

EDWARD T. SAMULSKI
Cary C. Boshamer Professor

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6/2010

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Education: B.S., Clemson University, 1965

Ph.D., Princeton University, 1970

Professional Positions

- 1994 - Cary C. Boshamer Professor of Chemistry (endowed chair), UNC- CH
- 2005 - 2006 Jefferson Science Fellow, US Department of State
<http://www.chem.unc.edu/news/samulski.html>
- 2002 - Co-Director of NASA Institute on Biologically Inspired Materials (BIMat)
<http://bimat.princeton.edu/html/team.html>
- 2002 - International Board of the MacDiarmid Institute for Advance Materials and Nanotechnology
<http://www.macdiarmid.ac.nz/>
- 1995 - 2000 Chair, Department of Chemistry, University of North Carolina
- 1988 to date Professor, Department of Chemistry, University of North Carolina
- 1981 - 1988 Professor, University of Connecticut, Storrs
- 1985 - 1986 Science & Engineering Research Council Senior Visiting Fellow,
Cavendish Lab, Cambridge University
- 1984 January Visiting Professor, Weizmann Institute of Science; Rehovot, Israel
- 1982 January Visiting Scientist, IBM Research Labs, San Jose, CA
- 1975 - 1981 Associate Professor, University of Connecticut, Storrs
- 1979 Jan.-Oct. Visiting Professor, Weizmann Institute of Science; Rehovot, Israel
- 1978 June-Dec Visiting Professor, Laboratory of Solid State Physics, University of
Paris (Sud); Orsay
- 1972 - 1975 Assistant Professor, University of Connecticut, Storrs
- 1971 - 1972 Postdoctoral Fellow, University of Texas; Austin (with Chas. G. Wade)
- 1969 - 1970 NIH Postdoctoral Fellow, University of Groningen; The Netherlands (with H. Berendsen)
- 1967 summer Allied Chemical Corporation; Morristown, New Jersey
- 1965 summer E. I. DuPont de Nemours Company, Savannah River Laboratory; Aiken, SC

Honors

- 2006 Thomas Green Clemson Academy of Engineers and Scientists
- 2005 Thomas Jefferson Science Fellowship, US Department of State
- 1997 Chair Polymer Gordon Conference, Ventura, California
- 1995 Simon Guggenheim Fellow (Massey University, New Zealand)
- 1994 Stone Award of the Carolina Piedmont Section of the ACS (Southeast Region)
- 1994 Cary C. Boshamer Professor of Chemistry (endowed chair)
- 1992 Fellow of American Association for the Advancement of Science
- 1992 Fellow of the American Physical Society
- 1990 Chair, Committee on Liquid Crystalline Polymers, NMAB, National Academy of Sciences
- 1985-1986 Science & Engineering Research Council Senior Visiting Fellow,
Cavendish Lab, Cambridge University
- 1985 Plenary Lecture, Faraday Discussion on Liquid Crystalline Polymers
- 1985 Founding Editor (with G. R. Luckhurst) of the journal *LIQUID CRYSTALS*
- 1978 Chairman, Gordon Conference on Liquid Crystals, Santa Barbara, Calif.
- 1976 President, University of Connecticut chapter of Sigma Xi
- 1973 University of Connecticut Faculty Summer Fellowship
- 1971 - 1972 NIH and Robert Welch Postdoctoral Fellow
- 1965 - 1969 Textile Research Institute Fellow, Princeton University
- 1961 - 1965 Leon Lowenstein Scholar, Clemson University

Graduate Students: (30 PhD; 7 MS)

- 1976 Ph.D. "Synthesis of Poly(substituted tetrathiafulvalenes)"; **N.G. Demetriadis**
- 1978 Ph.D. "The Molecular Morphology of Polyethylene via Nuclear Magnetic Resonance";
K. M. Natarajan
- 1978 Ph.D. "Excimer Fluorescence in Synthetic Polypeptides"; **J. T. Chapin**
- 1978 M.S. "Synthesis and Nuclear Magnetic Resonance Study of Selectively Deuterated
Poly(benzyl-L-glutamate)"; **J. H. Kwiatkowski**
- 1978 Ph.D. "Synthesis and Characterization of Thermotropic Polymeric Liquid Crystals";
R. Wiercinski
- 1982 Ph.D. "X-Ray Diffraction Study of Synthetic Polypeptides"; **J. A. Lefelar**
- 1984 Ph.D. "Macromolecular dynamics in Liquid Crystals and Isotropic Melts;" **L. P. Yu**

- 1986 Ph.D. "Deuterium NMR Studies of Oriented Fluid Polymers;" **A. I. Nakatani**
- 1986 Ph.D. "Effects of Pressure on Polymeric Liquid Crystals;" **B. Hsiao**
- 1986 Ph.D. "Mesogen Structure and Novel Liquid Crystals;" **M. Poliks**
- 1986 Ph.D. "Rodlike Superionic Conducting Polymers;" **Y. W. Park**
- 1990 Ph.D. "Thiophene-based Liquid Crystalline Polymers"; **R. Cai**
- 1990 M.S. "Self-assembly of helices on gold," **K. Mar**
- 1991 Ph.D. "Gel formation in poly(benzyl-L-glutamate) and benzyl alcohol," **J. G. L. Pluyter**
- 1991 Ph.D. "NLO-active polypeptide derivatives: SHG study of films from lyotropic phases"; **M.Y. Jin**
- 1993 Ph.D. "2,5-Thiophene-based liquid crystalline poly(amide)s, poly(arylene ether ketone)s, and poly(benzamidazole)s"; **S. Stoppel**
- 1993 M.S. "Preparation of CdS Nanocrystals within an Ordered Polypeptide Matrix" **E. J. Nelson**
- 1993 Ph.D. "α-Helical polypeptide monolayers" **E. P. Enriquez**
- 1995 Ph.D. "Orientation in block copolymers and fibers" **Julie Hutchinson**
- 1995 Ph.D. "Nonlinear Optical Phenomena in Polymers and Liquid Crystals" **Hanlin Wang** (joint w Jarnagin)
- 1995 M.S. "Synthesis of NLO-active Liquid Crystals" **Yalie Liu**
- 1998 Ph.D. "New all-aromatic Liquid Crystalline Polymers" **Theo Dingemans**
- 1998 Ph.D. "Rigid Rodlike NLO-active polymers" **Darlene K. Taylor**
- 1999 M.S. "Substrates for Combinatorial Synthesis" **Kelley Boyle**
- 2000 M.S. "Nonlinear Liquid Crystals" **Tim Dunkin**
- 2000 M.S. "Structure-Property Relations in Liquid Crystals" **Liang Hong**
- 2000 Ph.D. "Characterization of Polymers and Amphiphiles in Dense CO₂" **Jim McClain** (joint w DeSimone)
- 2003 Ph.D. "Fluorocarbon-carbon dioxide interactions via F-19 NMR" **Clarence Murray**
- 2006 Ph.D. "Nanostructures from templates" **Lei Zhang**
- 2006 Ph.D. "Intercalation of clay with CO₂" **Qian Zhao**
- 2006 Ph.D. "Anchoring liquid crystals on substrates" **Joette Russell**
- 2004 M.S. "PDMS networks via deuterium NMR" **Danna O'Leary Knott**
- 2008 Ph.D. "Fluoropolymer composites" **Jinron Liu** (joint with Asby)
- 2008 Ph.D. "New mesogen architectures" **Nick Zafiroplous** (joint with Lin)
- 2010 Ph.D. "Nanopatterning with PFPE elastomers: Materials and photovoltaic applications" **Stuart Williams** (joint with DeSimone)
- 2010 Ph.D. "Liquid Crystal Alignment on Embossed Polymer Films" **Walter Schenk**
- 2010 Ph.D. "Photronic Crystal Structure in Photovoltaic Cells" **Do Hyun Ko**
- 2009- Ph.D. "Patterning Metals" **Myoung Rhul Ko**

Postdoctoral Research Associates and Visiting Collaborators:

- 1974-6 Dr. H. T. Edzes (University of Groningen; The Netherlands)
- 1977 Dr. N. G. Demetriadis (University of Connecticut)

