near Infra-Red and Automatic, Continuous, Online Monitoring of Polymerization Reactions", 9/02-6/04, Co-author on publication #93.

Ms. Selma Hokenek, Biomedical Engineering Honor’s thesis (co-directed with Prof. Alina M. Alb), “Characterization of nanoparticles by light scattering and other methods”, 2006-07

Mr. Patrick Whitworth, Physics/Math Honor’s thesis (co-directed with Prof. Alina M. Alb), “Predictive control of composition gradients in living copolymerization reations”, 2007-08

Ms. Evelyn Melo, First group of Brazilian students in the program ‘Science without Borders’ (Ciencia sem Fronteiras). 4/12-1/13

Ms. Lindsey Nelson, Chemical Engineering NSF/EPSCOR Research Experience for Undergraduates, “Protein aggregation kinetics”, Summer 2015

Ms. Christina Cole, Physics NSF/EPSCOR academic year Research Assistant, "Mathematical approaches to kinetic superposability of aggregating systems"

Mr. Thomas Zekoski, Chemical Engineering research "Quantitative effects of oxygen quenching on polymerization reactions", 8/2015-

Ms. Emma Johnson, Math/Chemistry major, Co-director, Sr. Honors thesis "Life Cycle and environmental model for the polyethylene industry", 2015-2016

Membership on dissertation committees

Lee Guterman, (Clarkson University, Ph.D., 1985)
Robert Carter, Tulane, Physics Department, Ph.D. 1989
Guy Norton, Tulane, Physics Department, Ph.D 1990
Timothy Vanoy, Tulane, Chemistry Department, Ph.D. 1989
David Probst, Tulane, Electrical Engineering, Ph.D 1990
Jeffrey Sipior, Tulane Chemistry Department, Ph.D 1991
Luciana da Cinquini Dantas, CERMAV, Grenoble, France, Ph.D 1992
Ali Garavi, Tulane, Chemistry Dept., Ph.D 1993
Amber Sharma, Chemical Engineering, Ph.D 1997
Mark McGowan, Chem. Eng., Ph.D. 1998
Neil Andrew Bascos, Biochemsitry, Ph.D. 2008
Ryan Schexnayder, Chemical Engineering, Ph.D. 2008
Qingkai Meng, Chemical Engineering, Ph.D. 2010
Yejia Li, Chemistry, Ph.D., 2011
Miguel Garcia, Chemical Engineering
Elan Stern, Physics, Ph.D., 2012
Yi Wang, Chemistry, Ph.D. 2013
Peixi, Zhu, Chemical Eng., Ph.D. 2014
Yufei Duan, Chemical Engineering, 2014
Brian Riggs, Physics, Ph.D., 2015
Boyu Zhang, Chemistry Ph.D., 2015
Ravinder Elupula, Ph.D., Chemistry, 2016
Hong Zhang, Ph.D, Chemistry, 2017

PolyRMC staff supervised

Research Asst. Prof. Alina M. Alb, 8/2006-3/2015
Staff Research Scientist, Dr. Curtis Jarand, 7/2013-
Sr. Instrumentation Expert, Mr. Michael Drenski, 8/2006-
Research Technician, Mr. Frederick Twigg, 5/14-6/15

Courses taught

Introductory Physics I-II	Physics 121/122/131/132
Modern Physics I-II	Physics 235, 236
Electromagnetic Theory	Physics 363
Classical Mechanics	Physics 374
Optics	Physics 465

Molecular Biophysics & Polymer Physics, Physics 621/321, Chem Eng 621
Advanced Special Problems (Biopolymers, Adv. Light Scat. Tech., Polymer Physics, Protein biophysics, etc.) Physics731-732
(Introductory Astronomy, taught at Clarkson Uni.)

Summer Internships and Senior Design Experiences led

Mr. Ryan Swinney, Engineering Physics, summer 2013, Sr. Design 2013-14
Mr. Nicholas Chvany, Engineering Physics, summer 2013, Sr. Design 2013-14
Mr. Varun Arul, summer 2013 (U. Fla, Chemical Eng)
Ms. Olivia Carnes, Engineering Physics Sr. Design, PEP, 2012-2013
Ms. Olivia Carnes, Engineering Physics summer intern, 2012
Mr. Artem Isikov, Engineering Physics summer intern, 2011
Engineering Physics Sr. Design Fall 2011/Spring 2011
Mr. Zachary Ulrich, Physics summer intern, 2011
Mr. Bryan Quigley, Physics summer intern, 2011
Ms. Claire Stortstrom, Engineering Physics Sr. Design Fall 2011/Spring 2011

Professional Workshop Series Led

Twice annual training course in Advanced Polymer Characterization, starting in Dec. 2010. Attracts industrial scientists and engineers from around the nation, and some internationally.

