

Michael Rubinstein

Department of Chemistry
University of North Carolina
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Education

- November 1983 Ph.D. in Theoretical Physics, Harvard University
Thesis: *Order and Frustration in Random Media*
Research advisor: Prof. David R. Nelson
- June 1980 M.A., Harvard University
Major subject: Theoretical Physics
- June 1979 B.S. in Physics, California Institute of Technology
Graduated with honors (GPA 4.0)

Professional Experience

- 1995 – Present Department of Chemistry and Curriculum of Applied and Materials Sciences
University of North Carolina, Chapel Hill, NC; John P. Barker Distinguished
Professor (2006 – present), J. Ross MacDonald Distinguished Term Professor
(2003-2006), Professor (1999-2003), Associate Professor (1995-1999)
- 2001 – Present Scientific Advisory Board, Cabot Corp., Billerica, MA
- 2001 – 2004 Associate Editor of *Macromolecules*, a Publication of the American Chemical
Society
- 1999 – 2001 Consultant, tesa tape, inc., Charlotte, NC
- Spring 1998 Visiting Professor, College de France, Paris, France
- 1995 – 2001 Consultant, Eastman Kodak Company, Rochester, NY
- 1995 Consultant, Eisai Inc., Research Triangle Park, NC
- Spring – Summer Juliot Curie Professor, Groupe de Physico-Chimie Theorique, ESPCI, Paris,
1994 France
- 1987 – 1995 Adjunct Professor, Department of Physics and Astronomy, University of
Rochester, Rochester, NY
- 1985 – 1995 Research Scientist, Research Laboratories, Eastman Kodak Company, Rochester,
NY
- 1983 – 1985 Postdoctoral Fellow, AT&T Bell Laboratories, Murray Hill, NJ
- Summer 1982 Research Assistant, IBM Watson Center, Yorktown Heights, NY

Teaching Experience

- 1995 – Present Department of Chemistry, University of North Carolina,
Thermodynamics and Introduction to Statistical Thermodynamics
Thermodynamics, Kinetics and Diffusion
Physical Chemistry of Polymers
Intermediate Polymer Chemistry
Statistical Mechanics
- 1987 – 1995 Department of Physics and Astronomy, University of Rochester
Polymer Dynamics
Polymer Physics

Outside Teaching Activity

- 2002 Summer Taught a mini-course on “Polymer Physics” as part of the summer program on
Physics of Soft Condensed Matter at the Boulder School for Condensed Matter
and Materials Physics; Boulder, CO
- 2002 Spring “Rheology of Polymeric Liquids,” ChE/Materials 238A-B, Chemical
Engineering Department, University of California, Santa Barbara
- 1998 Spring “Tube Model 30 Years Later” a four-lecture course at College de France, Paris

Honors and Awards

- 2004 Co-chair, Gordon Research Conference on Macromolecular, Colloidal and
Polyelectrolyte Solutions, Ventura, CA
- 2001 Fellow of the American Physical Society
- 1998 College de France, Paris, France: *Visiting Professor - Invited Course of Lectures*
- 1994 Ecole Superieure de Physique et de Chimie Industrielles, Paris, France: *Awarded
Juliot Curie Visiting Professor Position*
- 1987 Eastman Kodak Company, C.E.K. Mees Award: *In Recognition of Excellence in
Scientific Research and Reporting*
- 1979 California Institute of Technology, elected to the *Tau Beta Pi, National
Engineering Honor Society*
- 1978 California Institute of Technology, Carnation Prize: *Merit award for most
academically talented students*

Departmental Service

2001 – present	Polymer & Materials Science Division (Division coordinator)
2002 – 2003	Faculty Search Committee (Chair)
2002 – 2003	Graduate Studies Committee
2001 – 2002	Dept. of Chemistry Self-Study for External Review (Chair)
1999 – 2000	Five-year Planning Committee (Chair)
1997 – 1998	Physical Chemistry Seminar Series
1996 – 1998	Polymer Seminar Series
1995 – 1998	Chemistry Library Committee

University Service

2005	Institute for Advanced Materials Faculty Search Committee
2004	Packard Fellowship Internal Review Committee
2001 – 2004	Searle Scholars Program and Pew Scholars Program Committees
2002 – 2003	Institute of Advance Materials, Nanoscience and Technology, member of Steering Committee
2001 – 2003	Biophysics Program Committee
2001 – 2003	Materials Science Planning Committee
1998 – 2000	Science Advisors Committee
1999 – 2000	Soft Materials Faculty Search Committee (Chair)
1996 – 1998	Department of Physics Ph.D. Committee of Pichet Thiansathaporn
1996 – 1997	School of Public Health Ph.D. Committee of Myoseon Jang
1996 - Present	Member of the Faculty of Biological Physics
1996	UNC representative at the Hoechst Celanese Senior Technical Staff Conference
1996 – 1997	Search Committee, Curriculum of Applied and Materials Sciences
1995 – Present	Joint Appointment at the Curriculum of Applied and Materials Sciences

Regional Service

2002 – 2006	PhD Committee of Christopher Kloxin, NC State University
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Local High School Service

2002 – 2005 Volunteer at the Science and Math Clubs at Chapel Hill High School
1999 Science Fair judge at Guy B. Phillips Middle School

National Service

American Chemical Society

Associate Editorship, *Macromolecules* (2001 – 2004)

American Physical Society

Polymer Physics Fellowship Committee (2002-2003, 2005-2006)

Education Committee (1998 – 1999)

Organized a Symposium on *Charged Polymers* at the 1996 March Meeting

Society of Rheology

Bingham Award Committee (1998 – 2002)

Organized a Symposium on *Molecular Theories in Polymer Dynamics* at the 69th Annual Meeting of the Society (October 1997)

Organized a Symposium on *Molecular Models of Polymer Liquids* at the 63rd Annual Meeting of the Society (October 1991)

Corporate Advisory Board Membership

Scientific Advisory Board of Cabot Corporation

National Science Foundation Review Panel

Materials Research Science and Engineering Centers

National Research Council

Research Associateship Panel

Gordon Research Conference

Co-chair of the Conference on *Macromolecular, Colloidal and Polyelectrolyte Solutions* (2004)

Vice chair of the Conference on *Macromolecular, Colloidal and Polyelectrolyte Solutions* (2002)

International Service

Co-organizer of the NATO Advanced Study Institute on *Theoretical Challenges in the Dynamics of Complex Fluids*, Cambridge, England (1996).