1979	Dr. K. Czarniecka (Jagiellonian University; Poland)
1980	Dr. B. Deloche (University of Paris; Orsay, France)
1981-3	Dr. H. Toriumi (Tokyo Institute of Technology; Japan)
1985-6	Dr. B. Janik (Jagiellonian University; Cracow, Poland)
1989	Dr. C. Vieth (MIT)
1989-90	Dr. H. Toriumi (Univ. Tokyo)
1989	Dr. J. Fukasawa (KAO Corp.)
1989-95	Dr. C-D. Poon (Univ. Oklahoma)
1989--	Professor D. Photinos (Univ. Patras, Greece)
1992	Dr. H. Duk (UNC Chapel Hill)
1992-3	Dr. R. Scott Archibald (Univ. Wisconsin) [joint with J. DeSimone]
1993-4	Dr. Jun-Lin (Univ. Penn./Univ. Texas) [joint with J. DeSimone]
1994-7	Dr. Yuhua Li (Clemson University)
1994-5	Dr. Andreas Terzis (Univ. Patras, Greece)
1995-6	Dr. Klaus Semmler (Univ. Freiburg)
1995-7	Dr. A. Dardin (Univ. Mainz) [joint with J. DeSimone]
1995-6	Dr. A. Chen (UNC Chapel Hill)
1997-9	Dr. Sueng Kang (KIST)
1998	Professor Zeev Luz (Weizmann Institute)
1998-9	Dr. Etshushi Nishikawa (Freiburg University)
1999	Professor Craig Eccles (Massey University)
2000	Dr. Christoph Wutz (Darmstadt)
2000 - 01	Dr. Chad Booth (Univ. So. Miss.)
2000 -	Dr. Bin Cheng (Univ. Sci. & Tech. China)
2001	Dr. Jirakorn Thisayukta (Tokyo Inst. Tech.)
2002 -6	Dr. Louis Madsen (Cal. Tech.)
2003	Professor E-Joon Choi (Kumoh Nat'l Inst. Tech., Korea)
2003 - 4	Dr. Wensheng Shi (City Univ. Hong Kong)
2006	Professor Eric Scharrer (sabbatic leave; Univ. Puget Sound)
2006	Professor Young W. Park (sabbatic leave Yeongsang national University)
2007-	Dr. Yongchao Si (Univ. Connecticut)
2007-8	Dr. Lei Zhang (UNC Chapel Hill)
2009-	Dr. Agata Klebowska (Univ. Warsaw)
2010-	Dr. Abay Dinku (Linköping University, Institute of Technology, Sweden)

Publications

Refereed Journal Articles (207)

“Some Ethoxides of Neptunium”, E. T. Samulski and D. G. Karraker, *J. Inorganic and Nuclear Chemistry* **29**, 993-999 (1967).

“Solid ‘Liquid Crystal’ Films of Poly(Benzyl-L-Glutamate)”, E. T. Samulski and A. V. Tobolsky, *Nature* **216**, 997-999 (1967).

“Some Unusual Properties of Poly(Benzyl-L-Glutamate) Films Cast in Strong Magnetic Fields”, E. T. Samulski and A. V. Tobolsky, *Macromolecules* **1**, 555-557 (1968).

- “The Liquid Crystal Phase of Poly(Benzyl-L-Glutamate) in Solution and in the Solid State”, E. T. Samulski and A. V. Tobolsky, *Molecular Crystals & Liquid Crystals* **7**, 433-42 (1969).
- “Energy Transients in Harmonic Oscillator Systems”, I. L. Hopkins, E. T. Samulski, and A. V. Tobolsky, *American Journal of Physics* **38**, 226-235 (1970).
- “Solid ‘Liquid Crystalline’ Films of Synthetic Polypeptides: A New State of Matter”, E. T. Samulski and A. V. Tobolsky, *Pure and Applied Chemistry* **23**, 145-150 (1970).
- “Cholesteric and Nematic Structures of Poly(Benzyl-L-Glutamate)”, E. T. Samulski and A. V. Tobolsky, *Liquid Crystals and Ordered Fluids*, 111-121 (1970) (Plenum).
- “Distorted α -Helix for Poly(Benzyl-L-Glutamate) in the Nematic Solid State”, E. T. Samulski and A. V. Tobolsky, *Biopolymers* **10**, 1013-1019 (1971).
- “Brownian Motion Contribution to Relaxation in Nematic Liquid Crystals”, E. T. Samulski, C. R. Dybowski, and C. G. Wade, *Chem. Phys. Letters* **11**, 113-116 (1971).
- “Proton, Deuteron and Nitrogen Resonance of Dimethylformamide in Nematic Polypeptide Liquid Crystal”, E. T. Samulski and H. J. C. Berendsen, *J. Chem. Phys.* **56**, 3920-3928 (1972).
- “Frequency Sweep Adiabatic Fast Passage on the Varian HA-100”, M. Chien, E. T. Samulski, and C. G. Wade, *Review of Scientific Instruments* **43**, 1830-1832 (1972).
- “Inter- and Intramolecular Contributions to Proton Relaxation in Liquid Crystals”, E. T. Samulski, C. R. Dybowski, and C. G. Wade, *Phys. Rev. Letters* **29**, 340-344 (1972).
- “Controlled Release of Herbicides: Theory”, R. L. Collins, S. Doglia, E. T. Samulski and R. A. Mazak, *J. Weed Science Society of America* **21**(1), 1-5 (1973).
- “Nuclear Magnetic Resonance Relaxation Study of Poly(Benzyl-L-Glutamate) Side-Chain Mobility in Helix-Coil Transition”, M. Chien, E. T. Samulski, and C. G. Wade, *Macromolecules* **6**(4) 638-642 (1973).
- “Intermolecular and Intramolecular Contributions to Proton Relaxation in Liquid Crystals”, E. T. Samulski, C. R. Dybowski, and C. G. Wade, *Molecular Crystals & Liquid Crystals* **22**, 302-315 (1973).
- “NMR Free Induction Decay and Spin Echoes in Oriented Model Membrane Bilayers”, E. T. Samulski, B. A. Smith, and C. G. Wade, *Chem. Phys. Letters* **20**, 167-169 (1973).
- “Supramolecular Structural Transitions in Polypeptide Solutions: NMR Study”, W. A. Hines and E. T. Samulski, *J. Polymer Science* **C44**, 11-17 (1973).
- “Nuclear Magnetic Resonance Spin-Lattice Relaxation in the Lyotropic Polypeptide Liquid Crystal”, W. A. Hines and E. T. Samulski, *Macromolecules* **6**(5), 793-795 (1973).
- “Nuclear Magnetic Resonance in Polypeptide Liquid Crystals”, W. A. Hines and E. T. Samulski, *Liquid Crystals & Ordered Fluids* **2**, 257-266 (1974).
- “Polypeptide Liquid Crystals: Magnetic Susceptibility, Twist Elastic Constant, Rotational Viscosity Coefficient, and Poly(Benzyl-L-Glutamate) Sidechain Formation”, C. G. Sridhar, W. A. Hines, and E. T. Samulski, *J. Chem. Phys.* **61**(3), 947-953, (1974).
- “Diffusion in Oriented Lamellar Phases by Pulsed NMR”, M. Chien, E. T. Samulski, B. A. Smith, and C. G. Wade, *Proceedings of the 3rd Symposium on Ordered Fluids and Liquid Crystals, Advances in Chemistry Series* **2**, (1974) (Plenum).
- “Polypeptide Sidechain Secondary Structure and the Helix-Coil Transition: An NMR Study”, E. T. Samulski, M. Chien, and C. G. Wade, *J. Polymer Science* **C46**, 335-340 (1974).