College and University Service

Secretary of the School of Science & Engineering, 2006-
Chairman, SSE Committee on Promotion of Professors of Practice, 2014-
SSE Committee on Committees, 2006-
Tulane Engineering Forum Committee, 2008-2009, 2015-2016
Secretary of Liberal Arts and Sciences, 2005-2006
Faculty Fellow, Wall Residential College, Tulane, 8/2008-
Founding Director, PolyRMC, School of Sci. & Eng., 8/07-
Associate Director (TIMES), Tulane Institute for Macromolecular Eng. & Science 2006-2011
Student Appeals Judiciary Committee 2004-2005
Vice Pres. Tech Transfer & Business Dev. Search Com. 2003-2004
Junior Year Abroad Committee 2003-2004
Tulane Institute for Macromolecular Engineering and Science (TIMES),
Processing and Characterization group leader 2001-
Materials Engineering and Science Committee 2002-2005
Latin American Studies Executive Committee 9/00-03
Brazilian Studies Council 5/00-
Newcomb Honors Program Committe 1987-2006
Newcomb Freshman Advisor 1986-2000
Newcomb Honor Board 1990-2006
Committee on Committees 1996-99
Graduate Council 1993-96
Biotechnology Steering Committee 1987-89
Provost's Instrumentation Committee 1987-92

LAS Grievance Committee	1991-94
Newcomb Center for Research on Women	1988-89
Provost's Committee on Materials Science	1991-92
Graduate School Senator	1991-94
Liberal Arts and Science Senator	1995
Senate Committee on Student Affairs	1991-94
Faculty Judiciary Committee	1996-2006
LAS Dean Search Committee	1997
LAS Planning Committee	1998-1999
Engineering Dean Search Com.	1998-2000
Health Professions Committee	2017-

Departmental Service

Undergraduate Physics Major Advisor, 1990-, ~60 advisees/year
Chairman of the Department of Physics, 7/1997-6/2000
Physics Dept. Executive Committee, 2002-
Physics Department Undergraduate Committee, 1986Physics
Department Graduate Committee, 1986-
Physics Search Committee, 1988-1990
Organizer for Comprehensive Examinations, 1987-1992
Chairman, 1997-2000
Associate Chairman, 1990-1992

Industrial Consultancy

Cytec Industries, Lyphomed Corp., Elf Aquitaine (France), Systems Bioindustries (France), U.S. Dept. of Agriculture, United Technologies, Union Carbide, Petrobras (Brasil), Elf Atochem (US), International Specialty Products, Firmenich, Degussa, Dow, Exxon, Arkema Inc., Total Inc., Chevron Phillips Chemical Co., Varian, Inc., Cabot Corp.

Professional Service

Organizer, 26th International Symposium on Polymer Analysis and Characterization (ISPAC), June 9-12, 2013, New Orleans.

Member, Board of Directors, APTEC (Louisiana Applied Polymer Technology Extension Consortium), 8/2006-
Chairman for the Americas, Governing Board Member (6/2008-) International Symposium on Polymer Analysis and Characterization
Referee for: National Science Foundation, National Institutes of Health, Petroleum Research Foundation, JACS, Macromolecules, Biophysical Journal, J. Phys. Chem., J. Amer. Chem. Soc., Biopolymers, J. Colloid and Interface Sci., J. Chem. Phys., Intl. J. Macromolec. Charac., Langmuir, etc.
Symposium Organizer, IUPAC World Polymer Congress, Paris, 2004
Member, Board of Directors, International Symposia on Polyelectrolytes, 1995-
Member, Board of Directors and Tulane representative to the Pan-American Association of Physics, 1995-
Member, International Advisory Committee, Prague Meetings on Macromolecules, 1999-

Invited Panelist for National Science Foundation Proposal Review and Selection

Refereed and Invited Publications (Excluding abstracts of conferences unless full, refereed paper)

1. W.F. Reed, M. Politi, J. Fendler, "Rotational Diffusion of Rose Bengal in Aqueous Micelles: Evidence for Extensive Exposure of the Hydrocarbon Chains, "Journal of the American Chemical Society, 103, 1981

2. W.F. Reed, L. Guterman, P. Tundo, J.H. Fendler, "Polymerized Surfactant Vesicles: Kinetics and Mechanisms of Photo-polymerization, "Journal of the American Chemical Society, 106, 1897-1907, 1984.

3. F. Nome, W.F. Reed, M.J. Politi, J.H. Fendler, "Cleft Formation Upon Polymerization of Surfactant Vesicles, "Journal of the American Chemical Society, 106, 8086-8093, 1984.

4. W.F. Reed, D. Lasic, H. Hauser, J.H. Fendler, "Effects of Photo-polymerization on Surfactant Vesicle Surface Morphology," Macromolecules, 18, 2005-2012, 1985.

5. J. Serrano, S. Mucino, W.F. Reed, F. Nome et al., "Determination of Degrees of Polymerization in Styrene-Containing Surfactant Vesicles," Macromolecules, 18, 1999-2005, 1985.

6. W.F. Reed, "A Computer Simulation of Surfactant Vesicle Photo-polymerization," Macromolecules, 18, 2402-2409, 1985.

7. W.F. Reed, L. Guterman, "Polymerized Surfactant Vesicles: Characterization, Mechanisms and Utilization," Invited review article, Journal of Radiation Curing, Vol. 13, No. 2, 17-30, 1986.

8. W.F. Reed, J.H. Fendler, "Shape Anisotropy as the Origin of Magnetically Induced Dichroism in Ferrofluids: Depolarized Dynamic Light Scattering and Time-Resolved Dichroism Measurement," J. Applied Physics, 59, 8, 2914-2924, 1986.

9. F. El Torki, P. Cassano, W.F. Reed, R. Schmehl, "Association of Small Molecule Cosolutes with Water Soluble Polymers II. Effects of Polymer Binding on the Reactivity of Water Soluble Porphyrins," J. Physical Chemistry, 91, 3686-3690, 1987.

10. D. Zanette, M.R. Leite, W.F. Reed, F. Nome, "Intrinsic Basicity Constant of 10-Phenyl-10-hydroxyiminodecanoate in Aqueous Solutions of Hexadecyl- trimethylammonium Bromide. Effect of Salts and Detergent Concentration," J. Physical Chemistry, 9, 2100-2102, 1987.