Manuscript Referee for:

- Annals of Physics*
- Computational & Theoretical Polymer Science*
- Electrophoresis*
- European Physical Journal E*
- Europhysics Letters*
- Journal of the American Chemical Society*
- Journal of Chemical Physics*
- Journal of Computational Chemistry*
- Journal of Mathematical Chemistry*
- Journal of Non-Newtonian Fluid Mechanics*
- *Journal of Physical Chemistry*
- Journal of Polymer Science*
- Journal of Rheology*
- Langmuir*
- Macromolecules*
- Die Makromolekulare Chemie*
- Nature*
- Physica A*
- Physical Review E*
- Physical Review Letters*
- Polymer*
- Polymer Engineering & Science*
- Rheological Acta*
- Science*

Proposal Reviewer for:

- Department of Energy
- International Science Foundation
- Israel Science Foundation
- Marsden Fund, Royal Society of New Zealand
- National Science and Engineering Research Council of Canada
- National Science Foundation
- Petroleum Research Fund (ACS)
- Research Corporation

Memberships in Professional Societies

- American Chemical Society
- American Physical Society, Divisions of:
 - High Polymer Physics
 - Condensed Matter Physics
- Materials Research Society
- New York Academy of Sciences
- Society of Rheology

Books Published

2003 “Polymer Physics” Coauthored with Ralph Colby. Oxford University Press, Oxford, UK.

Journal Publications

[Currently over 4,300 citations by other scientists]

1. “Regimes of Conformational Transitions of a Diblock Polyampholyte” by Z. Wang and M. Rubinstein, *Macromolecules* **39**, 5897-5912 (2006).
2. “Solution Properties of a Fluorinated Alkyl Methacrylate Polymer in Carbon Dioxide” by J. Guo, P. Andre, M. Adam, S. Panyukov, M. Rubinstein, and J. M. DeSimone, *Macromolecules* **39**, 3427-3434 (2006).
3. “Adsorption-Induced Scission of Carbon-Carbon Bonds” by S. S. Sheiko, F. C. Sun, A. Randall, D. Shirvanyants, M. Rubinstein, H. Lee, and K. Matyjaszewski, *Nature* **440**, 191-194 (2006). [featured in “Physical Chemistry: Stressed Molecules Break Down” by S. Granick and S. C. Bae, *Nature*, 440, 160-161 (2006)]
4. “Counterion-Correlation-Induced Attraction and Necklace Formation in Polyelectrolyte Solutions: Theory and Simulations”, by Q. Liao, A. V. Dobrynin and M. Rubinstein, *Macromolecules* **39**, 1920-1938 (2006).
5. “Reversible Morphological Transitions of Polystyrene-*b*-Polyisoprene Micelles” by I. Larue, M. Adam, M. Pitsikalis, N. Hadjichristidis, M. Rubinstein, and S. S. Sheiko, *Macromolecules* **39**, 309-314 (2006).
6. “Flow-Enhanced Epitaxial Order of Brush-Like Macromolecules on Graphite” by H. Xu, S. S. Sheiko, D. Shirvanyants, M. Rubinstein, K. L. Beers, and K. Matyjaszewski, *Langmuir* **22**, 1254-1259 (2006).
7. “Scaling Theory of Diblock Polyampholyte Solutions” by N. P. Shusharina, E. B. Zhulina, A.V. Dobrynin, and M. Rubinstein, *Macromolecules* **38**, 8870-8881 (2005).
8. “Theory of Polyelectrolytes in Solution and at Surfaces” by A. V. Dobrynin and M. Rubinstein, *Prog. Polym. Sci.* **30**, 1049-1118 (2005).
9. “Molecular Visualization of Conformation-Triggered Flow Instability” by H. Xu, D. Shirvanyants, K. Beers, K. Matyjaszewski, A. V. Dobrynin, M. Rubinstein, and S. S. Sheiko, *Phys. Rev. Lett.* **94**, 237801 (2005).
10. “Diblock Copolymer Micelles in a Dilute Solution” by E. B. Zhulina, M. Adam, I. LaRue, S. Sheiko, and M. Rubinstein, *Macromolecules* **38**, 5330-5351 (2005).
11. “Explanation of Anomalous Scaling of Swollen Entangled Chains” by S. P. Panyukov and M. Rubinstein, *Macromolecules* **38**, 3511-3514 (2005).
12. “Molecular Motion in a Spreading Precursor Film” by H. Xu, D. Shirvanyants, K. Beers, K. Matyjaszewski, M. Rubinstein, and S. S. Sheiko, *Phys. Rev. Lett.* **93**, 206103 (2004).
13. “Light Scattering Study of Polydimethyl Siloxane in Liquid and Supercritical Carbon Dioxide” by P. Andre, S. L. Folk, M. Adam, M. Rubinstein, and J. M. DeSimone, *J. Phys. Chem. A* **108**, 9901-9907 (2004).

14. "Polymers: A Multitude of Macromolecules" by S. Granick and M. Rubinstein, *Nature Materials*, **3**, 586-587 (2004).
15. "Polyampholytes" by A. V. Dobrynin, R. H. Colby, and M. Rubinstein, *J. Pol. Sci.: Polym. Phys.* **B42**, 3513-3538 (2004).
16. "Wormlike Micelles of Block Copolymers: Measuring the Linear Density by AFM and Light Scattering" by I. LaRue, M. Adam, M. da Silva, S. Sheiko and M. Rubinstein, *Macromolecules* **37**, 5002-5005, (2004).
17. "Effect of Short-Range Interactions on Polyelectrolyte Adsorption at Charged Surfaces" by A. V. Dobrynin and Michael Rubinstein, *J. Phys. Chem. B*, **107**, 8260-8269 (2003).
18. "Molecular Dynamics Simulations of Polyelectrolyte Solutions: Nonuniform Stretching of Chains and Scaling Behavior" by Q. Liao, A. V. Dobrynin, and Michael Rubinstein, *Macromolecules*, **36**, 3386-3398 (2003).
19. "Molecular Dynamics Simulations of Polyelectrolyte Solutions: Osmotic Coefficient and Counterion Condensation" by Q. Liao, A. V. Dobrynin, and Michael Rubinstein, *Macromolecules*, **36**, 3399-3410 (2003).
20. "Monte-Carlo Simulations of Homopolymer Chains. I Second Virial Coefficient" by I. M. Withers, A. V. Dobrynin, M. L. Berkowitz, and M. Rubinstein, *J. Chem. Physics*, **118**, 4721-4732 (2003).
21. "Polymeric Nanogels Produced via Inverse Microemulsion Polymerization as Potential Gene and Antisense Delivery Agents" by K. McAllister, P. Sazani, M. Adam, M.J. Cho, M. Rubinstein, R.J. Samulski, J.M. DeSimone, *JACS*, **124**, 15198-15207 (2002).
22. "Elasticity of Polymer Networks" by M. Rubinstein and S. Panyukov, *Macromolecules*, **35**, 6670-6686 (2002).
23. "Dynamics of Entangled Associating Polymers with Large Aggregates" by A. N. Semenov and M. Rubinstein, *Macromolecules*, **35**, 4821-4837 (2002).
24. "Adsorption of Hydrophobic Polyelectrolytes at Oppositely Charged Surfaces" by A. V. Dobrynin and M. Rubinstein, *Macromolecules*, **35**, 2754-2758 (2002).
25. "Adsorption of Polyelectrolytes at Oppositely Charged Surfaces" by A. V. Dobrynin, A. Deshkovski, and M. Rubinstein, *Macromolecules*, **34**, 3421-3436 (2001).
26. "Adsorption Isotherms of Polyampholytes at Charged Particles" by E. B. Zhulina, A. V. Dobrynin, and M. Rubinstein, *J. Phys. Chem. B*, **105**, 8917-8930 (2001).
27. "Counterion Phase Transition in Dilute Polyelectrolyte Solutions" by A. Deshkovski, S. Obukhov, and M. Rubinstein, *Phys. Rev. Lett.* **86**, 2341-2344 (2001).
28. "Adsorption of Polyampholytes on a Charged Spherical Particle" by E. Zhulina, A. V. Dobrynin, and M. Rubinstein, *Eur. Phys. J. E* **5**, 41-49 (2001).
29. "Counterion Condensation and Phase Separation in Solutions of Hydrophobic Polyelectrolytes" by A. V. Dobrynin and M. Rubinstein, *Macromolecules* **34**, 1964-1972 (2001).
30. "Dynamics of Entangled Solutions of Associating Polymers" by M. Rubinstein and A. N. Semenov, *Macromolecules* **34**, 1058-1068 (2001).
31. "Structure of Adsorbed Polyampholyte Layers at Charged Objects" by A. V. Dobrynin, E. B. Zhulina, and M. Rubinstein, *Macromolecules* **34**, 627-639 (2001).