- “Polypeptide Liquid Crystals: Dimagnetic Anisotropy, Twist Elastic Constant and Rotational Viscosity Coefficient”, C. Guha, W. A. Hines, and E. T. Samulski, *Journal de Physique* **C1**, 269-272 (1975).
- “Poly(Benzyl-L-Glutamate) Helix-Coil Transition. Pretransition Phenomena in the Liquid Crystal Phase”, R. W. Duke, D. B. DuPre, W. A. Hines, and E. T. Samulski, *J. Amer. Chem. Soc.* **98**, 3094-3101 (1976).
- “Order Parameter Measurements in Polypeptide Liquid Crystals”, S. Murthy, J. R. Knox, and E. T. Samulski, *J. Chem. Phys.* **65**, 4835-4839 (1976).
- “Temperature Dependence of Order Parameter in Polypeptide Liquid Crystals”, R. W. Duke, D. B. DuPre, and E. T. Samulski, *J. Chem. Phys.* **67**, 824-830 (1977).
- “Design and Synthesis of Poly(Substituted)Tetrathiafulvalene Precursors”, N. G. Demedtriadis, S. J. Huang, and E. T. Samulski, *Tetrahedron Letters* **26**, 2223 (1977).
- “Van der Waals-Lifshitz Forces in Liquid Crystals; Origin of Cholesteric Structure” T. V. Samulski and E. T. Samulski, *J. Chem. Phys.* **66**, 2748 (1977).
- Effect of Trifluoroacetic Acid on the Viscoelastic Properties of Polypeptide Liquid Crystals”, R. W. Duke, D. B. DuPre, W. A. Hines, and E. T. Samulski, *Molecular Crystals & Liquid Crystals* **40**, 247-259 (1977).
- “Spin Diffusion and Cross Relaxation in the Proton NMR of Hydrated Collagen”, H. T. Edzes and E. T. Samulski, *Nature* **265**, 521-522 (1977).
- The Determination of the Orientational Distribution Function in Liquid Crystals by the Depolarization of Fluorescence of Probe Molecules”, L. L. Chapoy, D. B. DuPre, and E. T. Samulski, *Liquid Crystals and Ordered Fluids* **3**, 177-189 (1978) (Plenum).
- “Molecular Morphology of Polyethylene Determined By NMR”, R. Cukier, K. Natarajan, and E. T. Samulski, *Nature* **275**, 527-530 (1978).
- “The Measurement of Cross Relaxation Effects in the Proton NMR Spin-Lattice Relaxation of Water in Biological System: Hydrated Collagen and Muscle”, H. T. Edzes and E. T. Samulski, *J. Magnetic Resonance* **31**, 207-229, (1978).
- “Sidechain Order Parameters Via D NMR in Polypeptide Liquid Crystals”, E. T. Samulski, *J. de Physique Colloq.* **40(C3)**, C-471-475 (1979).
- “Lyotropic Nematics: Molecular Aggregation and Susceptibilities”, J. Charvolin and E. T. Samulski, *J. de Physique Lettres* **40**, L-587-592 (1979).
- “Polypeptide Liquid Crystals: A D NMR Study”, K. Czarniecak and E. T. Samulski, *Molecular Crystals and Liquid Crystals* **63**, 205-214 (1980).
- “Constrained Chain Statistics: D NMR of Octane in a Nematic Solvent”, E. T. Samulski, *Ferroelectrics: Proceedings of the International Symposium on the Statistical Mechanics of Phase Transitions in Polymers*, Case Western University, 11-13 June 1980, **30**, 83-93.
- “Excimer Fluorescence in Synthetic Polypeptides”, E. T. Samulski and J. T. Chapin, *Polymer Preprints* **21**, 67-81 (1980).
- “D NMR Investigation of the Blue Phase of Cholesterol Esters”, Z. Luz and E. T. Samulski, *J. Chem. Phys.* **73**, 142-147 (1980).
- “Deuterium NMR and Molecular ordering in the Cholesterol Alkanoate Mesophases”, Z. Luz, R. Poupko, and E. T. Samulski, *J. Chem. Phys.* **74**, 5825-5837 (1981).
- “Short-range, Nematic-like Orientational Order in Strained Elastomers: A Deuterium Magnetic Resonance Study”, B. Deloche and E. T. Samulski, *Macromolecules* **14**, 575-581 (1981).

- "Orientational Ordering of Flexible Mesogenic Molecules", R. Y. Dong and E. T. Samulski, *Molec. Cryst. & Liq. Cryst. Lett.* **82**, 73-79 (1982).
- "Chain Ordering and Molecular Orientational Ordering in Liquid Crystals", E. T. Samulski and R. Y. Dong, *J. Chem. Phys.* **77**, 5090-5096 (1982).
- "Anisotropic Dispersion Interactions in Liquid Crystals", H. Toriumi and E. T. Samulski, *Mol. Cryst. & Liq. Cryst.* **101**, 163-173 (1983).
- "Alkyl Chain Flexibility in Discotic Columnar Mesophases", E. T. Samulski and H. Toriumi, *J. Chem. Phys.* **79**, 5194-5199 (1983).
- "Alkyl Chain Flexibility in Liquid Crystals", E. T. Samulski, *Israel J. Chemistry* **23**, 329-339, (1983).
- "Lyotropic Polymeric Liquid Crystals", E. T. Samulski and D. B. DuPre, *J. de Chimie-Physique* **80**, 25-30 (1983).
- "Sidechain Conformation in Poly(Phenethyl-L-Glutamate)", J. A. Lefelar, J. R. Knox, and E. T. Samulski, *Biopolymers* **22**, 1071-1086 (1983).
- "Reptation versus Tube Renewal in Polymer Melts", B. A. Smith, L.-P. Yu, E. T. Samulski and M. Winnik, *Phys. Rev. Lett.* **52**, 45-48 (1984).
- "Alkyl Chain Order in a Linear Polymeric Liquid Crystal", E. T. Samulski, M. M. Gauthier, R. B. Blumstein and A. Blumstein, *Macromolecules* **17**, 479-483 (1984).
- "Ionenomeric Liquid Crystals", L.-P. Yu and E. T. Samulski, *Ordered Fluids & Liquid Crystals* **4**, 697-704 (1984) Plenum.
- "Alkyl Chain Flexibility in Liquid Crystals", H. Toriumi and E. T. Samulski, *Ordered Fluids & Liquid Crystals* **4**, 597-613 (1984) Plenum.
- "Rheological Properties of a Thermotropic Liquid Crystalline Polyester", A. Bickle, M. T. Shaw and E. T. Samulski, *J. Rheology* **28**, 647-652 (1984).
- "Investigations of Polymer Chains in Oriented Fluid Phases with Deuterium Nuclear Magnetic Resonance", E. T. Samulski, *Polymer* **26**, 177-189 (1985).
- "Solvent versus Segment Orientation in Strained Swollen Elastomeric Networks", H. Toriumi, B. Deloche, J. Herz and E. T. Samulski, *Macromolecules* **18**, 304-305 (1985).
- "Dimer versus Polymer Liquid Crystals: Alkyl Chain Flexibility via Deuterium NMR", A. C. Griffin and E. T. Samulski, *J. Am. Chem. Soc.* **107**, 2975-2976 (1985).
- "Polymer Diffusion in Molten Poly(propylene oxide)", B. A. Smith, E. T. Samulski, L.-P. Yu and M. A. Winnik, *Macromolecules* **18**, 1901-1905 (1985).
- "Magnetically Oriented Solutions", E. T. Samulski, *Science* **234**, 1424 (1986).
- "Concentration Dependence of the Diffusion of Poly(propylene oxide) in the Melt", B. A. Smith, S. J. Mumby, E. T. Samulski and L.-P. Yu, *Macromolecules* **19**, 470-472 (1986).
- "Three-Dimensional Order in Magnetically Oriented Poly(benzyl-L-glutamate) Films", N. S. Murthy, E. T. Samulski and J. R. Knox, *Macromolecules* **19**, 941-942 (1986).
- "Temperature Dependence of the Diffusion Coefficient of Poly(propylene oxide) in the Undiluted State", S. J. Mumby, B. A. Smith, E. T. Samulski, L.-P. Yu and M. A. Winnik, *Polymer* **27**, 1826-1828 (1986).
- "Deuterium NMR Studies of Polypeptides I. Sidechain Orientation in Poly(benzyl-L-glutamate) and the Mechanism of the Cholesteric Sense Inversion", H. Toriumi, T. Yamazaki, A. Abe and E. T. Samulski, *Liquid Crystals* **1**, 86-95 (1986).