11. F. El Torki, W.F. Reed, R.M. Schmehl, "Photoinduced Electron Transfer Reactions of Micelle Forming Surfactant Ruthenium Bipyridyl Derivatives", J. Chem. Soc., Faraday Trans. I, 85 (2), 349-362, 1989.

12. C.E. Reed, Xiao Li, W.F. Reed, "The Effects of pH on Hyaluronate as Observed by Light Scattering", Biopolymers, 28, 1981-2000, 1989

13. C.E. Reed, W.F. Reed, "Light Scattering Power of Randomly Cut Random Coils with Application to the Determination of Depolymerization Rates," J. Chemical Physics, 91, 7193-7199, 1989.

14. I.M. Cuccovia, E. Feitosa, H. Chaimovich, L. Sepulveda, W.F. Reed, "Size, Electrophoretic Mobility and Ion Dissociation of Vesicles Prepared with Synthetic Amphiphiles," J. Physical Chemistry, 94, 3722-3725, 1990

15. C.E. Reed, W.F. Reed, "Monte Carlo Test of Electrostatic Persistence Length for Short Polymer Chains," J. Chemical Physics, 92, 6916-6926, 1990

16. M.T. Lamy-Freund, S. Schreier, R. Peitzsch, W.F. Reed, "Characterization and Time-Dependence of Amphoterecin B-Deoxycholate Aggregation by Quasielastic Light Scattering," J. Pharmaceutical Sci., 80, 3, 262-266, 1991

17. H. Nguyen, V.J. John, W.F. Reed, "Characteristics of Protein-Containing Reversed Micelles Subjected to Clathrate Hydrate Formation", J. Phys. Chem., 95, 1467-1471, 1991

18. W.F. Reed, C.E. Reed, L. Byers, "Random Coil Scission Rates Determined by Time Dependent Total Intensity Light Scattering: Hyaluronate Depolymerization by Hyaluronidase", Biopolymers, 30, 1073-1082, 1990

19. S. Ghosh, X. Li, C.E. Reed, W.F. Reed, "Persistence Length and Diffusion Behavior of High Molecular Weight Hyaluronate", Biopolymers, 30, 1101-1112, 1991

20. C.E. Reed, W.F. Reed "Effect of Polydispersity and Second Virial Coefficient on Light Scattering by Randomly Cut Random Coils", J. Chemical Physics, 93, 12, 9069-9074, 1990

21. Xiao Li, W.F. Reed "Polyelectrolyte Properties of Proteoglycans" J. Chemical Physics, 94, 4568-4580, 1991

22. C.E. Reed, W.F. Reed "Monte Carlo Electrostatic Persistence Lengths Compared with Experimental and Theoretical Results", J. Chemical Physics, 94, 8479-8486, 1991

23. H.Nguyen, M. Rao, J.B. Phillips, V.J. John and W.F.Reed, "Gas Hydrate Formation in Reversed Micelles- Applications in Bioseparations and Biocatalysis" App. Biochem. and Biotech., 28/29, 843-853, 1991

24. W.F. Reed, S. Ghosh, G. Medjahdi and J. François, "Experimental Electrostatic Persistence Length Scaling Behavior for Variably Ionized Polyelectrolytes," Macromolecules, 24, 6189-6198, 1991

25. R.M. Peitzsch, M. Burt and W.F. Reed "Evidence of Partial Draining for Linear Polyelectrolytes; Heparin, Chondroitin Sulfate and Polystyrene Sulfonate", Macromolecules, 25, 806-815, 1992

26. C.E. Reed and W.F. Reed "Monte Carlo Study of the Titration Behavior of Linear Polyelectrolytes", J. Chemical Physics, 96, 1609-1620, 1992

27. R.M. Peitzsch and W.F. Reed "High Osmotic Stress Behavior of Hyaluronate and Heparin", Biopolymers, 32, 219-238, 1992

28. S. Ghosh, R.M. Peitzsch and W.F. Reed "Polyelectrolyte Aggregates and other Particles as the Origin of the 'Extraordinary' Diffusional Phase", Biopolymers, 32, 1105-1122, 1992

29. M.B. da Silva, I. Cuccovia, H. Chaimovich, M.J. Politi, W.F. Reed "Electrostatic Properties of Zwitterionic Micelles", J. Physical Chemistry, 96, 6442-6449, 1992

30. C.E. Reed, W.F. Reed, "Monte Carlo Study of Light Scattering by Linear Polyelectrolytes", J. Chemical Physics, 97, 7766-7776, 1992

31. T.A. Wilson, W.F. Reed, "A Low Cost, Interferometric Differential Refractometer", Amer. J. Physics, 61, 9, 1046-1048, 1993

32. S. Ghosh, I. Kobal, D. Zanette, W.F. Reed "Conformational Contraction and Hydrolysis of Hyaluronate in NaOH Solutions" Macromolecules, 26, 4685-4693, 1993

33. W.F. Reed "Light Scattering Results on Polyelectrolyte Conformations, Diffusion and Interparticle Interactions and Correlations", invited chapter for ACS Ser. 548, "Macroion Characterization", K. Schmitz, Editor, 297-314, 1994