32. "Hydrophobically Modified Polyelectrolytes in Dilute Salt-Free Solutions" by A. V. Dobrynin and M. Rubinstein, *Macromolecules* **33**, 8097-8105 (2000).
33. "Adsorption of Polyelectrolytes at an Oppositely Charged Surface" by A. V. Dobrynin, A. Deshkovski and M. Rubinstein, *Phys. Rev. Lett.* **84**, 3101-3104 (2000).
34. "Unexpected Scenario of Glass Transition in Polymer Globules: An Exactly Enumerable Model" by R. Du, A. Yu. Grosberg, T. Tanaka and M. Rubinstein, *Phys. Rev. Lett.* **84**, 2417-2420 (2000).
35. "Long-Range Multichain Adsorption of Polyampholytes on a Charged Surface" by A. V. Dobrynin, S. P. Obukhov and M. Rubinstein, *Macromolecules* **32**, 5689-5700 (1999).
36. "Associations Leading to Formation of Reversible Networks and Gels" by M. Rubinstein and A. V. Dobrynin, *Current Opinion in Colloid & Interface Science* **4**, 83-87 (1999).
37. "Hydrophobic Polyelectrolytes" by A. V. Dobrynin and M. Rubinstein, *Macromolecules* **32**, 915-922 (1999).
38. "Polyampholyte Solutions between Charged Surfaces: Debye-Huckel Theory" by A. V. Dobrynin, M. Rubinstein and J. F. Joanny, *J. Chem. Phys.* **109**, 9172-9176 (1998).
39. "Light-Scattering Study of Diblock Copolymers in Supercritical Carbon Dioxide: CO₂ Density-Induced Micellization Transition" by E. Buhler, A. Dobrynin, J.M. DeSimone and M. Rubinstein, *Macromolecules* **31**, 7347-7355 (1998).
40. "Dynamics of Strongly Entangled Polymer Systems: Activated Reptation" by A. N. Semenov and M. Rubinstein, *Eur. Phys. J. B* **1**, 87-94 (1998).
41. "Thermoreversible Gelation in Solutions of Associative Polymers. 1. Statics" by A. N. Semenov and M. Rubinstein, *Macromolecules* **31**, 1373-1385 (1998).
42. "Thermoreversible Gelation in Solutions of Associative Polymers. 2. Linear Dynamics" by M. Rubinstein and A. N. Semenov, *Macromolecules* **31**, 1386-1397 (1998).
43. "Electrophoresis of Polyampholytes" by D. Long, A. V. Dobrynin, M. Rubinstein and A. Ajdari, *J. Chem. Phys.* **108**, 1234-1244 (1998).
44. "Non-Affine Deformation and Elasticity of Polymer Networks" by M. Rubinstein and S. P. Panyukov, *Macromolecules* **30**, 8036-8044 (1997).
45. "Adsorption of a Polyampholyte Chain on a Charged Surface" by A. V. Dobrynin, M. Rubinstein and J.-F. Joanny, *Macromolecules* **30**, 4332-4341 (1997).
46. "Polyelectrolyte-Gelatin Complexation" by W. A. Bowman, M. Rubinstein and J. Tan, *Macromolecules* **30**, 3262-3270 (1997).
47. "Extraction of a Hydrophilic Compound from Water into Liquid CO₂ using Dendritic Surfactants" by A. A. Cooper, J. D. Londono, G. Wignall, J. B. McClain, E. T. Samulski, J. S. Lin, A. Dobrynin, M. Rubinstein, A. L. C. Burke, J. M. J. Frechet and J. M. DeSimone, *Nature* **389**, 368-371 (1997).
48. "Long-Range Effects on Polymer Diffusion Induced by a Bounding Interface" by X. Zheng, M. H. Rafailovich, J. Sokolov, Y. Strzhemechny, S. A. Schwarz, B. B. Sauer and M. Rubinstein, *Phys. Rev. Lett.* **79** 241 (1997).
49. "Solutions of Associative Polymers" by M. Rubinstein and A. V. Dobrynin, *TRIP* **5**, 181-186 (1997).
50. "Topologically Induced Glass Transition in Freely Rotating Rods" by S. Obukhov, D. Kobzev, D. Perchak and M. Rubinstein, *J. Phys. I (France)* **7**, 563-568 (1997).