- "Synthesis and Characterization of Liquid Crystalline Alkylisocyanate Copolymers", B. Durairaj, E. T. Samulski and M. T. Shaw, *Polymer Mater. Sci. Eng.* **55**, 840-845 (1986).
- "Poly(benzylglutamate): Order Parameter, Oriented Gel and Novel Derivatives", M. D. Poliks, Y.-W. Park and E. T. Samulski, *Mol. Cryst. & Liq. Cryst.* **155**, 321-346 (1987).
- "D-NMR Study of the Structure and Dynamics of the Side Chains of Several Solid Polyglutamates", E. Meirovitch, E. T. Samulski, A. Leed, H. A. Scheraga, S. Ranavavare, G. Nemethy and J. H. Freed, *J. Phys. Chem.* **91**, 4840-4851 (1987).
- "A High Pressure DTA/Dilatometric Apparatus Based on An Instron Capillary Rheometer", B. S. Hsiao, M. T. Shaw and E. T. Samulski, *Rev. Sci. Instr.* **58**, 1009-1013 (1987).
- "Flexible Solutes In a Nematic Solvent", B. Janik, E. T. Samulski and H. Toriumi, *J. Phys. Chem.* **91**, 1842-1850 (1987).
- "Thermotropic Copolyesters III. Synthesis and Characterization of Liquid Crystal Copolyesters Containing the Bicyclo[2.2.2]octane Ring System", M. B. Polk, H. D. Banks, F. Onwumere, N. Venkatasubramanian, M. Nandu, M. Phingbodhipakkiya and E. T. Samulski, *J. Polym. Sci. A* **26**, 2405-22 (1988).
- "The Effects of Temperature and Pressure on the Dynamic Longitudinal Volume Viscosity of Two Model Polymers", B. S. Hsiao, M. T. Shaw and E. T. Samulski, *J. Rheology*, **32**, 533-553 (1988).
- "Pressure-Induced Phases in a Thermotropic Polyester", B. S. Hsiao, M.T. Shaw and E. T. Samulski, *Macromolecules*, **21**, 543-545, (1988).
- "Rubber Elasticity: A Phenomenological Approach Including Orientational Correlations", B. Deloche and E. T. Samulski, *Macromolecules*, **21**, 3107-3111, (1988).
- "Investigation of the Thermal Degradation of Alkyl Isocyanate Polymers by Direct Pyrolysis Mass Spectrometry", B. Durairaj, A. W. Dimock, E. T. Samulski, and M. T. Shaw, *J. Polymer Science*, **27**, 3211-3225 (1989).
- "Study of a Thermotropic Liquid Crystalline Polyester at Elevated Pressures", B. S. Hsiao, M. T. Shaw, and E. T. Samulski, *J. Polym. Sci.*, **28**, 189-202 (1989).
- "Synthesis and Physical Properties of Liquid Crystalline Alkyl Isocyanate Copolymers", B. Durairaj, E. T. Samulski, and M. T. Shaw, *Macromolecules*, **23**, 1229-1234 (1990).
- "NMR Investigation of Chain Deformation in Sheared Polymer Fluids", A. I. Nakatani, M. D. Poliks, and E. T. Samulski, *Macromolecules*, **23**, 2686-2692 (1990).
- "Alkyl Chains in Nematic Field. I. A Treatment of Conformer Shape", D. J. Photinos, E. T. Samulski, and H. Toriumi, *J. Phys. Chem.*, **94**, 4689-4694 (1990).
- "Alkyl Chains in a Nematic Field. II. Temperature and Chain Length Dependence in Ordering", D. J. Photinos, E. T. Samulski, and H. Toriumi, *J. Phys. Chem.*, **94**, 4694-4700 (1990).
- "Molecular Flexibility and Orientational Ordering of Nematic Liquid Crystals", D. J. Photinos, E. T. Samulski, and H. Toriumi, *J. Chem. Phys.*, **94**, 2758-2772 (1991).
- "Chain Orientation in Deformed Networks via NMR", C-D. Poon, E. T. Samulski and A. I. Nakatani, *Makromol. Chem. Macromol. Symp.*, **40**, 109-120 (1990).
- "*n*-Hexane Proton Dipolar Couplings and the Rotational Isomeric State Approximation", D. J. Photinos, B. J. Poliks, A. F. Terzis and H. Toriumi, *Mol. Phys.*, **72**, 333-344 (1991).
- "New Thermotropic Liquid Crystals Derived from Thiophene", R. Cai and E. T. Samulski, *Liq. Cryst.*, **9**, 617-634 (1991).

- “Deuterium NMR Lineshapes in Polymer Networks”, C-D. Poon and E. T. Samulski, *J. Non-Cryst. Solids*, **131-133**, 509-515 (1991).
- “Molecular ordering in nematics: The modular formulation of the potential of mean torque”, D. J. Photinos, E. T. Samulski, and H. Toriumi, *Mol. Cryst. Liq. Cryst.*, **204**, 161-176 (1991).
- “A Deuterium NMR Study of Benzene Absorbed on Boehmite Glasses”, J. Fukasawa, C-D. Poon and E. T. Samulski, *Langmuir*, **7**, 1727-1733 (1991).
- “Bilayer structures in cholesteric, cyclic-siloxane liquid crystals”, T.J. Bunning, H. E. Klei, E.T. Samulski, R. L. Crane and R. J. Linville, *Liq. Cryst.*, **10**, 445-456 (1991).
- “Liquid Crystalline aromatic polyesters derived from 2,5-thiophene”, R. Cai, J. Preston and E. T. Samulski, *Macromolecules*, **25**, 563- 569 (1992).
- “Thiophene-containing poly(arylene ether ketone)s. 1. Polymerization of bis(p-fluorobenzoyl)aryl systems with 4,4'-isopropylidenediphenol”, J. M. DeSimone, S. Stoppel, E. T. Samulski, Y. Q. Wang and A. B. Brennan, *Macromolecules*, **25**, 2546-2550 (1992).
- “Swelling of Constrained polymer gels”, Y. Rabin and E. T. Samulski, *Macromolecules*, **25**, 2985-2987 (1992).
- “The Behavior of Rigid Macromolecules in Self-assembly at an Interface”, E. Enriquez K. H. Gray, V. F. Guarisco, R. W. Linton, K. D. Mar and E. T. Samulski, *J. Vac. Sci. Technol. A*, **10**, 2775-2782 (1992).
- “Molecular flexibility in nematics: from alkanes to dimer mesogens”, D. J. Photinos, E. T. Samulski, H. Toriumi, *Discuss. Faraday Soc.*, **88**, 1875-1883 (1992).
- “Conformations of *n*-Hexane from Proton Dipolar Couplings: The Role of Torsion Angle Fluctuations”, D. J. Photinos, E. T. Samulski and A. F. Terzis, *J. Phys. Chem.*, **96**, 6979-6981 (1992).
- “NMR study of the effects of electric dipole interactions on the ordering of chain solutes in the nematic phase”, D. J. Photinos, C.-D. Poon, E. T. Samulski and H. Toriumi, *J. Phys. Chem.*, **96**, 8176-8180 (1992).
- “Flagellenes: Nanophase-Separated, Polymer-Substituted Fullerenes”, E. T. Samulski, J. M. DeSimone, M. O. Hunt, Jr., Y. Menciloglu, R. C. Jarnagin, G. A. York, K. B. Labat and H. Wang, *Chem. Materials*, **4**, 1153-1157 (1992).
- “Self-assembled α -helical polypeptide films”, E. Enriquez and E. T. Samulski, *Materials Research Soc. Symp. Proc.* **225**, 423-434 (1992).
- “Thiophene-based poly(arylene ether ketone)s. 2. Thermal and Mechanical Properties of Amorphous Systems Using bis(p-fluorobenzoyl)aryl Monomers”, A. B. Brennan, Y. Q. Wang, J. M. DeSimone, S. Stoppel, and, E. T. Samulski, *Polymer*, **34**, 807-812 (1993).
- “Electric dipole interactions of chain solutes in nematics: The analysis of segmental ordering in dibromoalkanes”, D. J. Photinos and E. T. Samulski, *J. Chem. Phys.*, **98**, 10009-10016 (1993).
- “Organic low molar mass and polymeric liquid crystalline NLO materials”, H. Wang, M.Y. Jin, R. C. Jarnagin and E. T. Samulski, *SPIE Organic & Biological Otoelectronics Symposium Proc.* **1853**, 89-98 (1993).
- “Thiophene-based liquid crystalline poly(benzoxazole)s” J. H. Promislow, J. Preston, and E. T. Samulski, *Macromolecules*, **26**, 1793-1795 (1993).
- “Cyclic versus Linear Siloxane Liquid Crystals: Phas Behavior and X-ray Diffraction Results” T. J. Bunning, H. E. Klei, E. T. Samulski, W. W. Adams and R. L. Crane, *Mol. Cryst. Liq. Cryst.*, **231**, 163-174 (1993).
- “ α -helical polypeptide materials”, E. Enriquez, M.Y. Jin, R. C. Jarnagin and E. T. Samulski, *Materials Research Society Symp. Proc.*, **292**, 163-168 (1993).