34. W.F. Reed "Comments on 'Domain Structure in Polyelectrolytes; is it Real?'", Macromolecules, 27, 873-874, 1994

35. I. Morfin, W. F. Reed, M. Rinaudo, Borsali "Further Evidence for Liquid-like Correlations in Polyelectrolyte Solutions", J. de Physique (Paris), 4, 69, 1001-1019 , 1994

36. W.F. Reed, "A Conformational Interpretation for the Peak of Reduced Viscosity for Polyelectrolytes at Low Ionic Strength" J. Chemical Physics, 101, 2515-2521, 1994

37. W.F. Reed "Liquid-like Correlations of Polyelectrolytes under High Shear Conditions", J. Chemical Physics, 100(10), 7825-7827, 1994

38. S. de Fatima Santos, F. Nome, D. Zanette, W.F. Reed, "Fluorescence Evidence for Formation of a Hyaluronate ion Dodecyltrimethylammonium Bromide Complex", J. Coll. and Int. Sci., 164, 260-262, 1994

39. S. Ghosh, W.F. Reed "New Light Scattering Signatures from Polymers undergoing Depolymerization with Application to Proteoglycan Monomer Degradation" Biopolymers, 5, 435-450, 1995

40. W.F. Reed, "Data Evaluation for Unified Multi-detector Size Exclusion Chromatography; Molecular Mass, Viscosity and Radius of Gyration Distributions" Macromolecular Chemistry and Physics, 196, 1539-1575, 1995

41. E. Frollini, W.F. Reed, M. Milas, M. Rinaudo, "Polyelectrolytes from Polysaccharides: Selective Oxidation of Guar Gum", Carbohydrate Polymers, 27, 129-135, 1995

42. W.F. Reed, "Time dependent light scattering from single and multiply stranded linear polymers undergoing random and endwise scission", J. Chemical Physics, 103, 7576-7584, 1995

43. M. Benmouna, W.F. Reed, "Theoretical Developments in Static Light Scattering", Ch. 1, "Static Light Scattering from Polymers", Wyn Brown, Ed., Oxford Science Pub., 1996

44. M. Milas, S. Printz, W.F. Reed, "Conformations and Flexibility of Native and Renatured Xanthan", Int'l. J. of Biological Macromolecules, 18, 211-221, 1996

45. W.F. Reed "Evaluation of Coupled Multi-Angle Light Scattering and Viscosimetric Detectors for SEC, with Application to Polyelectrolyte Characterization", invited chap., ACS Ser. 635 “Strategies in Size Exclusion Chromatograpy”, Ed. M. Potschka and P. Dubin, ch. 2, pp. 7-34, 1996

46. W.F. Reed "Time-Dependent Processes in Polyelectrolyte Solutions", invited chapter for Berichte der Bunsen-Gesellschaft special volume on Polyelectrolytes, 100, 1-11, 1996

47. D. P. Norwood, M. Benmouna, W.F. Reed, "Static Light Scattering from Mixtures of Polyelectrolyes in Low Ionic Strength Solutions", Macromolecules, 29, 4293-4303, 1996

48. C. Vinches, A. Parker, W.F. Reed, "Phase Behavior of Aqueous Gelatin/Oligosaccharide Mixtures" Biopolymers, 41, 607-622, 1997

49. L.H. Catalani, A.M. Rabello, F.H. Florenzano, M.J. Politi, W.F. Reed, "Real-time Determination of Ultraviolet Degradation Kinetics of Polymers in Solution", Int'l. J. of Polymer Characterization and Analysis, 3, 231-247, 1997

50. D. Norwood, C. Vinches, J. Anderson, W.F. Reed "Fluorescence-based test for Fiber Optic Continuity", J. App. Optics, 36, 1-4, 1997

51. D.P. Norwood, W.F. Reed "Comparison of Single Capillary and Bridge Viscometers as Size Exclusion Chromatography Detectors", Int. J. Polym. Ana. and Char., 4, 99-132, 1997

52. K. Do Amarral Risqi, M.J. Politi, W.F. Reed, T. Lamy-Freund, "Temperature and ionic strength dependent light scattering of DMPG dispersions", Chemistry and Physics of Lipids, 89m 31-44, 1997

53. D.P. Norwood, E. Minatti, W.F. Reed, “Surfactant/Polymer Assemblies: I) Surfactant Binding Properties”, Macromolecules, 31, 2957-2965, 1998

54. E. Minatti, D.P. Norwood, W.F. Reed, “Surfactant/Polymer Assemblies: II) Polyelectrolyte Properties”, Macromolecules, 31, 2966-2971, 1998

55. F.H. Florenzano, R. Strelitzki, W.F. Reed, "Absolute, Online Monitoring of Polymerization Reactions", Macromolecules, 31, 7226-7238, 1998

56. R. Strelitzki, W.F. Reed, “Automated Batch Characterization of Polymer Solutions by Static Light Scattering and Viscometry”, J. App. Polym. Sci., 73, 2359-2368 1999

57. R. Schimanowski, R. Strelitzki, D.A. Mullin, W. F. Reed "Heterogeneous Time Dependent Static Light Scattering", Macromolecules, 32, 7055-7063, 1999

58. R. de Cunha Michel, W.F. Reed, "New Evidence for the Non-equilibrium Nature of the "Extraordinary Diffusional Phase" in Polyelectrolyte Solutions", Biopolymers, 53, 19-39, 2000

59. J-L Brousseau, H. Ç. Giz, W. F. Reed, "Automatic, Simultaneous Determination of Differential Refractive Index of a Polymer and its Corresponding Monomer", J. App. Polym. Sci., 77, 3259-3262, 2000