51. "Stress-Induced Ordering in Microphase-Separated Multicomponent Networks" by S. Panyukov and M. Rubinstein, *Macromolecules* **29**, 8220-8230 (1996).
52. "A Self-Consistent Mean Field Model of a Starburst Dendrimer: Dense Core vs. Dense Shell" by D. Boris and M. Rubinstein, *Macromolecules* **29**, 7251-7260 (1996).
53. "Deterministic Model of DNA Gel Electrophoresis in Strong Electric Fields" by N. Lee, S. P. Obukhov and M. Rubinstein, *Electrophoresis* **17**, 1011-1017 (1996).
54. "Cascade of Transitions of Polyelectrolytes in Poor Solvent" by A. V. Dobrynin, M. Rubinstein and S. P. Obukhov, *Macromolecules* **29**, 2974-2979 (1996).
55. "Elastic Modulus and Equilibrium Swelling of Polyelectrolyte Gels" by M. Rubinstein, R. H. Colby, A. V. Dobrynin and J. F. Joanny, *Macromolecules* **29**, 398-406 (1996).
56. "Scaling Theory of Polyelectrolyte Solutions" by A. V. Dobrynin, R. H. Colby and Rubinstein, *Macromolecules* **28**, 1859-1871 (1995).
57. "Flory Theory of a Polyampholyte Chain" by A. V. Dobrynin and M. Rubinstein, *Phys. II (France)* **5**, 677 (1995).
58. "Reptation Dynamics of a Polymer Melt near an Attractive Solid Interface" by Zheng, B. B. Sauer, J. G. Van Alsten, S. A. Schwartz, M. H. Rafailovich, J. Sokolov and M. Rubinstein, *Phys. Rev. Lett.* **74**, 407 (1995).
59. "Dynamics of Semidilute Polyelectrolyte Solutions" by M. Rubinstein, R. H. Colby and A. V. Dobrynin, *Phys. Rev. Lett.* **73**, 2776-2779 (1994).
60. "Dynamics of a Ring Polymer in a Gel" by S. P. Obukhov, M. Rubinstein and T. A. Duke, *Phys. Rev. Lett.* **73**, 1263-1266 (1994).
61. "Surface-Induced Lamellar Ordering in a Hexagonal Phase of Diblock Copolymers" by M. S. Turner, M. Rubinstein and C. M. Marques, *Macromolecules*, **27**, 4986-4992 (1994).
62. "Loop Statistics in Adsorbed Polymer Solutions" by J. F. Joanny, A. Johner and M. Rubinstein, *Coll. Surf. A: Physicochem. Eng. Asp.* **86**, 133-136 (1994).
63. "Hydrodynamics of Polymer Solutions via Two-Parameter Scaling" by R. H. Colby, M. Rubinstein and M. Daoud, *J. Phys. II (France)* **4**, 1299-1310 (1994).
64. "Dynamics of Stars and Linear Chains Dissolved in a Polymer Melt" by F. Brochard-Wyart, A. Ajdari, L. Leibler, M. Rubinstein and J. L. Viovy, *Macromolecules*, **27**, 803-808 (1994).
65. "Slippage of Entangled Polymers over a Grafted Solid" by A. Ajdari, F. Brochard-Wyart, P. G. de Gennes, L. Leibler and J. L. Viovy and M. Rubinstein, *Physica A*, **204**, 17-39 (1994).
66. "Network Modulus and Superelasticity" by S. P. Obukhov, M. Rubinstein and R. H. Colby, *Macromolecules*, **27**, 3191-3198 (1994).
67. "Elastic Modulus and Equilibrium Swelling of Near Critical Gels" by M. Rubinstein and R. H. Colby, *Macromolecules*, **27**, 3184-3190(1994).
68. "Memory Effects in Entangled Polymer Melts" by M. Rubinstein and S. P. Obukhov, *Phys. Rev. Lett.*, **71** 1856-1859 (1993).
69. "Dynamics of Near-Critical Polymer Gels" by R. H. Colby, J. R. Gillmor and Rubinstein, *Phys. Rev. E*, **48**, 3712-3716 (1993).

70. "Dynamics of Telechelic Ionomers. Can Polymer Diffuse Large Distances without Relaxing Stress?" by L. Leibler, M. Rubinstein and R. H. Colby, *J. Phys. II (France)*, **3**, 1581-1590 (1993).
71. "Scaling of Megabase DNA Undergoing Gel Electrophoresis" by S. P. Obukhov and M. Rubinstein, *J. Phys. II (France)*, **3**, 1455-1459 (1993).
72. "Chain Statistics in Adsorbed Polymer Solutions" by A. Johner, J. F. Joanny and Rubinstein, *Europhys. Lett.* **22**, 591-596 (1993).
73. "Reinforcement of Rubber by Fractal Aggregates" by T. A. Witten, M. Rubinstein and R. H. Colby, *J. Phys. II (France)* **3**, 367-383 (1993).
74. "Power-Law-Like Stress Relaxation of Block Copolymers: Disentanglement Regimes" by M. Rubinstein and S. P. Obukhov, *Macromolecules* **26**, 1740-1750 (1993).
75. "Slippage between a Rubber and a Grafted Solid" by M. Rubinstein, A. Ajdari, L. Leibler, F. Brochard-Wyart, P. G. de Gennes, *C. R. Acad. Sci. (Paris)* **316**, ser. II, 317-320 (1993).
76. "Scaling Properties of Branched Polyesters. 2. Static Scaling above the Gel Point" by R. H. Colby, M. Rubinstein, J. R. Gillmor and T. H. Mourey, *Macromolecules* **25**, 7180-7187 (1992).
77. "Giant Fluctuations of Cross-link Positions in Gels" by M. Rubinstein, L. Leibler and J. Bastide, *Phys. Rev. Lett.* **68**, 405-407 (1992).
78. "Comments on Fluctuations of Crosslinks in Gels" by M. Rubinstein, A. Ajdari, J. Bastide, and L. Leibler, *Makromolekulare Chemie, Macromolecular Symposia*, 62 (Polym. Thermodyn. Radiat. Scattering) 61-73 (1992).
79. "Unique Behavior of Dendritic Macromolecules: Intrinsic Viscosity of Polyether Dendrimers" by T. H. Mourey, S. R. Turner, M. Rubinstein, J. M. J. Frechet, C. J. Hawker, and K. L. Wooley, *Macromolecules* **25**, 2401-2406 (1992).
80. "Chain Entanglement in Polymer Melts and Solutions" by R. H. Colby, M. Rubinstein and J. L. Viovy, *Macromolecules* **25**, 996-998 (1992).
81. "Dynamics of Reversible Networks" by L. Leibler, M. Rubinstein and R. H. Colby, *Macromolecules* **24**, 4701-4707 (1991).
82. "Constraint Release in Polymer Melts: Tube Reorganization versus Tube Dilation" by J. L. Viovy, M. Rubinstein and R. H. Colby, *Macromolecules* **24**, (1991).
83. Reply to the Comment on "Topological Glass Transition in Entangled Flux State" by S. P. Obukhov and M. Rubinstein, *Phys. Rev. Lett.* **66**, 2279 (1991).
84. "Topological Glass Transition in Entangled Flux State" by S. P. Obukhov and M. Rubinstein, *Phys. Rev. Lett.* **65**, 1279-1282 (1990).
85. "Living Trees: Dynamics at a Reversible Classical Gel Point" by M. E. Cates, C. B. McLeish and M. Rubinstein, *J. Phys. C*, **2**, 749-754 (1990).
86. "Relaxation of Entangled Polymers at the Classical Gel Point" by M. Rubinstein, Zurek, T. C. B. McLeish and R. C. Ball, *J. Phys. (France)* **51**, 757-775 (1990).
87. "Two Parameter Scaling for Polymers in Theta Solvents" by R. H. Colby and M. Rubinstein, *Macromolecules* **23**, 2753-2757 (1990).
88. "Analysis of Multiscaling Structure in Diffusion Limited Aggregation: A Kinetic Renormalization-Group Approach" by X. R. Wang, Y. Shapir and M. Rubinstein, *Phys. Rev. A*, **39**, 5974-5984 (1989).