- “Oblate hexaalkoxy triphenylene solutes in a prolate nematic solvent: A deuterium NMR study of alkyl chain ordering” Z. Luz, D. J. Photinos, and E. T. Samulski, *J. Amer. Chem. Soc.*, **115**, 10895-900 (1993).
- “Thiophene-based poly(arylene ether)s: 4. Synthesis of poly(arylene ether sulfone)s” R. S. Archibald, V. V. Shears, E. T. Samulski, J. M. DeSimone, *Macromolecules* **23**, 7083-85 (1993).
- “Liquid crystalline polyesters containing isophthalic acid” R. Cai and E. T. Samulski, *Macromolecules* **27**, 135-42 (1994).
- “Electric Field Poling Effects on the Molecular Reorientational Dynamics of Side-Chain Nonlinear Optical Materials” H. Wang, R. C. Jarnagin and E. T. Samulski, *Macromolecules* **27**, 4705 - 4713 (1994).
- “Phase behavior of Cyclic Siloxane-based Liquid Crystalline Compounds” K. D. Gresham, C. M. McHugh, T. J. Bunning, R. L. Crane, H. E. Klei, and E. T. Samulski, *J. Polym. Sci. A*, **32**, 2039-2047 (1994).
- “Effects of Substrate on Ultra-Thin Films of Poly- γ -benzyl-L-glutamate by Scanning Probe Microscopy” I. H. Musselman, D. L. Smith, E. Enriquez, V. F. Guarisco, and E. T. Samulski, *J. Vac. Sci. Technol. A*, **12** 2523-2529 (1994).
- “Effects of Deposition Parameters on Morphology of Langmuir-Blodgett Films of Poly- γ -benzyl-L-glutamate by Atomic Force Microscopy”, D. L. Smith, I. H. Musselman, E. Enriquez, V. F. Guarisco, and E. T. Samulski, *Langmuir*, (1994).
- “Structural Characterization of a Polymer-substituted Fullerene (Flagelene) by Small-angle Neutron Scattering” K. A. Affholter, G. J. Bunick, J. M. DeSimone, M. O. Hunt, Jr., Y. Z. Menceloglu, E. T. Samulski, and G. D. Wignall, *Mater. Res. Soc. Symp. Proc.*, **359**, 335-340 (1995).
- “Electrochemical Measurement of Anisotropic Diffusion in Thin Lyotropic Liquid Crystal Films Using Interdigitated Array Electrodes” C-h. Chen, T. A. Postlethwaite, J. E. Huchison, E. T. Samulski, and R. M. Murray, *J. Phys. Chem.*, **99**, 8804-8811 (1995).
- “Isomeric Poly(benzophenone)s: Synthesis of Highly Crystalline Poly(4,4'-benzophenone) & Amorphous Poly(2,5-benzophenone), a Soluble Poly(*p*-phenylene) Derivative” R. W. Phillips, V. V. Sheares, E. T. Samulski, and J. M. DeSimone, *Macromolecules*, **28**, 3012 (1995). {Erratum CA 120:271297}
- “Orientation behavior of thermoplastic elastomers studied by ^2H -NMR spectroscopy” A. Dardin, C. Boeffel, H. W. Spiess, R. Stadler and E. T. Samulski, *ACS Symposium Ser.*, **597**, 190-203 (1995).
- “Synthesis and SANS Structural Characterization of Polymer-substituted Fullerenes (Flagelenes)” G. D. Wignall, K. A. Affholter, G. J. Bunick, J. M. DeSimone, M. O. Hunt, Jr., Y. Z. Menceloglu, and E. T. Samulski, *Macromolecules*, **28**, 6000-6006 (1995).
- “Electric-field-enhanced Self-assembly of α -helical Polypeptides”, C. G. Worley, R. W. Linton, and E. T. Samulski, *Langmuir*, **11**, 3805-10 (1995).
- “Preparation of CdS Nanoparticles Within An Ordered Polypeptide Matrix” E. J. Nelson and E. T. Samulski, *Mat. Sci. & Engr. C*, **c2**, 133-140 (1995).
- “Local motions in polymeric and low-molar-mass supramolecular hydrogen bond assemblies. One- and two-dimensional ^2H -NMR studies” A. Dardin, C. Boeffel, H. W. Spiess, R. Stadler and E. T. Samulski, *Acta Polym.*, **46**, 291-9 (1995).
- “Aggregation of amphiphilic molecules in supercritical carbon dioxide: A small angle X-ray Scattering Study”, J. L. Fulton, D. M. Pfund, J. B. McClain, T. J. Romack, E. E. Maury, J. R. Combes, E. T. Samulski, J. M. DeSimone, and M. Capel, *Langmuir*, **11**, 4241-9 (1995).
- “On the origins of spontaneous polarization in tilted smectic liquid crystals” D. J. Photinos, and E. T. Samulski, *Science*, **270**, 783-786 (1995).

- “Multilayered crystalline structures and liquid crystalline phases in a mesogen with siloxane tails” C. A. Vieth, E. T. Samulski, and N. S. Murthy, *Liq. Cryst.*, **19**, 557-63 (1995).
- “Monolayers in Three Dimensions: NMR, thermal and electron hopping studies of alkanethiol stabilized gold clusters” C. S. Johnson, E. T. Samulski and R. W. Murray, *J. Amer. Chem. Soc.*, **117**, 12537 (1995).
- “Genetically Expressed Monodispersed α -helical Polypeptides” Bartlett, J. S., Samulski, R. J., Li, Y., and Samulski, E. T. *New Macromolecular Architecture and Functions* ed. M. Kamachi and A. Nakamura, P 159-169 Springer-Verlag, Berlin-Heidelberg (1996).
- “Solution properties of a CO₂-soluble fluoropolymer via small angle neutron scattering”, J. B. McClain, D. Londono, J. R. Combes, T. J. Romack, D. P. Canelas, D. E. Betts, G. D. Wignall, E. T. Samulski, and J. M. DeSimone, *J. Amer. Chem. Soc.*, **118**, 917-18 (1996).
- “Shape-dominated ordering in nematic solvents. A deuterium NMR study of cycloalkane solutes” A. F. Terzis, C-D. Poon, E. T. Samulski, Z. Luz, R. Poupko, H. Zimmermann, K. Mueller, H. Toriumi and D. J. Photinos, *J. Amer. Chem. Soc.*, **118**, 2226-34 (1996).
- “Effects of polypeptide conformation and surface binding on static secondary ion mass spectra”, C. G. Worley, E. P. Enriquez, E. T. Samulski, and R. W. Linton, *Surf. Interface Anal.*, **24**, 59-67 (1996).
- “High pressure NMR studies in liquid and supercritical CO₂” A. Dardin, J. M. DeSimone and E. T. Samulski, *Polym. Mater. Sci. Eng.*, **74**, 258-9 (1996).
- “Characterization of polymers and amphiphiles in supercritical CO₂ using small angle neutron scattering and viscometry”, J. B. McClain, D. E. Betts, D. P. Canelas, E. T. Samulski, and J. M. DeSimone, D. Londono, and G. D. Wignall, *Polym. Mater. Sci. Eng.*, **74**, 234-5 (1996).
- “Spatial distribution functions: liquid CH₃CN and CO₂” A. F. Terzis, and E. T. Samulski, *Chem. Phys. Lett.*, **251**, 157-63 (1996).
- “Orientation of polybutadiene chains in thermoplastic elastomers” V. Abetz, A. Dardin, R. Stadler, J. Hellmann, E. T. Samulski, and H. W. Spiess, *Polym. Mater. Sci. Eng.*, **74**, 331-2 (1996).
- “Deuterium NMR study of water in oriented nylon 6 fibers” J. L. Hutchison, N. S. Murthy, and E. T. Samulski, *Macromolecules*, **29**, 5551-5557 (1996).
- “Orientation of polybutadiene chains in thermoplastic elastomers” V. Abetz, A. Dardin, R. Stadler, J. Hellmann, E. T. Samulski and H. W. Spiess, *Colloid Polym. Sci.*, **274**, 723-731 (1996).
- “Thermally stable nonlinear optical activity in a smectic-A liquid crystal” H. Wang, M.Y. Jin, R. C. Jarnagin, T. J. Bunning, W. Adams, B. Cull, Y. Shi, S. Kumar, and E. T. Samulski, *Nature*, **384**, 244-7 (1996).
- “Design of Nonionic Surfactants for Supercritical Carbon Dioxide”, McClain, J.B.; Betts, D.E.; Canelas, D.A.; Samulski, E.T.; DeSimone, J.M.; Londono, H.D.; Cochran, H.D.; Wignall, G.D.; Chillura-Martino, D. Triolo, R. *Science*, **274**, 2049-2052 (1996).
- “Photoinduced graft polymerization of styrene onto polypropylene substrates” Y. Li, J. M. DeSimone, C-D. Poon, and E. T. Samulski, *J. Appl. Polym. Sci.*, **64**, 883-889 (1997).
- “Spontaneous polarization in tilted smectics” D. J. Photinos, A. F. Terzis, E. T. Samulski, T. J. Dingemans, A. Chen and C-D. Poon, *Mol. Cryst. Liq. Cryst.*, **292**, 265-76 (1997).
- “Orientational order of water confined in anisotropic cavities” A. F. Terzis, P. T. Snee and E. T. Samulski, *Chemical Physics Letters*, **264**, 481-486 (1997).
- “Molecular ordering and the direct measurement of weak proton-proton dipolar interactions in a rubber network” P. T. Callaghan and E. T. Samulski, *Macromolecules*, **30**, 113-122 (1997).