60. A. Parker, F. Vigouroux, W.F. Reed, “The Dissolution Kinetics of Polymer Powders”, Am. Inst. Chem. Eng. Journal, 46, 7, 1290-1299, **2000**

61. W.F. Reed, "A Method for Online Determination of Polydispersity during Polymerization Reactions", Macromolecules, 33, 7165-7172, **2000**

62. E. Bayly, J.L. Brousseau, W.F. Reed, "Continuous Monitoring of the Effect of Changing Solvent Conditions on Polyelectrolyte Conformations and Interactions", Int. J. of Polymer Characterization and Analysis, 7, 1-19, **2002**

63. R.C. Michel, C.T. Andrade, W.F. Reed, "Estudo da Dissolução de Polieletrólitos em Água Pura e em Meios de Força Iônica Moderada"; Polímeros: Ciência e Tecnologia, 4, 142-147, **1999**

64. W.F. Reed "The Ivory Tower and Big Industry.... Monumental Edifices with Little in Common?", in *Scientific Bridges for 2000 and Beyond. A virtual colloquium by the Elf Professeurs de l'Académie des Sciences.* Académie des Sciences, Institut de France, **1999**

65. W.F. Reed, "Breaking new ground in polymer science with molecular weight analysis", invited article, American Laboratory, 32, 20-25, 8/**2000**

66. A. Giz, H. Giz, J.L. Brousseau, A. Alb, and W.F. Reed, "Kinetics and Mechanism of Acrylamide Polymerization by Absolute, Online Monitoring of Polymerization Kinetics", Macromolecules, 34, 5, 1180-1191, **2001**

67. A. Giz, H. Giz, J.L. Brousseau, A. Alb, W.F. Reed, "Online Monitoring of a Stepwise Polymerization Reaction: Polyurethane", J. App. Polym. Sci., 82, 2070-2077, **2001**

68. J.L. Ganter, W.F. Reed, "Real-time Monitoring of Enzymatic Hydrolysis of Galactomannans", Biopolymers, 59, 226-242, **2001**

69. B. Grassl, A.M. Alb, W.F. Reed, " Free radical transfer rate determination using online polymerization monitoring", Macromolecular Chemistry and Physics, 202, 2518-2524, **2001**

70. G.A. Sorci, W.F. Reed, "Electrostatic and Association Phenomena in Aggregates of Polymers and Micelles", Langmuir, 18, 353-364, **2002**

71. B. Grassl, W.F. Reed, "Online polymerization monitoring in a continuous tank reactor", Macromolecular Chemistry and Physics, 203, 586-597, 2002

72. L.G. Dias, F.H. Florenzano, W.F. Reed, M.S. Baptista, S.M.B. Souza, E.B. Alvarez, H. Chaimovich, I.M. Cuccovia, C.L.C. Amaral, C.R. Brasil, L.S. Romsted, M.J. Politi, "Effect of Urea on Biomimetic Systems: Neither Water 3-D Structure Rupture nor Direct Mechanism, Simply a More 'Polar Water'", Langmuir, 18, 319-324, **2002**

73. F. Chauvin, A.M. Alb, D. Bertin, W.F. Reed, "Kinetics and molecular weight evolution during controlled radical polymerization", Macromolecular Chemistry and Physics, 203, 2029-2040, **2002**

74. G.A. Sorci, W.F. Reed, "Electrostatically enhanced second and third virial coefficients, viscosity and interparticle correlations for linear polyelectrolytes", Macromolecules, 35, 5218-5227, **2002**

75. A. Giz, A. Oncul Koc, H. Giz, A.M. Alb, W.F. Reed "Online monitoring of reactivity ratios, composition, sequence length, and molecular weight distributions during free radical copolymerization", Macromolecules, 35, 6557-6571, **2002.**

76. W.F. Reed, "Monitoring Kinetic Processes in Polymer Solutions with Time Dependent Static Light Scattering (TDSLS)", Ch. 12, pp. 131-151, in *Scattering Methods for the Investigation of Polymers*, J. Kahovec, Ed., Wiley VCH, **2002**

77. D. Himel, D.P. Norwood, W. F. Reed, "Enzymatic Degradation of Polyester Urethanes Studied by Multi-Angle Laser Light Scattering", ch. 23, 286-297, *Biocatalysis in Polymer Science*, R.A. Gross & H. N. Cheng, Eds., ACS 840, **2003**

78. W.F. Reed, A.M. Alb, E. Mignard, H. Giz, A. Giz, F. H. Florenzano, R. Farinato "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP) ", Polymeric Materials: Science and Engineering, 88, 476-478, **2003**

79. M.F. Drenski, W.F. Reed, "Simultaneous Multiple Sample Light Scattering (SMSLS)", Polymeric Materials: Science & Engineering, 88, 304-305, **2003**

80. E. Mignard, O. Guerret, D. Bertin, W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP) of High Viscosity Reactions", Polymeric Materials: Science and Engineering, 88, 314-316, **2003**

81. W.F. Reed, "Automatic, Continuous Mixing Techniques for Online Monitoring of Polymer Reactions and for the Determination of Equilibrium Properties", ch. 20, 589-622, Handbook of Size Exclusion Chromatography and Related Techniques", 2nd Ed., Chi-san Wu, Ed., Marcel Dekker, **2003**

82. H. Çatalgil-Giz, A. Giz, A.M. Alb, W.F. Reed, "Absolute Online Monitoring of Acrylic acid Polymerization and the Effect of Salt and pH on Reaction Kinetics", J. Applied Polymer Science, 91, 1352-1359, **2004**