89. "Improved Kinetic Renormalization Group Approach to Diffusion Limited Aggregation" by X. R. Wang, Y. Shapir and M. Rubinstein, *J. Phys. A.* **22**, L507-L512 (1989).
90. "Kinetic Renormalization Group Approach to Diffusion Limited Aggregation" by X. Wang, Y. Shapir and M. Rubinstein, *Phys. Lett. A.* **138**, 274-278 (1989).
91. "Scaling Properties of Branched Polyesters" by E. V. Patton, J. A. Wesson, M. Rubinstein, J. C. Wilson and L. E. Oppenheimer, *Macromolecules* **22**, 1946-1959 (1989).
92. "Self-Consistent Theory of Polydisperse Entangled Polymers: Linear Viscoelasticity of Binary Blends" by M. Rubinstein and R. H. Colby, *J. Chem. Phys.* **89**, 5291-5306 (1988).
93. "Discretized Model of Entangled-Polymer Dynamics" by M. Rubinstein, *Phys. Rev. Lett.* **59**, 1946-1949 (1987) [Reviewed by J. Meddow, "New Ways with Reptating Polymers", *Nature* **330**, 11 (1987)].
94. "Theory of Polydispersity Effects on Polymer Rheology: Binary Distribution of Molecular Weights" by M. Rubinstein, E. Helfand and D. Pearson, *Macromolecules* **20**, 822-829 (1987).
95. "Dynamics of Ring Polymers in the Presence of Fixed Obstacles" by M. Rubinstein, *Phys. Rev. Lett.* **57**, 3023-3026 (1986).
96. "Statistics of Entanglements of Polymers: Concentration Effects" by M. Rubinstein and E. Helfand, *J. Chem. Phys.* **82**, 2477-2483 (1985).
97. "One-Dimensional Random Ising Ferromagnets and Antiferromagnets" by M. Ya. Azbel and M. Rubinstein, *Phys. Rev. B* **28**, 3793-3798 (1983).
98. "Resistance and Phase Diagram of Quasiperiodic Systems" by M. Ya. Azbel and M. Rubinstein, *Phys. Rev. B* **27**, 6530-6533 (1983).
99. "Boundary Resistance and Pseudolocalization in One-Dimensional Periodic Systems" by M. Rubinstein and M. Ya. Azbel, *Phys. Rev. B* **27**, 6484-6486 (1983).
100. "Phase Correlations in One-Dimensional Disordered Systems" by M. Ya. Azbel and M. Rubinstein, *Phys. Rev. Lett.* **51**, 836-839 (1983).
101. "Dense Packed Arrays on Surfaces of Constant Negative Curvature" by M. Rubinstein and D. R. Nelson, *Phys. Rev. B* **28**, 6377-6386 (1983).
102. "Two-Dimensional XY Magnets with Random Dzyaloshinskii-Moriya Interactions" by M. Rubinstein, B. Shraiman, and D. R. Nelson, *Phys. Rev. B* **27**, 1800-1811 (1983).
103. "Order and Deterministic Chaos in Hard Disk Arrays" by M. Rubinstein and D. R. Nelson, *Phys. Rev. B* **26**, 6254-6275 (1982).
104. "Order in Two-Dimensional Binary Random Arrays" by D. R. Nelson, M. Rubinstein and F. Spaepen, *Phil. Mag. A* **46**, 105-126 (1982).

Reviews

1. "Physical Chemistry of Polyelectrolytes. Surfactant Science Series. Volume 99." Edited by Tsetska Radeva (Bulgarian Academy of Sciences). Marcel Dekker, NY, Basel. (2001). *J Am Chem Soc*, **123**, p. 9928.
2. "Theoretical Challenges in Polymer Dynamics" by M. Rubinstein in *Theoretical Challenges in the*

Dynamics of Complex Fluids, edited by T. McLeish, NATO ASI Series E: Applied Sciences - Vol. 339, p. 21-51 [Kluwer Academic Publishers, 1997].

Conference Proceedings

1. Determination of Mass per Unit Length of Cylindrical Polystyrene-b-Polyisoprene Micelles Using AFM and Light Scattering” by I. LaRue, M. Adam, S. Sheiko and M. Rubinstein, *Polymeric Materials Science and Engineering*, **88**, 236-237 (2003).
2. “Theoretical Challenges in Polymer Dynamics” by M. Rubinstein in *Theoretical Challenges in the Dynamics of Complex Fluids*, edited by T. McLeish, NATO ASI Series E: Applied Sciences - Vol. 339, p. 21-51 [Kluwer Academic Publishers, 1997].
3. “Polymer Dynamics at Attractive Interface” by X. Zheng, M. H. Rafailovich, J. Sokolov, B. B. Sauer, J. G. Van Alsten , S. A. Schwarz and M. Rubinstein, *Polymer Preprints*, **36**, 156-157 (1995)
4. “Interface Reinforcement by Block Copolymers” by M. Rubinstein, L. Leibler and A. Ajdari, *Polymer Preprints*, **35**, 628-629 (1994).
5. “Dynamics of Block Copolymers” by M. Rubinstein and S. P. Obukhov, *Polymer Preprints* **34**, 680-681 (1993).
6. “Superelastic Networks” by S. P. Obukhov, M. Rubinstein and R. H. Colby, *ACS Polymeric Materials Science and Engineering* **68**, 234-235 (1993).
7. “Comments on Fluctuations of Cross-links in Gels” by M. Rubinstein, A. Ajdari, J. Bastide and L. Leibler, *Macromol. Chem., Macromol. Symp.* **62**, 61-73 (1992).
8. “Dynamics of Reversible Networks” by M. Rubinstein, L. Leibler and R. H. Colby, *Polymer Preprints* **32** (3), 443-444 (1991).
9. “Universality of the Irreversibility Line” by S. P. Obukhov and M. Rubinstein in *Physical Phenomena at High Magnetic Fields* p. 1-5 [Addison-Wesley Publishing Company, 1991].
10. “Dynamic Scaling for Polymer Gelation” by M. Rubinstein, R. H. Colby and J. R. Gillmor in *Space-Time Organization in Macromolecular Fluids*, edited by R. Tanaka, T. Ohta and M. Doi p. 66-74 [Springer-Verlag: Berlin (1989)].
11. “Repton Model of Entangled Polymers” by M. Rubinstein in *New Trends in Physics and Physical Chemistry of Polymers* edited by L. K. Lee p. 455-469 [Plenum: New York (1989)].
12. “Dynamic Scaling for Polymer Gelation” by M. Rubinstein, R. H. Colby and J. R. Gillmor, *Polymer Preprints* **30**, 81-82 (1989).
13. “Repton Model of Entangled Polymers” by M. Rubinstein, *Polymer Preprints* **29**, (1988).