- “Relaxation of Stress and Orientation in Thermo-reversible Networks” A. Dardin, H-W. Spiess, R. Stadler, & E. T. Samulski, *Polym. Gels and Networks*, **5**, 37-54 (1997).
- “A simplified approach to the interpretation of nuclear spin correlations in entangled polymeric liquids” R. C. Ball, P. T. Callaghan and E. T. Samulski, *J. Chem. Phys.*, **106**, 7352-62 (1997).
- “High-pressure NMR of polymers dissolved in supercritical carbon dioxide” A. Dardin, J. B. Cain, J. M. DeSimone, C. S. Johnson, Jr., and E. T. Samulski, *Macromolecules*, **30**, 3593-99 (1997).
- “Nuclear Magnetic Resonance line shape from strained Gaussian networks” M. Warner, P. T. Callaghan and E. T. Samulski, *Macromolecules*, **30**, 4733-36 (1997).
- “Quantitative calculation of spontaneous polarization in ferroelectric smectics” A. F. Terzis, D. J. Photinos, E. T. Samulski, *J. Chemical Phys.*, **107**, 4061-69 (1997).
- “A comparative structural study of three prospective longitudinal ferroelectric smectic liquid crystals” Y. S. Shi, J. T. Mang, S. Kumar and E. T. Samulski, *Mol. Cryst. Liq. Cryst. Sci. & Tech Sec. A* **302**, 47-55 (1997).
- “A thiophene-based liquid crystalline aromatic polyamide” S. Stoppel, E. T. Samulski, J. Preston, B. S. Hsiao, K. H. Gardner, and H. Shih, *High Perform. Polym.* **9**, 229-249 (1997).
- “Extraction of a hydrophilic compound from water into liquid CO₂ using dendritic surfactants” A. I. 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).
- “Ferroelectric liquid crystals derived from isolucine I. Synthesis and characterization” T. J. Dingemans, C-D. Poon, E. T. Samulski, H. Uehara and J. Hatano, *Liquid Crystals*, **24**, 247-253 (1998).
- “Ferroelectric liquid crystals derived from isolucine II. Orientational ordering by carbon-13 separated local field spectroscopy” A. Chen, C-D. Poon, T. J. Dingemans, and E. T. Samulski, *Liquid Crystals*, **24**, 255-262 (1998).
- “Fluorocarbons dissolved in supercritical carbon dioxide. NMR evidence for specific solute-solvent interactions” A. Dardin, J. M. DeSimone, and E. T. Samulski, *J. Phys. Chem*, **102**, 1775-1780 (1998).
- “Tilt, polarity, and spontaneous symmetry breaking in liquid crystals” A. G. Vanakaras, D. J. Photinos and E. T. Samulski, *Phys. Rev. E.*, **57**, R4875-R4878 (1998).
- “The Molecular Weight Dependence of Nuclear Spin Correlations in Entangled Polymeric Liquids” P. T. Callaghan and E. T. Samulski, *Macromolecules*, **31**, 3693-3705 (1998).
- “Biaxial smectic phases in non-linear mesogens: optical properties and phase behaviour of an oxadiazole liquid crystal” K. J. K. Semmler, T. J. Dingemans, and E. T. Samulski, *Liquid Crystals*, **24**, 799-803 (1998).
- “Chain Deformation for a Polymer Melt under Shear” P. T. Callaghan, M. L. Kilfoil and E. T. Samulski, *Phys. Rev. Lett.*, **81**, 4524-4527 (1998).
- “Spectral tuning of light-emitting diodes with phenyl-thiophenes” T.J. Dingemans, A. Bacher, M. Thelakat, L. G. Pedersen, E. T. Samulski and H-W. Schmidt, *Synthetic Metals*, **105**, 171-177 (1999).
- “Non-linear boomerang-shaped liquid crystals derived from 2,5-bis(*p*-hydroxyphenyl)-1,3,4-oxadiazole” T. J. Dingemans and E. T. Samulski, *Liquid Crystals*, **27**, 131-136 (2000).
- “Molecular weight dependence of nuclear spin correlations in PDMS networks” P. T. Callaghan and E. T. Samulski, *Macromolecules* **33**, 3795-3802 (2000).
- “Synthesis and characterization of poly(*p*-phenylene)s with nonlinear optical sidechains” D. K. Taylor and E. T. Samulski, *Macromolecules* **33**, 2355-2358 (2000).

- “Liquid crystals comprising hydrogen-bonded organic acids - I. Mixtures of non-mesogenic acids” S. K. Kang and E. T. Samulski *Liquid Crystals* **27**, 371-376 (2000).
- “Liquid crystals comprising hydrogen-bonded organic acids - II. Heterodimers in mixed mesogenic acids” S. K. Kang, E. T. Samulski, P. Kang, and J. Choo *Liquid Crystals* **27**, 377-385 (2000).
- “Do bridging water molecules dictate the structure of a model dipeptide in aqueous solution?” Poon C. D., Samulski E.T., Weise C.F., and J. Weisshaar *J. Am. Chem. Soc.* **122**: (23) 5642-5643 (2000).
- “New mesogens with cubic phases: hydrogen-bonded bipyridines and siloxane-containing benzoic acids I. Preparation and phase behaviour” E. Nishikawa and E. T. Samulski, *Liquid Crystals* **27**, 1457-1462 (2000).
- “New mesogens with cubic phases: hydrogen-bonded bipyridines and siloxane-containing benzoic acids II. Structural Studies.” E. Nishikawa and E. T. Samulski, *Liquid Crystals* **27**, 1463-1471 (2000).
- “Javelin-, hockey stick-, and boomerang-shaped liquid crystals. Structural variations on *p*-quinquephenyl.” T. J. Dingemans, N. S. Murthy and E. T. Samulski, *J. Phys. Chem. B* **105**, 8845-8860 (2001).
- “Fabrication and Characterization of Nanotubular Semiconductor Oxides In $2O_3$ and Ga $2O_3$.” B. Cheng and E. T. Samulski, *J. Materials Chem.* **11**, 2901-2902 (2001).
- “New mesogens forming nanophase-separated liquid crystalline structure – Cubic Phase.” E. Nishikawa, J. Yamamoto, H. Yokoyama, and E. T. Samulski, *Mol. Cryst. Liq. Cryst.* **364**, 605-610 (2001).
- “Biaxial deformations of a polymer network measured via deuterium quadrupolar interactions” P. T. Callaghan and E. T. Samulski, *Macromolecules* **36**, 724-735 (2003).
- “One-step, ambient-temperature synthesis of antimony sulfide (Sb_2S_3) micron-size polycrystals with a spherical morphology,” Bin Cheng and E. T. Samulski, *Material Res. Bulletin* **38**, 297-301 (2003).
- “NMR study of the effects of electric dipole interactions on the ordering of polar solutes in nematic solvents?” C. Wutz, T. Dingemans, A. Terzis, D. Photinos and E. T. Samulski, *J. Phys. Chem.* **118**, 7046-7061 (2003).
- “Sol-gel template synthesis and liquid CO_2 developed TiO_2/CdS composite nanowire arrays,” Bin Cheng, Clarence Murray and E. T. Samulski, *Materials Research Society Proceedings*, **737**, 413-417 (2003).
- “Professor Walter Kauzmann in the late 1960s: how a chance conversation resulted in a thesis chapter, and his simple perspective on polywater.” E. T. Samulski *Biophysical Chemistry* **105**, 173-174 (2003).
- “Rapid, high yield, solution-mediated transformation of polycrystalline selenium powder into single-crystal nanowires.” B. Cheng and E. T. Samulski, *Chem. Comm.*, 2024 – 2025 (2003).
- “The elusive thermotropic biaxial nematic phase in rigid bent-core molecules” B. R. Acharya, A. Primak, and S. Kumar T. J. Dingemans and E. T. Samulski, *PRAMANA-J PHYS* **61** (2): 231-237 (2003).
- “Electronic properties of $LiMo_3Se_3$ -Nanowires and Mo_3Se_3 -nanowire-networks for nanoscale electronic devices,” Heidelberg, A, Bloess, H, Schultze, JW, et al *Z PHYS CHEM* **217** (5): 573-585 (2003).
- “Supercritical CO_2 -mediated intercalation of PEO in clay,” Q. Zhao and E. T. Samulski, *Macromolecules*, **36**, 6967 - 6969 (2003).
- “Wholly Aromatic Ether-imides. Potential Materials for n-Type Semiconductors,” Theo J. Dingemans, Stephen J. Picken, N. Sanjeeva Murthy, Paul Mark, Terry L. StClair, and Edward T. Samulski, *Chem. Mater.* **2004**, *16*, 966-974.
- “Hydrothermal synthesis of one-dimensional ZnO nanostructures with different aspect ratios”. Bin Cheng, Edward T. Samulski* *Chem. Comm.* **2004** 986-987.