83. G.A. Sorci, W.F. Reed, "Effect of valence and chemical species of added electrolyte on polyelectrolyte conformations and interactions", Macromolecules, 37, 554-565, **2004**

84. Didem Sunbul, H. Catalgil-Giz, W.F. Reed, A. Giz, "An error in variables method for determining the reactivity ratios by on-line monitoring of copolymerization reactions", Macromolecular Theory and Simulation, 13, 162-168, 2004

85. E. Mignard, T. Leblanc, D. Bertin, O. Guerret, W.F. Reed, "Online monitoring of controlled radical polymerization: Nitroxide mediated gradient copolymerization", Macromolecules, 37, 966-975, **2004**

86. W.F. Reed, "Fundamentals of static light scattering and viscometry in SEC and related methods", Lead chapter for ACS Ser. 893 "Multiple Detection Size-Exclusion Chromatography", A.M. Striegel, Ed., ACS: Washington, DC, **2004**

87. W.F. Reed, "Automatic Continuous Online Monitoring of Polymerization reactions (ACOMP)", Feature Article, Polymer News, 29, 271-279, **2004**

88. M.F. Drenski, W.F. Reed, "Simultaneous Multiple Sample Light Scattering for Characterization of Polymer Solutions", J. App. Polym. Sci., vol. 92, 2724-2732, **2004**

89. A.M. Alb, E. Mignard, M.F. Drenski, W.F. Reed, "In Situ Time dependent signatures of light scattered from solutions undergoing polymerization reactions", Macromolecules, 37, 2578-2587, **2004**

90. M.F. Drenski, E. Mignard, A.M. Alb, W.F. Reed, "Simultaneous in Situ Monitoring of Parallel Polymerization Reactions using Light Scattering; a New Tool for High Throughput Screening", J. Combinatorial Chemistry, 6, 710-716, **2004**. DOI: 10.1021/cc049909u

91. E.A. Sander, A.M. Alb, E.A. Nauman, W.F. Reed, K.C. Dee, KC. "Solvent Effect on the Microstructure and Properties of 75/25 Poly(D,L-lactide-co-glycolide) Tissue Scaffolds", Journal of Biomedical Materials Research, 70(3):506-513, **2004**

92. W.F. Reed, D. De Kee, "Tulane Institute for Macromolecular Engineering and Science (TIMES)", Polymer News, 29, 323-326, **2004**

93. F.H. Florenzano, V. Fleming, P. Enohnyaket, W.F. Reed, "Coupling of Near Infra-Red spectroscopy to Automatic Continuous Online Monitoring of Polymerization Reactions", European Polymer Journal, 41, 535-545, **2005**

94. R.S. Farinato, J. Calbick, G.A. Sorci, F.H. Florenzano, W.F. Reed, "Online monitoring of the final divergent growth phase in the stepgrowth polymerization of polyamines" Macromolecules, 38, 1148-1158, **2005**

95. E. Mignard, J-F Lutz, T. Leblanc, K. Matyjaszewski, O. Guerret, W.F. Reed, "Kinetics and Molar Mass Evolution during Atom Transfer Radical Polymerization of n-Butyl Acrylate Using Automatic Continuous Online Monitoring." Macromolecules, 38, 9556-9563, **2005**

96. A.M. Alb, R. Farinato, J. Calbeck, W.F. Reed, "Online monitoring of polymerization reactions in inverse emulsions", Langmuir, 22, 831-840, **2006**

97. A.M. Alb, P. Enohnyaket, M. Drenski, A. Head, A.W. Reed, W.F. Reed, "Online monitoring of copolymerization using comonomers of similar spectral characteristics", Macromolecules, 39, 5705-5713, **2006**

98. A.M. Alb, P. Enohnyaket, R. Shunmugam, G.N. Tew, W.F. Reed, "Quantitative contrasts in the copolymerization of acrylate and methacrylate monomers", Macromolecules, 39, 8283-8292, **2006**

99. M.F. Drenski, E. Mignard, W.F. Reed, "Direct Measurement of Chain Transfer during Controlled Radical Polymerization", Macromolecules, 39, 8213-8215, **2006**

100. A.M. Alb, P. Enohnyaket, J.F. Craymer, T. Eren, E.B. Coughlin, W.F. Reed, "Online monitoring of Ring Opening Metathesis Polymerization of Cyclooctadiene and a Functionalized Norbornene", Macromolecules, 40, 444-451, **2007**

101. N. Sahiner, A.M. Alb, R. Graves, T. Mandal, G.L. McPherson, W.F. Reed, V.T. John, "Core-shell nanohydrogels structures as tunable delivery systems", Polymer, 48, 704-711, **2007**

102. A.M. Alb, A. Paril, H. Çatalgil-Giz, A. Giz, W. F. Reed, "Evolution of composition, molar mass, and conductivity during the free radical copolymerization of polyelectrolytes", J. Phys. Chem. B, 111, 8560-8566, **2007**

103. A. Paril, A.M. Alb, W.F. Reed, "Online Monitoring of the Evolution of Polyelectrolyte Characteristics during Postpolymerization Modification Processes" Macromolecules, 40, 4409-4413, **2007**

104. P. Enohnyaket, T. Kreft, A. M. Alb, M. Drenski, W. F. Reed, "Determination of molecular mass during online monitoring of copolymerization reactions", Macromolecules, 40, 8040-8049, **2007**