Invited Lectures at Conferences

1. July 2006 IUPAC World Polymer Congress, the 41st International Symposium on Macromolecules, Macro 2006, Rio de Janeiro, Brazil
2. June 2006 New Physical Approaches to Molecular and Cellular Machines, KITP, Santa Barbara, CA
3. March 2006 231st ACS National Meeting, Atlanta, GA, “Self-Association of Block Polyampholytes”
4. October 2005 19th Annual North American Cystic Fibrosis Conference, *New Prospective on Mucus and Airway Surfaces*, Baltimore, MD
5. October 2005 GelSymo 2005 Polymer Gels: Fundamentals and Bio-science, Sapporo, Japan
6. September 2005 NIH workshop on *Host Response to Persistent Bacterial Load in Cystic Fibrosis*, Rockville, MD
7. September 2005 Lorentz Center workshop on Screening, *Charge Inversion and Condensation of Macroions*, Leiden, Netherlands, “Condensation of Hydrophobic Polyelectrolytes”.
8. April 2005 WE Heraeus Seminar on *Understanding the Self-Organization of Charged Polymers*, Physikzentrum Bad Honnef, Germany, “Self-Associations of Block Polyampholytes”
9. March 2005 American Physical Society March Meeting, Los Angeles, CA, “Entanglements and Elasticity of Polymer Networks”
10. February 2005 Gordon Research Conference on *Cilia, Mucus & Mucociliary Interactions*, Buelton, CA, “Physico-Chemical Model of Airway Surface Liquid”
11. August 2004 Symposium on *Polyelectrolytes and Polyampholytes: From Theory to Applications*: at the ACS 228th National Meeting, Philadelphia, PA, “Theoretical Models of Polyelectrolytes and Polyampholytes”
12. July 2004 IUPAC World Polymer Congress MACRO 2004, Paris, France, “Regimes of Electrostatic Association”
13. June 2004 International workshop on *Physics and Biology: a Materials Approach*, Paris, France, “Virtual Lung”
14. June 2004 International Symposium on Polymer Physics, Dali, China, “Scaling Model of Charged Polymers”
15. May 2004 Workshop on *Electrostatic Interactions in Polymers, Colloids and Biophysics*, Minneapolis, MN, “Block Polyampholytes”
16. November 2003 Third International Symposium on *Slow Dynamics in Complex Systems*, Sendai, Japan, “Gelling Transition of Hydrophobic Polyelectrolytes.”
17. August 2003 39th IUPAC Congress, Ottawa, Canada, Symposium on *Surface Phenomena in Polymers*, “Adsorption of Charged Polymers at Charged Surfaces”
18. July 2003 Gordon Research Conference on *Ion Containing Polymers*, Mount Holyoke, MA, “Theory of Hydrophobic Polyelectrolytes”

19. March 2003 American Physical Society March Meeting, Austin, Texas, “Scaling Theories and Computer Simulations of Polyelectrolyte Solutions.”
20. February 2003 CECAM Workshop on Polymer Dynamics, *Mesoscopic Modelling of Polymer Dynamics*, Lyon, France, “Dynamics of a Chain in an Array of Fixed Obstacles”
21. August 2002 Gordon Conference on *Science of Adhesion*, Tilton, NH. “Adsorption of Polyelectrolytes.”
22. July 2002 *Physics of Soft Condensed Matter*. Taught a mini-course consisted of 6 lectures at the Boulder School for Condensed Matter Physics, Boulder, CO. “Introduction to Polymer Physics.”
23. April 2002 *Dynamics of Complex and Macromolecular Fluids*, Institute for Theoretical Physics, Santa Barbara, CA: “Elasticity of Polymer Networks,”
24. February 2002 Gordon Research Conference on *Macromolecular, Colloidal and Polyelectrolyte Solutions*, Ventura, CA, “Adsorption of Charged Polymers.”
25. June 2001 4th International Discussion Meeting on *Relaxations in Complex Systems*, Crete, Greece, “Gelling Transition of Hydrophobic Polyelectrolytes.”
26. May 2001 “Electrostatic Interactions in Polymers, Colloids, and Biophysics,” Conference at the Theoretical Physics Institute, University of Minnesota, Minneapolis, MN.
27. February 2001 Symposium on *Associating Polymers and Surfactant Systems*, The Society of Rheology 72nd annual meeting, Hilton Head Island, SC: “Dynamics of Associating Polymers.”
28. December 2000 *Self-Assembly in Water-Soluble Polymers* – Symposium at Pacificchem 2000, Honolulu, Hawaii, “Self-assembly of Hydrophobically Modified Polyelectrolytes.”
29. November 2000 *Dynamics in Small Confining Systems* – Symposium at the Fall MRS Meeting, Boston, MA, “Glass Transition in Polymer Globules.”
30. July 2000 *Polyelectrolytes 2000*, Les Diablerets, Switzerland, “Adsorption of Polyelectrolytes at Oppositely Charged Surfaces.”
31. March 2000 Symposium on *Reversibly Associating Polymers: Applications to Synthetic & Biopolymers* at the APS March Meeting, Minneapolis, MN, “Dynamics of Entangled Solutions of Associating Polymers.”
32. February 2000 Gordon Research Conference on *Macromolecular, Colloidal and Polyelectrolyte Solutions*, Ventura, CA, “Solutions of Hydrophobic Polyelectrolytes”
33. August 1999 *Roy W. Tess Award in Coatings* Symposium at the ACS National Meeting, New Orleans, LO “Hydrophobically Modified Polyelectrolytes.”
34. August 1999 Symposium on *Polymeric Assembly and Association*, ACS National Meeting, New Orleans, LO “Solutions of Associated Polymers.”
35. May 1999 Pressure Sensitive Tape Council TECH XXII, Washington DC, “Effect of Block Copolymers on Interface Reinforcement and Adhesion.”
36. October 1998 ITP Conference on *Electrostatic Effects in Complex Fluids and Biophysics*, Santa Barbara, CA: “Adsorption of Polyampholytes.”
37. May 1998 Gordon Research Conference on *Complex Fluids*, Tuscany, Italy: “Adsorption of