- “An achiral, anticlinic-promoting, smectic liquid crystal architecture” J. Thisayukta and E. T. Samulski, *J. Mater. Chem.*, **2004**, *14*, 1554 – 1559
- “Thermotropic biaxial nematic liquid crystals,” L. A. Madsen, T. J. Dingemans, M. Nakata, and E. T. Samulski, *Phys. Rev. Lett.* **2004**, *92*(14) 145505 1-4
- “Large-scale, solution phase growth of smaller diameter, single-crystalline SnO₂ nanorods” Bin Cheng,[†] Joette M. Russell,[†] Wensheng Shi,[†] Lei Zhang,[‡] Edward T. Samulski *J. Am. Chem. Soc.*, **2004**, *126*, 5972-5973.
- “In-situ Fabrication of Dispersed, Crystalline, Platinum Nanoparticles Embedded in Carbon Nanofibers” Lei Zhang, Bin Cheng, and Edward T. Samulski, *Chem. Phys. Lett.* **398**, 505-510 (2004)
- “Self-assembled monolayers of oligo peptides on gold: Surface characterization and orientation distribution analysis.” X. Wen, R. L. Linton and E. T. Samulski, *J. Phys. Chem* **108**, 9673-9681 (2004).
- “Investigating the core moiety of banana-shaped liquid crystals using 2H NMR coupled with quantum simulations” V. Domenici, L.A. Madsen, E-J. Choi, E., T. Samulski, and C. A. Veracini, *Chem. Phys. Lett.* **402**, 318-323 (2005).
- “In-situ Polymerization of Poly(methyl methacrylate)/clay Nanocomposites in Supercritical Carbon Dioxide,” Q. Zhao and E. T. Samulski, *Macromolecules*, **38**:7967-7971 (2005).
- “In-situ Electrochemical Synthesis of 1-Dimensional Alumina Nanostructures” L. Zhang, B. Cheng, W. Shi and E. Samulski *J. Mater. Chem.* **15**, 4889 – 4893(2005)
- “Influence of excitation density on photoluminescence of zinc oxide with different morphologies and dimensions” W.S. Shi, B. Cheng, L. Zhang and E. T. Samulski, *J. Appl. Phys.* **98**, 083502 (2005).
- “Addressing non-idealities in NMR experiments on rotating liquid crystals” L. A. Madsen and E. T. Samulski, *Liq. Cryst.* **32**, 1419-1425 (2005).
- “Synthesis of Variable Aspect ratio, Single-crystalline ZnO Nanostructures” Bin Cheng, Wensheng Shi, Joette M. Russell, Lei Zhang, and Edward T. Samulski *J. Inorg. Chem.* **45** (3) 1208-1214 (2006).
- “A Comparative Study of Poly(methyl methacrylate) and Polystyrene/clay Nanocomposites Prepared in Supercritical Carbon Dioxide,” Q. Zhao and E. T. Samulski, *Polymer*, **47**, 663-671 (2006).
- “Comment on Thermotropic biaxial nematic liquid crystals - Reply” Madsen LA, Dingemans TJ, Nakata M, et al. *PHYSICAL REVIEW LETTERS* **96** (21): Art. No. 219804 (2006).
- “Alignment of nematic liquid crystals using carbon nanotube films” Russell JM, Oh SJ, LaRue I, et al. *THIN SOLID FILMS* **509** (1-2): 53-57 (2006).
- “Optical properties of N,N'-bis(3-phenoxy-3-phenoxy-phenoxy)-1,4,5,8-naphthalene-tetracarboxylic diimide by spectroscopic ellipsometry” Yang D, Shrestha RP, Dingemans TJ, et al. *THIN SOLID FILMS* **500** (1-2): 9-14 (2006).
- “Superhydrophobic Behavior of a Perfluoropolyether Lotus-Leaf-like Topography” Lei Zhang, Zhilian Zhou, Bin Cheng, Joseph M. DeSimone, and Edward T. Samulski *Langmuir* **22**, (20) 8576 – 8580 (2006).
- “Uniaxial and biaxial nematic liquid crystals” Dingemans TJ, Madsen LA, Zafiroopoulos NA, Lin, W. and Samulski, E. T. *Phil. Trans. Roy. Soc. A Math. Phys. & Engr. Sci* **364** (1947) 2681-2696 (2006).
- “Weak surface anchoring energy of 4-cyano-4'-pentyl-1,1'-biphenyl on perfluoropolyether Langmuir-Blodgett films” J. M. Russell-Tanner, Sadao Takayama, Akihiko Sugimura J. M DeSimone and E. T. Samulski *J. Chem. Phys.* **126**, 244706 (2007).
- “Supramolecular nanomimetics: Replication of micelles, viruses, and other naturally occurring nanoscale objects” Maynor BW, Larue I, Hu Z, et al. *SMALL* **3** (5): 845-849 MAY (2007).