105. A.M. Alb, M. F. Drenski, W.F. Reed, "Automatic continuous online monitoring of polymerization reactions (ACOMP)**"** , Polymer International (invited), 57, 390-396, **2008**

106. Alina M. Alb, Algi Serelis, Wayne F. Reed "Kinetic trends in RAFT homopolymerization from online monitoring", Macromolecules, 41, 332-338, **2008**

107. Alina M. Alb, Wayne F. Reed, "Recent advances in ACOMP", Macromolecular Symposia, 271(Modelling, Monitoring and Control of Polymer Properties), 15-25, **2008**

108. Alina M. Alb, Wayne F. Reed, "Simultaneous monitoring of polymer and particle characteristics during emulsion polymerization", Macromolecules, 41, 2406-2414, **2008**

109. Bogdan Zdyrko, Pazit Bar-Yosef Ofir, Alina M.Alb, Wayne F. Reed, Maria M. Santore, "Adsorption of Copolymers Micelles and Aggregates: From Kinetics to Adsorbed Layer Structure", J. Colloid & Interface Sci., 322, 365-374, **2008**

110. Gemma Gonzalez Garcia, Tomasz Kreft, Alina M. Alb, José Carlos de la Cal, José M. Asúa, W. F. Reed, "Monitoring the synthesis and properties of copolymeric polycations", J. Phys. Chem. B, 112, 14597-14608, **2008**

111. Tomasz Kreft, Wayne F. Reed, "Direct monitoring of the cross-over from diffusion controlled to decomposition controlled initiation in free radical polymerization", Macromole. Chem. & Physics, 209, 24, 2463-2474, **2008**

112. Alina M. Alb, Michael F. Drenski, Wayne F. Reed, "Simultaneous continuous, non-chromatographic monitoring and discrete chromatographic monitoring of polymerization reactions", J. Appl. Polym. Sci., 13, 190-198, **2009**

113. Tomasz Kreft, Wayne F. Reed, "Experimental observation of cross-over from non-condensed to counterion condensed regimes during free radical polyelectrolyte copolymerization under high composition drift conditions", J. Phys. Chem. B., 113, 8303-8309, **2009**

114 Tomasz Kreft, Wayne F. Reed, "Predictive control and verification of conversion kinetics and polymer molecular weight in semi-batch free radical homopolymer reactions" European Polymer J., 45, 2288-2303, **2009**.

115. Tomasz Kreft, Wayne F. Reed, "Predictive control of average composition and molecular weight distributions in semi-batch free radical copolymerization reactions", Macromolecules, 42, 5558-5565, **2009**. DOI: 10.1021/ma900745n

116. Alina M. Alb, Wayne F. Reed, "Online monitoring of molecular weight and other characteristics during semi-batch emulsion polymerization under monomer starved and flooded conditions", Macromolecules, 42, 8093-8101, **2009**

117. Rilton Alves de Freitas , Michael F. Drenski, Alina M. Alb, Wayne F. Reed "Characterization of stability, aggregation, and equilibrium properties of modifiednatural products; The case of carboxymethylated chitosans", Mat. Sci. & Eng. C, 30, 234-241, **2010**

118. A.M. Alb, W.F. Reed, "Fundamental measurements in online polymerization reaction monitoring and control, with a focus on ACOMP", Macromolecular Reactor Engineering, **2010**, 4, 470-485.

119. Li, Zheng; Serelis, Algirdas K.; Reed, Wayne F.; Alb, Alina M. "Toward amphiphilic diblock copolymers by RAFT. Kinetic study on pH responsive polymers" Polymer Preprints, **2010**, 51, 476-477.

120. Li, Zheng; Serelis, Algirdas K.; Reed, Wayne F.; Alb, Alina M. "Deviations from livingness during gradient copolymerization by RAFT." Polymer Preprints, **2010**, 51, 84-85.

121. Alb, Alina M.; Ness, Jason S.; Reed, Wayne F. "Online monitoring of nitroxide mediated polymerization in emulsion." Polymer Preprints, **2010**, 51, 80-81.

122. McFaul, Colin A.; Drenski, Michael F.; Alb, Alina M.; Reed, Wayne F. "During synthesis monitoring of polymer lower critical solution temperature." Polymer Preprints **2010**, 51, 437-438.

123. Li, Zheng; Serelis, Algirdas K.; Reed, Wayne F.; Alb, Alina M. Online monitoring of the copolymerization of 2-(dimethylamino)ethyl acrylate with styrene by RAFT. Deviations from reaction control. Polymer, **2010**, 51, 4726-4734.

124. McFaul, Colin A.; Drenski, Michael F.; Alb, Alina M.; Reed, Wayne F. "Simultaneous Multiple Sample Light Scattering Detection Of LCST During Copolymer Synthesis", Polymer, **2011**, 4825-4833. DOI: 10.1016/j.polymer.2011.08.026

125. Michael F. Drenski, Mark L. Brader, Roy W. Alston, Wayne F. Reed "Monitoring Protein Aggregation Kinetics with Simultaneous Multiple Sample Light Scattering (SMSLS)" Analytical Biochemistry, 437, 185-197, 2013. DOI: 10.1016/j.ab.2013.02.014

126. W. F. Reed, "Automatic Continuous Online Monitoring of Polymerization Reactions (ACOMP)", Invited Chapter, Encyclopedia of Analytical Chemistry, Elsevier, published October **2013**. DOI: 10.1002/9780470027318.a9288