- Polyampholytes.”
38. April 1998 International Conference on *Structured Polymer Systems: Self-Assemblies, Heteropolymers and Networks*, Bad Honnef, Germany: “Solutions of Associative Polymers.”
 39. October 1997 69th Annual Meeting of the Society of Rheology, Columbus, OH: “Elasticity of Polymer Networks.”
 40. October 1997 International Workshop *Understanding Polyelectrolytes*, Mainz, Germany “Dynamic Scaling of Semidilute Polyelectrolyte Solutions.”
 41. July 1997 Gordon Research Conference on *Organic Thin Films and Surfaces*, Newport, RI, “Adsorption of a Polyampholyte Chain on a Charged Surface.”
 42. July 1997 3rd International Discussion Meeting on *Relaxations in Complex Systems*, Vigo, Spain, “Relaxation of Associating Polymers.”
 43. June 1997 *Problems of Condensed Matter Theory*, Moscow Russia, “Cascade of Transitions of Polyelectrolytes in Poor Solvents.”
 44. May 1997 Workshop on *Polymers at Interfaces*, Garcia Center MRSEC, New York, NY, “Rubber Elasticity.”
 45. February 1997 Plenary Lecture at the 68-th Society of Rheology Meeting, Galveston, TX, “Dynamics of Charged Polymers.”
 46. January 1997 Symposium in the Honor of Jacques Bastide, ICS, Strasbourg, France, “Non-Affine Deformations in Entangled Networks.”
 47. June 1996 Workshop on *Topology and Geometry in Polymer Science*, IMA, Minneapolis, MN, “Non-Affine Deformations of Entangled Networks.”
 48. March 1996 NATO Advanced Study Institute *Theoretical Challenges in Complex Fluid Dynamics*, Cambridge, UK, three-lecture series on “Polymer Melt Dynamics.”
 49. March 1996 APS March Meeting, St. Louis, MO, “Solutions of Associative Polymers.”
 50. December 1995 International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, “Dynamics of Semidilute Polyelectrolyte Solutions.”
 51. December 1995 US/France Meeting on Polymers: *Ordering in Polymers*, Gainesville, Florida, “Elasticity and Order in Polymer Networks.”
 52. October 1995 Symposium on *Computer Modeling of Polymers*, at the Northeast Regional ACS Silver Anniversary Meeting, Rochester, NY, “Cascade of Transitions of Polyelectrolytes in Poor Solvent.”
 53. March 1995 Symposium on *Interfaces and Surfaces in the Rheology of Polymers: Polymer-Solid Interfacial Interaction and Slip*, ACS National Meeting, Anaheim, CA, “Polymer Dynamics at Attractive Interface.”
 54. January 1995 Polymers-West Gordon Research Conference, Ventura, CA, “Scaling Theory of Charged Polymers.”
 55. August 1994 Gordon Research Conference on *Science of Adhesion*, Tilton, NH, “Chain Pull Out and Polymer Adhesion.”

56. June 1994 Workshop on *Collective Phenomena in Polymers*, London, ON, Canada, “Scaling Theory of Polyelectrolyte Solutions.”
57. March 1994 Symposium on *Block Copolymer Dynamics*, ACS National Meeting, San Diego, CA, “Interface Reinforcement by Block Copolymers.”
58. August 1993 Symposium on *Recent Advances on the Synthesis and Characterization of Block and Graft Copolymers*, ACS National Meeting, Chicago, IL, “Dynamics of Block Copolymers.”
59. March 1993 Symposium on *Elastomers*, ACS National Meeting, Denver, CO, “Superelastic Networks.”
60. December 1992 Society of Polymer Science of Japan 4th International Polymer Conference, Yokohama, Japan, “Dynamics of Block Copolymers.”
61. May 1992 *Recent Developments in Ionomers*, Interdisciplinary Workshop, Pacific Grove, CA, “Dynamics of Reversible Networks.”
62. January 1992 Polymers-West Gordon Research Conference, Ventura, CA, “Dynamics of Block Copolymers.”
63. September 1991 *Polymer Modeling on High Performance Computers*, National Center for Supercomputing Applications, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign, IL, “Computer Simulations of Polymers.”
64. August 1991 Joint ACS/APS Symposium on *Thermoreversible Gelation of Polymers*, New York ACS Meeting in Conjunction with the Fourth Chemical Congress of North America, “Dynamics of Reversible Networks.”
65. August 1991 Workshop on “*Critical Phenomena and Related Problems in Polymer Physics*,” Peterborough, Canada, “Sol-Gel Transition.”
66. June 1991 International School-Seminar on *Modern Problems of Physical Chemistry of Macromolecules*, Puschino, USSR, “Dynamics of Block Copolymers.”
67. March 1991 APS March Meeting, Cincinnati, OH, “Giant Fluctuations of Crosslink Positions in Gels.”
68. December 1989 MRS Fall Meeting, Boston, MA, “Dynamics of Polymer Gelation.”
69. April 1989 ACS Meeting, Dallas, TX, “Dynamic Scaling for Polymer Gelation.”
70. January 1989 Polymers-West Gordon Research Conference, Ventura, CA, “Scaling Properties of Gel Forming Systems.”
71. November 1988 11th Taniguchi Symposium on *Space-Time Organization of Macromolecules*, Hakone, Japan, “Dynamics of Entangled Polymers.”
72. July 1988 Polymers Gordon Research Conference, New London, NH, “Discretized Version of the Reptation Model of Entangled Polymer Dynamics.”
73. June 1988 International Symposium on *New Trends in Physics and Physical Chemistry of Polymers* honoring Professor P. G. de Gennes, Toronto, ON, “Repton Model of Entangled Polymers.”
74. August 1987 Conference on *Polymer Melt Dynamics* at Michigan Molecular Institute, Midland,

MI, "Dynamics of Entangled Polymers."

75. June 1987 Rochester Condensed Matter Symposium, Rochester, NY, "Dynamics of Entangled Polymers."

Contributed:

1. March 1999 Centennial Meeting of the American Physical Society, Atlanta, GA: "Hydrophobic Polyelectrolytes," A. Dobrynin and M. Rubinstein.
2. March 1999 Centennial Meeting of the American Physical Society, Atlanta, GA: "Adsorption of Polyelectrolytes," A. Deshkovski, A. Dobrynin, and M. Rubinstein.
3. March 1999 Centennial Meeting of the American Physical Society, Atlanta, GA: "Adsorption of Polyampholytes on a Charged Surface," A. Dobrynin, M. Rubinstein, and S. P. Obukhov.
4. August 1998 216th National meeting of the American Chemical Society, Boston MA: "Adsorption of Polyampholytes on a Charged Surface," A. Dobrynin, M. Rubinstein, and J-F. Joanny.