- “Catalytic synthesis of biodiesel from high free fatty acid-containing feedstocks” Zafiropoulos NA, Ngo HL, Foglia TA, et al. *CHEMICAL COMMUNICATIONS* (35): 3670-3672 (2007)
- “Efficient two-step synthesis of biodiesel from greases” Ngo HL, Zafiropoulos NA, Foglia TA, et al. *ENERGY & FUELS* Volume: 22 Issue: 1 Pages: 626-634 JAN-FEB (2008)
- “All Aromatic Liquid Crystals” Nicholas A. Zafiropoulos, E-Joon Choi, Theo Dingemans, Wenbin Lin and Edward T. Samulski, *Chemistry of Materials*, **20**(12); 3821-3831 (2008).
- “Synthesis of water soluble graphene” Si Y, Samulski ET *NANO LETTERS* **8** (6) 1679-1682 (2008).
- "The Patterning of Sub-500 nm Inorganic Oxide Structures" by Joseph DeSimone, Meredith J. Hampton, Stuart S. Williams, Zhilian Zhou, Janine Nunes, Doo Hyun Ko, Joseph L. Templeton, Edward T. Samulski, Joseph M. DeSimone, *Advanced Materials* **20**, (14) 5229-5234 (2008).
- “Characterizing enhanced performance of nanopatterned bulk heterojunction organic photovoltaics.” *Proc. SPIE*, Vol. 7047, 70470S (2008).
- “Exfoliated Graphene Separated by Platinum Nanoparticles”, Si YC, Samulski ET, *CHEMISTRY OF MATERIALS* **20** Issue: 21 6792-6797 (2008)
- Nanostructured Titania-Polymer Photovoltaic Devices Made Using PFPE-Based Nanomolding Techniques” Williams SS, Hampton MJ, Gowrishankar V, et al. *CHEMISTRY OF MATERIALS* **20** 5229-5234 (2008).
- “The Pursuit of a Scalable Nanofabrication Platform for Use in Material and Life Science Applications” Gratton SEA, Williams SS, Napier ME, et al. *ACCOUNTS OF CHEMICAL RESEARCH* **41** (12) 1685-1695 (2008).
- “Electrophotonic enhancement of bulk heterojunction organic solar cells through photonic crystal photoactive layer” John R. Tumbleston, Doo-Hyun Ko, Edward T. Samulski, and Rene Lopez, *Appl. Phys. Lett.* **94**, 043305 (2009).
- “Asymmetric Oxadiazole Mesogens as Candidates for Low-Temperature Biaxial Nematics.” A. Zafiropoulos, Wenbin Lin and E. T. Samulski, *Liquid Crystals*, **36**, 1366-5855 (2009)
- “Absorption and quasiguide mode analysis of organic solar cells with photonic crystal photoactive layers” John R. Tumbleston, Doo-Hyun Ko, Edward T. Samulski, and Rene Lopez, *OPTICS EXPRESS* **17**, No. 9, 7670-7681 (2009).
- “Photonic Crystal Geometry for Organic Solar Cells” Doo-Hyun Ko, John R. Tumbleston, Lei Zhang, Stuart Williams, Joseph M. DeSimone, Rene Lopez and Edward T. Samulski* *Nano Lett.*, **9**, 2742–2746 (2009)
- “Towards Room Temperature Biaxial Nematics” Lori L. Cooper, Edward T. Samulski and Eric Scharrer, *Molecular Crystals & Liquid Crystals*, **511**, 1673-1687 (2009).
- “Uniform Alignment of Liquid Crystals Induced by Perfluoropolyether Film Exposed to Linearly Polarized Ultraviolet Light” Usami K, Sugimura A, Samulski ET *Molecular Crystals & Liquid Crystals*, **516**, 38 (2009).
- “Mesoporous Silica-Supported Diarylammonium Catalysts for Esterification of Free Fatty Acids in Greases” Helen L. Ngo • Nicholas A. Zafiropoulos • Thomas A. Foglia • Edward T. Samulski • Wenbin Lin *J Am Oil Chem Soc* **87**:445–452 (2010).
- “High-Resolution PFPE-based Molding Techniques for Nanofabrication of High-Pattern Density, Sub-20 nm Features: A Fundamental Materials Approach” Stuart S. Williams,† Scott Retterer,| Rene Lopez,‡ Ricardo Ruiz,⊥ Edward T. Samulski,† and Joseph M. DeSimone, *Nano Lett.* **10**, 1421–1428 (2010).
- “Insights into the cybotactic nematic phase of bent-core molecules” O. Francescangeli and E. T. Samulski *Soft Matter* **6**, 2413–2420 (2010).

Book Chapters, Review Articles and Misc. (18)

- “Solid ‘Liquid Crystalline’ Films of Synthetic Polypeptides: A New State of Matter”, E. T. Samulski and A. V. Tobolsky, in Chemical Dynamics, J. O. Hirschfelder and D. Henderson, ed., *Advances in Chemical Physics* **38**, 529-535 (1970).
- “The Mesomorphic State: Plastic and Liquid Crystals”, D. B. DuPre, E. T. Samulski and A. V. Tobolsky, *Polymer Science and Materials*, 123-160, Wiley-Interscience (1971).
- “Effect of Organic Solvents on the Formation of Liquid Crystals in Non-Amphiphilic Systems: Systems With Cholesteric Properties”, E. T. Samulski and A. V. Tobolsky, *Liquid Crystals and Plastic Crystals* **1**, 175-199 Halsted (1974).
- “Polypeptide Liquid Crystals: A Review”, D. B. DuPre and E. T. Samulski, *Liquid Crystals: The Fourth State of Matter*, Marcel Dekker (1977).
- “Liquid Crystalline Order in Polypeptides”, E. T. Samulski, *Liquid Crystalline Order in Polymers*, 167-190 Academic Press (1978).
- “Polymeric Liquid Crystals”, D. B. DuPre and E. T. Samulski, *Adv. in Liq. Cryst.* **4**, 121-145 (1979).
- “Polymeric Liquid Crystals”, E. T. Samulski, *Physics Today* **35**, 40 May issue (1982).
- “Macromolecular Structure and Liquid Crystallinity”, E. T. Samulski, *Discuss. Faraday Soc.* **79**, 7-20 (1985).
- “Some Physico-Chemical Aspects of Polymeric Liquid Crystals”, E. T. Samulski, *Polym. Sci. Technol.* **28**, 65-82 Plenum (1985).
- “Deuterium NMR Order Parameter Profile”, E. T. Samulski, *The Physics of Complex Fluids*, Wiley (1987).
- “²H NMR Studies of Oriented Fluid Phases”, E. T. Samulski, *Frontiers of Macromolecular Science*, 259-264 (1989).
- “Liquid Crystalline Polymers”, E. T. Samulski, ed. National Materials Advisory Board Pub. NMAB-453, 106 pages, National Academy Press (1990).
- “Solvent-induced Morphology in Nano-Structures” B. Cheng, H. Cui, B. Stoner and E. T. Samulski, *Nanotechnology and Nano-interface Controlled Electronic Devices*, ed. M Iwamoto, K. Kaneto and S. Mashiko, Chapter 19 pp 399-411 Isevier Science B. V. (2003).
- “The Mesomorphic State” E. T. Samulski, *Physical Properties of Polymers*, 2nd Edition, Chap. **5**, 201-262, ACS Professional Reference Book, Edt. J. E. Mark (1993).
- “Very Flexible Solutes: Alkyl Chains and Derivatives” E. T. Samulski, *NMR of Ordered Liquids*, Edt. E. E. Burnell and C. A. de Lange, Chap. **13**, 285 – 304, Kluwer Academic Publishers (2003).
- “The Mesomorphic State” E. T. Samulski, in *Physical Properties of Polymers*, Cambridge Univ. Press, 3rd. Edt. Chapter 5, 316-380 (2004).
- The proceedings of the International Symposium on the Manipulation of Advanced Smart Materials – “Preface” *THIN SOLID FILMS* 509 (1-2): 1-2 (2006).
- “Supramolecular nanomimetics: Replication of micelles, viruses, and other naturally occurring nanoscale objects” Maynor BW, Larue I, Hu Z, et al. *SMALL* 3 (5): 845-849 MAY 2007
- 20th anniversary issue - Preface Luckhurst GR, Samulski ET *LIQUID CRYSTALS* 33 (11-12): 1227-1228 NOV-DEC 2006.
- Pierre_Gilles de Gennes Obituary, *MRS Bulletin*, 32, 689 (2007)
- “Synthesis and Mesomorphism of Polymers with Banana-Shaped Mesogens in the Main Chain” Choi EJ, Zin WC, Kim YC, et al. 6th International Meeting on Information Displays/5th International Display Manufacturing Conference (IMID/IDMC 2006), AUG 22-25, 2006 Daegu, SOUTH KOREA, Proceedings of International Meeting on Information Display Pages: 171-174 (2006)

Patents (4)

“Synthesis of Thiophene-based Polymers” E. T. Samulski, **US Patent # 5,266,677**;

Date of Patent Nov. 30, 1993.

“Thiophene-based Polymers” E. T. Samulski, **US Patent # 5,354,836**;

Date of Patent Apr. 11, 1994.

“Solution phase synthesis of metal oxide nanostructures” **International Pub # WO 2005/062785 A2**

Date of Patent. July 14, 2005

“LOW SURFACE ENERGY POLYMERIC MATERIAL FOR USE IN LIQUID CRYSTAL DISPLAYS” pending 2007.

In Press (1)

“*meta*-Cybotaxis and Nematic Biaxiality” E. T. Samulski, *Liquid Crystals* (2010)

Abbreviation

Chem. Materials

Chem. Phys. Lett.

J. Amer. Chem. Soc.

J. Chem. Phys.

J. Non-Cryst. Solids,

J. Phys. Chem.

J. Polym. Sci.

J. Vac. Sci. Technol.

Liq. Cryst.

Makromol. Chem.

Mat. Sci. & Engr.

Mol. Cryst. Liq. Crust.

Mol. Phys.

Phys. Rev. Lett.

Journal Title

Chemistry of Materials

Chemical Physics Letters

Journal of the American Chemical Society

Journal of Chemical Physics

Journal of Non-Crystalline Solids

Journal of Physical Chemistry

Journal of Polymer Science

Journal of Vacuum Science Technology

Liquid Crystals

Die Makromolekulare Chemie

Materials Science & Engineering

Molecular Crystals and Liquid Crystals

Molecular Physics

Physical Review Letters