127. **Book:** *Monitoring Polymerization Reactions: From Fundamentals to Applications.* Eds. Alina M. Alb, Wayne F. Reed. Book invited by Wiley Interscience. Released January **2014**. ISBN 978-0-470-91738-1

128. Zifu Zhu, Wayne F. Reed, "Enhanced Supra-micellar assembly by hydrophobic dopants", Langmuir, 29, 10376-10382, **2013**. DOI: 10.1021/la402107z

129. C. Brusamarello, M.F. Drenski, A. Isakov, W.F. Reed, "Filtrodynamics: Time dependent trans-filter pressure signals for early detection and monitoring of particulates during chemical processing", J. Macromolecular Reaction Engineering, 8, 3, 186-192, **2014**.
doi: 10.1002/mren.201300152

130. Marie Dufrechou, Emmanuel Mignard, Michael F. Drenski, Wayne F. Reed, "Filtrodynamics 2: Effects of particle size and filter type on trans-filter time-dependent pressure signals". J. Macromolecular Reaction Engineering, 8, 529-542, **2014**. DOI: 10.1002/mren.201300185

131. Colin A. McFaul, Michael F. Drenski, Wayne F. Reed, "Sensitivity of the LCST of NIPAM-Am copolymers to discrete and broad composition distributions", Polymer, 55, 4899-4907, **2014**

132. Michael F. Drenski, Mark L. Brader, and Wayne F. Reed, "Simultaneous Multiple Sample Light Scattering (SMSLS) for continuous monitoring of protein aggregation", Chapter 6 in Technologies for Therapeutic Monoclonal Antibody Characterization, Volume 3. Eds. John Schiehl, Oleg Borisov, American Chemical Society, Wash D.C., **2015**

133. Zifu Zhu and Wayne F. Reed, "Polymeric suppression of dopant enhanced surfactant supramicellar assemblies", Macromolecular Chemistry and Physics, 216, 2, **2015**, 205–210, DOI: 10.1002/macp.201400341

134. N. Ghadipasha, A. Geraili, J.A. Romagnoli, C. A. Castor Jr., N. W. F. Reed, "First Steps towards Online Optimal Control of Molecular Weight in Batch and Semi-batch Free-Radical Polymerization Reactors", Computer Aided Chemical Engineering, **2016**, 38, 1129-1134

135. Navid Ghadipasha, Aryan Geraili, Jose A. Romagnoli, Carlos A. Castor Jr., Michael F. Drenski and Wayne F. Reed, "Combining On-line Characterization Tools with Modern Software Environments for Optimal Operation of Polymerization Processes", Processes, **2016**, 4, 5, 1-23, doi:10.3390/pr4010005

136. Gregory V. Barnett, Michael Drenski, Vladimir Razinkov, Wayne F. Reed, Christopher J. Roberts, "Identifying protein aggregation mechanisms and quantifying aggregation rates from combined monomer depletion and continuous light scattering", Analytical Biochemistry, **2016**, 511, 80-91

137. Terry McAfee, Natalie Leonardi, Rick Montgomery, Julia Siqueira, Thomas Zekoski, Michael F. Drenski, Wayne F. Reed, "Automatic control of polymer molecular weight during synthesis", Macromolecules, 49 (19), 7170-7183, **2016**, DOI: 10.1021/acs.macromol.6b01522

138. Natalie Leonardi, Rick D. Montgomery, Julia Siqueira, Terry McAfee, Michael F. Drenski, Wayne F. Reed, "Automatic synthesis of multimodal polymers", J. Macromolecular Engineering, **2017**, http://dx.doi.org/10.1002/mren.201600072

139. Aide Wu, Zifu Zhu, Michael F. Drenski, Wayne F. Reed, "Simultaneous monitoring of the effects of multiple ionic strengths on properties of copolymeric polyelectrolytes during their synthesis", **2017**, Processes, 5, 17, 1-14, DoI 10.3390/pr 5020017

140. Vivian C. Spier, Maria Rita Sierakowski, Wayne F. Reed, and Rilton A. de Freitas, "Polysaccharide depolymerization from tempo-catalysis: effect of tempo concentration " Carbohydrate Polymers, Carbohydrate Polymers, **2017**

141. Terry McAfee, Rick D. Montgomery, Thomas Zekoski, Aide Wu, Wayne F. Reed, "Automatic, simultaneous control of polymer composition and molecular weight during free radical copolymer synthesis" submitted, Sept. 2017

142. "Online Optimal Feedback Control of Polymerization Reactors: Application to polymerization of acrylamide-water-potassium persulfate (KPS) system", N. Ghadipasha, W. Zhu, J.A. Romagnoli, T. McAfee, T. Zekoski, W. F. Reed, Industrial & Engineering Chemistry Research, **2017**, 56, 25, 7322–7335

143. "Integrated Online Nonlinear State Estimation and Feedback Control Applied to Polymerization Reactors", Salas, S. D.; Ghadipasha, N.; Zhu, W.; Mcafee, T.; Zekoski, T.; Reed, W. F.; Romagnoli, J. A. Submitted to *AIChE Journal* **2017**

144. Daniel Rees, Christina Cole, Curtis Jarand, Wayne F. Reed, "Discerning different mechanisms of protein aggregation via superposability of time dependent light scattering", in preparation

145. Frederick F. Twigg, Nazila Soleimani, Michael F. Drenski, Mark L. Brader, Wayne F. Reed, "Simultaneous measurement of the evolution of protein aggregates and larger particulates in stir-stressed protein solutions", in preparation