Invited Lectures at Universities and Research Laboratories

1. May 2006 Chemistry Department, University of California at Los Angeles, CA
2. May 2006 Physics Department, University of California at Los Angeles, CA
3. November 2005 Princeton University, Princeton, NJ
4. November 2005 Georgia Institute of Technology, Atlanta, GA
5. September 2005 Delft University of Technology, Delft, Netherlands
6. July 2004 Complex Fluids Laboratory, CNRS/Rhodia, Cranbury, NJ
7. June 2004 Institute of Chemistry, Chinese Academy of Sciences, Beijing, China
8. May 2004 Chinese University of Hong Kong, Hong Kong, China
9. May 2004 Research Laboratories, Cabot Corporation, Billerica, MA
10. October 2003 Atlanta Area Chemical Physics Symposium, Emory University and Georgia Institute of Technology, Atlanta, Georgia
11. September 2003 Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, OH
12. May 2003 School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY
13. April 2003 Department of Materials Sciences and Engineering, MIT, Cambridge, MA
14. April 2003 Department of Chemical Engineering, California Institute of Technology, Pasadena, CA
15. March 2003 Department of Chemistry, Virginia Polytechnic Institute and State University, Blacksburg, VA
16. September 2002 Chemistry Department, University of Texas, Austin, TX
17. May 2002 Materials Department, University of California, Santa Barbara, CA
18. October 2001 McGill Chemical Society, Montreal, PQ, Canada
19. July 2001 Department of Materials Science, SUNY, Stony Brook, NY
20. June 2001 Cabot Corporation, Billerica, MA
21. November 2000 Department of Chemistry, Purdue University, Indianapolis, IN
22. October 2000 Department of Chemistry, University of Wisconsin, Madison, WI
23. October 2000 Department of Materials Science, Penn State University, University Park, PA
24. July 2000 Beiersdorf AG, Hamburg, Germany
25. June 2000 Max Planck Institute Polymerforsch, Mainz, Germany
26. June 2000 Department of Physics, University of Freiburg, Germany
27. February 2000 Closure Medical Corporation, Raleigh, NC.

28. October 1999 Department of Chemical Engineering, Columbia University, New York, NY.
29. March 1999 Department of Chemical Engineering, North Carolina State University, Raleigh, NC: “Electrostatic Interactions in Polymeric Systems.”
30. March 1999 Eastman Kodak Company, Rochester, NY “Long-range Polyampholyte Adsorption on a Charged Surface.”
31. March 1999 Department of Physics, University of Minnesota, Minneapolis, MN “Electrostatic Interactions in Polymeric Systems.”
32. February 1999 Polymer Science and Engineering Department, University of Massachusetts, Amherst, MA: “Long-range Polyampholyte Adsorption on a Charged Surface.”
33. October 1998 Department of Chemistry, Clemson University, Clemson, SC
34. August 1998 Kodak Research Laboratories, Rochester, NY
35. June 1998 Departement de Physique, Ecole Normale Superieure, Paris, France
36. June 1998 Department of Physics, University of Ulm, Ulm, Germany
37. June 1998 Institut Charles Sadron, Strasbourg, France
38. May – June 1998 Four lectures at College de France, Paris, France
39. May 1998 Institut Laue-Langevin, Grenoble, France
40. May 1998 Departement de Physique, Ecole Normale Superieure, Paris, France
41. April 1998 Department of Physics, University of Freiburg, Freiburg, Germany
42. August 1997 Kodak Research Laboratories, Rochester, NY
43. June 1997 Institute of Macromolecular Compounds, Academy of Sciences of Russia, St. Petersburg, Russia
44. November 1995 Research Laboratories, Rahm and Haas, Spring House, PA
45. September 1994 Department of Chemical Engineering, John Hopkins University, Baltimore, MD
46. June 1994 College de France, Paris, France
47. June 1994 Institut Charles Sadron, Strasbourg, France
48. May 1994 Groupe de Physico-Chimie Theorique, ESPCI, Paris, France
49. March 1994 Dow Lecture in Polymer Science at Department of Chemistry, University of Detroit Mercy, Detroit, MI
50. February 1994 School of Natural Sciences, Institute for Advanced Study, Princeton, NJ
51. October 1993 Department of Chemistry, University of North Carolina, Chapel Hill, NC.
52. October 1993 Department of Chemical Engineering, North Carolina State University, Raleigh, NC.
53. June 1993 Department of Physics, Moscow State University, Moscow, Russia
54. March 1993 Department of Physics, University of Florida, Gainesville, FL
55. December 1992 Department of Macromolecular Science, Osaka University, Osaka, Japan
56. October 1992 Laboratoire Leon Brillouin, CEN Saclay, France

57. October 1992 Groupe de Physico-Chimie Theorique, ESPCI, Paris, France
58. June 1992 Department of Chemistry, McGill University, Montreal, Canada
59. June 1991 Institute of Chemical Physics, USSR Academy of Sciences, Moscow, USSR
60. June 1991 Department of Physics, Moscow State University, Moscow, USSR
61. February 1991 Department of Chemistry, Cornell University, Ithaca, NY
62. October 1990 Institut Charles Sadron, Strasbourg, France
63. October 1990 Laboratoire Leon Brillouin, CEN Saclay, France
64. September 1990 Groupe de Physico-Chimie Theorique, ESPCI, Paris, France
65. May 1990 Department of Physics, University of Florida, Gainesville, FL
66. April 1990 Polymer Education and Research Center, Georgia Institute of Technology, Atlanta, GA
67. February 1989 Corporate Research Science Laboratory, Exxon Research and Engineering Company, Annandale, NJ
68. November 1988 Department of Physics, Boston University, Boston, MA
69. March 1988 Groupe de Physico-Chimie Macromoleculaire, ESPCI, Paris, France
70. March 1988 Physics Department, Technion, Haifa, Israel
71. March 1988 Polymer Department, Weizmann Institute of Science, Rehovot, Israel
72. February 1988 Polymer Science and Engineering Department, University of Massachusetts, Amherst, MA
73. May 1987 Department of Physics, Clarkson University, Potsdam, NY
74. April 1987 Materials Research Laboratory, University of Illinois, Urbana, IL
75. March 1987 Chemical Engineering Department, Northwestern University, Evanston, IL
76. October 1986 Department of Physics, Harvard University, Cambridge, MA
77. January 1986 Department of Material Science and Engineering, Cornell University, Ithaca, NY
78. September 1985 Department of Physics and Astronomy, University of Rochester, Rochester, NY
79. March 1985 Research Laboratories, Eastman Kodak Company, Rochester, NY
80. March 1985 Naval Research Laboratories, Washington, DC
81. March 1985 Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, MA
82. February 1985 Department of Physics, Pennsylvania State University, University Park, PA
83. February 1985 Department of Physics, Carnegie-Mellon University, Pittsburgh, PA
84. January 1985 Schlumberger-Doll Laboratory, Ridgefield, CT
85. January 1985 Department of Physics, California Institute of Technology, Pasadena, CA
86. December 1984 National Bureau of Standards, Gaithersburg, MD
87. December 1984 Department of Physics, Columbia University, New York, NY

- 88. November 1984 GTE Laboratories, Waltham, MA
- 89. March 1983 AT&T Bell Laboratories, Murray Hill, NJ
- 90. February 1983 Department of Physics, University of Sherbrook, Sherbrook, Canada